



**SLOVENSKI STANDARD**  
**oSIST prEN 61293:2018**  
**01-julij-2018**

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**Označevanje električne opreme z naznačeno močjo - Varnostne zahteve**

Marking of electrical equipment with ratings related to electrical supply - Safety requirements

Kennzeichnung elektrischer Betriebsmittel mit Bemessungsdaten für die Stromversorgung - Anforderungen für die Sicherheit

Marquage des matériels électriques avec des caractéristiques assignées relatives à l'alimentation électrique - Prescriptions de sécurité

**Ta slovenski standard je istoveten z: prEN 61293:2018**

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## COMMITTEE DRAFT FOR VOTE (CDV)

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OF INTEREST TO THE FOLLOWING COMMITTEES: TC 2,TC 14,TC 21,SC 21A,TC 22,SC 22E,SC 22F,SC 22G,SC 22H,TC 23,SC 23B,SC 23E,SC 23G,SC 23H,SC 23J,SC 23K,TC 31,SC 31G,SC 31M,TC 34,SC 34A,SC 34D,TC 37,SC 37A,SC 37B,TC 38,TC 44,TC 48,SC 48B,TC 61,SC 61B,SC 61C,SC 61D,SC 61H,SC 61J,TC 62,SC 62A,SC 62B,SC 62C,SC 62D,TC 64,TC 66,TC 69,TC 81,TC 82,TC 85,TC 94,TC 95,TC 96,TC 100,TC 108,TC 110,TC 116,SC 121A,SC 121B	<input checked="" type="checkbox"/> PROPOSED HORIZONTAL STANDARD: Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input checked="" type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING <b>Attention IEC-CENELEC parallel voting</b> The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.  The CENELEC members are invited to vote through the CENELEC online voting system.	<input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

**Marking of electrical equipment with ratings related to electrical supply – Safety requirements**

PROPOSED STABILITY DATE: 2022

NOTE FROM TC/SC OFFICERS:

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

# MARKING OF ELECTRICAL EQUIPMENT WITH RATINGS RELATED TO ELECTRICAL SUPPLY – SAFETY REQUIREMENTS

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International Standard IEC 61293 has been prepared by committee 3: Information structures and elements, identification and marking principles, documentation and graphical symbols

This 2<sup>nd</sup> edition cancels and replaces the 1<sup>st</sup> edition published in 1994. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) The status as a Basic Safety Publication has been removed;
- b) The scope is extended to also include the applicability of the publication to product manufacturers;
- c) The visibility of the marking during normal operation should be considered;

- d) More detailed requirements where an equipment has a set or range of rated values for a characteristic;
- e) Requirements for providing the markings also in the technical documentation added;
- f) Some notes have been converted to normative text;
- g) Normative references and references to other standards have been updated.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
XX/XX/FDIS	XX/XX/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

The National Committees are requested to note that for this document the stability date is 2022.

this text is included for the information of the national committees and will be deleted at the publication stage.

# MARKING OF ELECTRICAL EQUIPMENT WITH RATINGS RELATED TO ELECTRICAL SUPPLY – SAFETY REQUIREMENTS

## 1 Scope

This International Standard establishes minimum requirements and general rules on marking electric equipment with ratings and other characteristics to enable the proper and safe selection and installation of electric equipment related to any supply of electricity.

The object of this standard is to:

- provide general requirements for marking of the characteristics related to any supply system, such as voltage, current, frequency and power without any restrictions;
- provide technical committees with uniform methods for the marking of electrical ratings of products.

This publication is primarily intended for application by technical committees when specifying minimum markings of ratings related to any electrical supply of equipment, sub-assemblies and components, but is also applicable for application by product manufacturers for marking their products.

NOTE For further markings see ISO/IEC Guide 51.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60027 (all parts), Letters symbols to be used in electrical technology

IEC 60417 DB, Graphical symbols for use on equipment

IEC 60445, Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals, conductor terminations and conductors

IEC 60569, Degrees of protection provided by enclosures (IP Code)

IEC 60617 DB, Graphical symbols for diagrams

IEC 61082-1:2014, Industrial systems, installations and equipment and industrial products - Structuring principles and reference designations - Part 1: Basic rules

IEC 61140, Protection against electric shock - Common aspects for installation and equipment

IEC 80000, Quantities and units

ISO 7000, Graphical symbols for use on equipment

ISO 80000, Quantities and units

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>

- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1

#### **electric equipment**

item used for such purposes as generation, conversion, transmission, distribution or utilization of electric energy, such as electric machines, transformers, switchgear and controlgear, measuring instruments, protective devices, wiring systems, current-using equipment

[SOURCE: IEC 826-16-01]

### 3.2

#### **rated value**

value of a quantity used for specification purposes, established for a specified set of operating conditions of a component, device, equipment, or system

Note 1 to entry: Rated values are normally assigned by the manufacturer

Note 2 to entry: When specifying a rated value for a quantity, the quantity is often identified by replacing the word "value" with the quantity name in the term

[SOURCE: IEC 151-16-08, modified: Note to entries added]

### 3.3

#### **rated voltage range**

voltage range as declared by the manufacturer expressed by its lower and upper rated voltages

[SOURCE: IEC 151-16-49]

## **4 Marking requirements**

### **4.1 Basic requirements**

Electric equipment shall be marked with electrical ratings on the equipment by a suitable method, for example, by means of name-plates or labels. This marking shall be legible, visible and durable throughout the anticipated life of the equipment, taking into account the environmental conditions in operation. Considerations should also be given to the visibility of the marking during normal operation of the equipment.

