SLOVENSKI STANDARD
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Electrical equipment of industrial machines -- Part 3: Particular requirements for sewing machines, units and systems (IEC 60204-3-1:1988)

Electrical equipment of industrial machines -- Part 3: Particular requirements for sewing machines, units and systems

Elektrische Ausrüstungen von Industriemaschinen -- Teil 3: Besondere Anforderungen für Nähmaschinen, Näheinheiten und Nähanlagen

Equipement électrique de machines industrielles -- Partie 3: Règles particulières pour machines à coudre, unités et systèmes de couture

Ta slovenski standard je istoveten z: **EN 60204-3-1:1990**

ICS:

13.110	Varnost strojev	Safety of machinery
61.080	Ġivalni stroji in druga oprema za oblaḷ ilno industrijo	Sewing machines and other equipment for the clothing industry

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Descriptors: Equipment intended for industrial use, sewing machine, electrical equipment, electronical equipment, safety requirement, particular requirement

English version

Electrical equipment of industrial machines
Part 3 : Particular requirements for sewing machines, units and systems
(IEC 204-3-1 : 1988)

Equipement électrique des machines industrielles
Troisième partie: Règles particulières pour machines à coudre, unités et systèmes de couture
(CEI 204-3-1 : 1988)

Elektrische Ausrüstung von Industriemaschinen
Teil 3: Besondere Anforderungen für Nähmaschinen, Näheinheiten und Nähanlagen
(IEC 204-3-1 : 1988)

This European Standard was approved by CENELEC on 11 June 1990. 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

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Foreword

The CENELEC Questionnaire Procedure, performed for finding out whether or not the international standard IEC 204-3-1 : 1990 could be accepted without textual changes, has shown that no CENELEC common modifications were necessary for the acceptance as European Standard.

The Reference Document was submitted to the CENELEC members for formal vote and was approved and ratified by CENELEC on 11 June 1990.

The following dates were fixed:

Latest date of announcement of the EN at national level	(doa)	1990-12-15
Date of latest publication of a new harmonized standard	(dop)	1991-06-15
Date of withdrawal of conflicting national standards	(dow)	1991-06-15

For products which have complied with the relevant national standard before 1991-06-15, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1996-06-15.

Endorsement notice

The text of the International Standard IEC 204-3-1 : 1990 was approved by CENELEC as a European Standard without any modification.

Contents

ELECTRICAL EQUIPMENT OF INDUSTRIAL MACHINES

Part 3: Particular requirements for sewing machines, units and systems

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1. General

This clause of Part 1 is applicable except as follows:

1.1 *Replacement:*

This standard applies to both the electrical and the electronic equipment of sewing machines, sewing units and sewing systems, designed especially for professional use in the sewing industry.

This standard applies to equipment intended for industrial, commercial or laboratory, but not household, applications (for more details on the latter, see IEC Publication 335-2-28).

This standard applies to sewing units and systems which are installed in dry and well-kept clean locations, e.g. in the clothing industry, and which process dry sewing material. Where sewing units and systems are used in other than dry and well-kept clean locations, more stringent measures may be necessary, which have to be agreed.

2. Definitions

This clause of Part 1 is applicable except as follows:

Additional definitions:

2.101 *Sewing machine*

A machine designed to produce one or more stitch types (see ISO 4915) with one or more sewing threads. In producing a seam (see ISO 4916) the machine can perform one or more sewing functions.

Note.- Previously, the term "sewing machine head" was used instead of "sewing machine".

2.102 *Sewing machine drive*

An electric motor which is speed-controlled by electrical and/or mechanical means with or without a positioning device and with or without control of machine functions.

2.103 *Sewing unit*

Equipment consisting at least of a sewing machine, a table and stand/frame and a sewing machine drive. One or more devices incorporated in, and/or attached to, the sewing machine or sewing unit for sewing, cutting, feeding, etc., of the sewing material as well as the sewing machine itself are controlled by the operator.

2.104 *Sewing system*

Equipment, consisting at least of a sewing unit for which the sewing production process (all functions for performing automatic sewing, feeding, etc., of the sewing material) is automatically controlled by mechanical and/or electrical and/or electronic systems.

3. Warning signs, marking, item designation and technical documentation

This clause of Part 1 is applicable except as follows:

3.2.1 *Addition:*

It is not normally necessary to supply the software documentation which is used in a computerized system. Nevertheless it shall be supplied on request.

For units which are normally replaced as a whole (for instance printed circuit assemblies) detailed documentation is normally not required because these are user replaceable parts.

The instruction manual (operator manual) for sewing machines, sewing units and sewing systems shall contain references on how to handle, prepare, install, operate, control or maintain the machine in a correct and safe manner. In particular, the instructions shall draw attention to the need always to switch off the sewing unit or sewing system, e.g. by operating the switch or by disconnecting the plug from the supply network:

- whenever sewing implements (such as a sewing machine needle, presser foot, bobbin, or needle plate) have to be replaced;
- when threading a needle, looper, spreader, etc.;
- when the workplace is left unattended;
- for maintenance work.

