

Man-machine interface (MMI) - Actuating principles

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English version

Man-machine interface (MMI) — Actuating principles

(IEC 447 : 1993)

Interface homme-machine (IHM)
Principes de manoeuvre
(CEI 447 : 1993)

Bedienungsgrundsätze für die
Mensch-Maschine-Schnittstelle (MMI)
(IEC 447 : 1993)

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CENELEC

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

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Foreword

The CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 447 : 1993 could be accepted without textual changes, has shown that no common modifications were necessary for acceptance as a European Standard.

The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as EN 60447 on 8 December 1993.

The following dates were fixed:

- latest date of publication
of an identical national
standard (dop) 1994-12-01
- latest date of withdrawal
of conflicting national
standards (dow) 1994-12-01

Annexes designated 'normative' are part of the body of the standard. Annexes designated 'informative' are given only for information. In this standard, annexes A and ZA are normative and annex B is informative.

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INTRODUCTION

Different kinds of actuators enable electrical equipment and processes to be operated and maintained under normal and fault conditions.

In modern equipment, the moving of an actuator in a certain direction is only one method of actuation. In addition, actuators or data input devices arranged in the form of function or alphanumeric keyboards, or other kinds of actuator (e.g. light pen, touch sensitive screen, mouse), are in general use for computerized equipment.

Actuators as a part of the man-machine interface may have a different importance in the dialogue between the operator and the equipment or machine.

Standardization is especially important where safety is concerned (e.g. where an incorrect actuation may cause damage, or where a frequent or rapid actuation is necessary, such as in the operation of cranes or transport vehicles), and is particularly necessary in the case of equipment likely to be operated by unskilled persons.

Ergonomic aspects should also be taken into account.

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MAN-MACHINE INTERFACE (MMI) – ACTUATING PRINCIPLES

1 Scope

This International Standard establishes general actuating principles for manually operated actuators forming part of the man-machine interface associated with electrical equipment, in order to:

- increase the safety (e.g. of persons, property, environment) through the safe operation of the equipment;
- facilitate the proper and timely operation of the actuators.

These principles apply, not only for the operation of electrical equipment, machines, or complete plant under normal conditions, but also under fault or emergency conditions.

This Standard is for general application, from simple cases such as single actuators (e.g. push-buttons) to multiple actuators, forming a part of a large assembly of electrical and non-electrical equipment, or a part of a central process control station.

This Standard establishes correlations between the function of an actuator and its direction of actuating or location in relation to other actuators.

In the absence of particular rules, this standard may also be applied to actuators operated by a part of the human body other than the hand (e.g. to foot-operated devices).

This basic safety publication is intended for use by technical committees in the preparation of standards; it is not intended to be used on its own except in the absence of such standards.

Where no safety consideration is involved, the relevant technical committee may permit specific exclusions within the framework of this basic safety publication, and according to the rules given in IEC Guide 104.

2 Normative references

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

IEC 50(441): 1984, *International Electrotechnical Vocabulary (IEV), Chapter 441: Switchgear, controlgear and fuses*

IEC 73: 1991, *Coding of indicating devices and actuators by colours and supplementary means*

IEC Guide 104: 1984, *Guide to the drafting of safety standards, and the role of Committees with safety pilot functions and safety group functions*