Marking shall not be placed on parts intended to be removed, unless it is part of an enclosure which is intended to be removed to install the equipment and must be replaced.

Requirements of material, method and location of the marking for the different product types, are the responsibility of the relevant technical.

Some equipment has a need for marking both input and output characteristics. In such cases consideration shall be given to provide markings for output as well as for input characteristics.

Some electric equipment may be designed for use on more than one supply voltage or frequency. On some equipment, the user may be required to make adjustments for use on a supply system with a given nominal voltage. Some equipment is designed to operate on several nominal voltages or over a voltage range without any adjustment and is marked accordingly. In such cases the equipment shall be properly marked so the user can apply the equipment in a safe way.

If special requirements on the power quality of the power supply is necessary for the safe operation of the equipment, such requirements shall be provided as markings..

Ratings shall be marked with standard abbreviations according to IEC 60445 or with standard graphical symbols taken from IEC 60417 DB, IEC 60617 DB or ISO 7000. Examples of such standard abbreviations are shown in Table A.2

Physical quantities shall be expressed using only the numerical value and their decimal multiples and submultiples followed by the unit symbol as specified in IEC 60027, IEC 80000 or ISO 80000.



Dimensions and tolerances shall be indicated in an unambiguous manner.

## **4.2 Marking of electric equipment with its characteristics**

### **4.2.1 General**

Equipment shall be marked as specified in 4.1 with rated values and other characteristics related to any electricity supply.

Each technical committee shall select the characteristics listed in 4.2 necessary to enable proper and safe application of equipment. Ratings and other characteristics which are not necessary may be omitted.

For products being too small to accommodate a rating plate, colour identification or other means according to an international standard or a recognized code should be used.

### **4.2.2 Characteristics of supply system**

Equipment shall be marked with the relevant characteristics of the supply system to which it has to be connected as follows:

- kind of supply system (AC, DC,), see IEC 60038;
- number of line conductors (e.g. 1, 2, 3);
- other designated conductors (e.g. N, M, PE, see IEC 60445);
- voltage corresponding to the supply system (see IEC 60038);
- frequency corresponding to the supply system.

Capital letters without full stops shall be used. Alphanumeric notations may be replaced by graphical symbols according to IEC 60417 DB. Examples for the recommended applications of these rules, also for the sequence of order and the separation of the characteristics by the character SOLIDUS ("/") are given in Table A.1

### **4.2.3 Rated values of equipment**

The equipment shall be marked with the following rated values of equipment, where applicable:

- rated voltage in volts (V), and/or
- rated frequency in hertz (Hz), and/or
- rated current in amperes (A), and/or
- rated input and/or output power in watts (W) or voltamperes (VA).

SI prefixes based on ISO 80000-1 shall be applied, if applicable. Examples are shown in Table A.1.

Equipment marked with a number of rated voltages should also be marked with the rated input power corresponding to each rated voltage. Equipment marked with a rated voltage range should also be marked with the rated input and output powers corresponding to the minimum (lower) and maximum (upper) voltage levels of the range for which the object is designed and can be operated (see also 4.4.4).

### **4.2.4 Other characteristics**

The equipment shall be marked to indicate the following characteristics, where applicable:

- the IP-rating according to IEC 60529,
- the class according to the classification provided in IEC 61140,
- Indoor/outdoor applicability of the equipment.

#### 4.2.5 Sequence of rated values and other characteristics

If a given sequential order is needed, or the space available is restricted, for example, to one line, the following sequence is recommended:

- characteristics of supply system,
- rated values and unit symbols,
- other characteristics.

Example: 3/N/PE 400/230 V 50 Hz.

For ratings which are listed vertically, a horizontal separating line should be used to avoid confusion (see example in Table A.1, row 14).

### 4.3 Representation of values

#### 4.3.1 General

Each indication within the marking shall consist of the numerical value followed by the unit symbol, separated by the character SPACE SIGN ( ).

#### 4.3.2 Single value

Each rating indication shall consist of:

- a single numerical value;
- the character SPACE SIGN ( );
- a unit symbol.

Example: 60 kV.

#### 4.3.3 Limit values

Where the value to be presented represents a limit, the quantity value shall be presented as specified in 4.4.2 followed by the character SPACE and:

- for an upper limit, the upper-case letters MAX, or
- for a lower limit, the upper-case letters MIN.

Example: 250 V MAX

#### 4.3.4 Two and more values

Equipment suitable for use on any of several specified rated values of input characteristics which requires necessary manual adjustment for operation shall be marked as follows:

- numerical values, each separated by the character SOLIDUS (/) in a consistent descending order, followed by the SPACE SIGN and the unit symbol.,
- unit symbol.

Example: 24/12/6 V.

For equipment which may be used on any of various values of voltages or frequencies and when the switching between the values is automatic, the quantity value shall be presented as specified in 4.4.2 followed by the character SPACE and the upper-case letters AUTO.

Example: 230/110 V AUTO

Switches or other selecting devices on the equipment, used for setting in operation different value sets or single values, shall be clearly marked so that it is unambiguous which single values or value sets are set.