4. General requirements

This clause of Part 1 is applicable except as follows:

4.3.1 *Addition:*

Each sewing unit or system shall have only one connection to the supply network.

When sewing units or systems are interconnected (not mechanically connected) each sewing unit or system may nevertheless have its own connection to the supply network.

5. Protective measures

This clause of Part 1 is applicable except as follows:

5.1.3 *Replacement:*

Protection against electric shock both in normal service and in case of a fault.

Circuits with live parts which may be touched in normal service (direct contact) shall be in accordance with Clause 411.1 "Protection by safety extra-low voltage (SELV)" of IEC Publication 364-4-41, and especially the last paragraph of Sub-clause 411.1.3.7.

The highest current which would flow in a connecting link between those live parts not protected against direct contact, and exposed conductive parts, shall not exceed 1 A if a.c. or 0.2 A if d.c., with the exception of electrical direct heated cutters or wires used in order to melt synthetic sewing threads or tapes.

5.4 *Addition:*

Sewing units and systems which are started by actuating control means with automatic reset (e.g. a pedal) and stopped by releasing it do not require a device preventing automatic re-start.

5.6.1 *Addition:*

Sewing units which are started by actuating control means with automatic reset (e.g. a pedal) do not require an emergency stopping device.

These sewing units shall have a normal device for switching "ON" and "OFF". Sewing systems with an automatic control shall have at least a main switch which need not be lockable. This switch shall fulfill the emergency stopping functions.

5.6.2 *Addition:*

If, owing to the fact that the total motor power does not exceed 2 kW and the rated current of the machine is not more than 16 A, option *d)* is used, i.e. a plug serving as the connection to the supply network, then the device for switching "ON" and "OFF" the sewing unit as well as the sewing system need not be lockable.

6. Control and signalling circuits

This clause of Part 1 is applicable except as follows:

6.1.1 *Addition:*

For control circuits of sewing units and systems the requirements of Item *b)* of Sub-clause 5.1.2.3 "Protection by use of functional extra-low voltage (FELV)", shall be fulfilled.

Note.- For safety isolating transformers, see IEC Publication 742.

6.2.2 *Addition:*

By use of the protection concepts described in Sub-clauses 5.1.3 and 6.1.1, it is likely that protection against unintentional operation caused by earth faults will not be achieved.

However, this is acceptable providing the dangers involved, such as those associated with the dangerous parts of the machine, are excluded by mechanical means.

6.2.6 *Addition:*

For sewing units and systems which are started by actuating control means with automatic reset (e.g. a pedal) and stopped by releasing it, the requirements of Sub-clause 6.2.6 do not apply. Neither do the requirements of Sub-clause 6.2.6. apply to sewing units and systems for automatic bar tacking, sewing of buttonholes, fastening of buttons, etc., which have an extremely short sewing cycle.

7. Mechanical design, arrangement of electrical devices, etc.

This clause of Part 1 is applicable except as follows:

7.1.2 *Modification:*

Replace the third paragraph by the following:

Where access to electrical devices is required for maintenance or adjustment, these devices shall be situated between 0.2 m and 2.0 m above the servicing level.

7.1.3 *Addition:*

In protective enclosures according to Sub-clause 5.1.1.1 "Protection by enclosures", the distance between the mechanical means providing the protection and the live parts they protect shall be not less than the values specified for the clearances and creepage distances in Table I, column L-L, of Appendix B of IEC Publication 158-1.

For printed circuit assemblies and all other electrical equipment and devices (such as switches, motors), pollution degree 2 of Table IV of IEC Publication 664A shall apply.

7.2.1 *Modification:*

Where in Sub-clause 7.2.1, a minimum degree of protection is specified, IP40 shall apply for sewing units and systems. However, if all the circuits used in and with the devices referred to, in connection with the IP degree, comply with Sub-clause 5.1.2.3, IP20 is permitted as a minimum degree.

8. Control devices

This clause of Part 1 is applicable except as follows:

Modification:

Where in Sub-clauses 8.1.2, 8.1.4, 8.1.5, 8.1.6 and 8.2.2 a minimum degree of protection is specified, IP40 shall apply to sewing units and systems. However, if all the circuits used in and with the devices referred to, in connection with the IP degree, comply with Sub-clause 5.1.2.3., IP20 is permitted as a minimum degree.

9. Cables and conductors

This clause of Part 1 is applicable as far as relevant.

10. Wiring

This clause of Part 1 is applicable except as follows:

Modification:

Where in Sub-clauses 10.1.6 and 10.4.1.3 a minimum degree of protection is specified, IP40 shall apply for sewing units and systems. However, if all the circuits used in and with the devices referred to, in connection with the IP degree, comply with Sub-clause 5.1.2.3, IP20 is permitted as a minimum degree.