



SLOVENSKI STANDARD
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Roboti za industrijska okolja – Varnostne zahteve – 1. del: Robot (ISO 10218-1:2006)

Robots for industrial environments - Safety requirements - Part 1: Robot (ISO 10218-1:2006)

Industrieroboter - Sicherheitsanforderungen - Teil 1: Roboter (ISO 10218-1:2006)
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Robots pour environnements industriels - Exigences de sécurité - Partie 1: Robot (ISO 10218-1:2006)

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English Version

Robots for industrial environments - Safety requirements - Part
1: Robot (ISO 10218-1:2006)

Robots pour environnements industriels - Exigences de
sécurité - Partie 1: Robot (ISO 10218-1:2006)

Roboter für Industrieumgebung - Sicherheit - Teil 1:
Roboter (ISO 10218-1:2006)

This European Standard was approved by CEN on 19 May 2006.

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.

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 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document (EN ISO 10218-1:2006) has been prepared by Technical Committee ISO/TC 184 "Industrial automation systems and integration" in collaboration with Technical Committee CEN/TC 310 "Advanced Manufacturing Technologies", the secretariat of which is held by BSI.

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 December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

This document supersedes EN 775:1992.

This document 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 document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Endorsement notice

The text of ISO 10218-1:2006 has been approved by CEN as EN ISO 10218-1:2006 without any modifications.

ANNEX ZA

(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive for Machinery 98/37/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive for Machinery 98/37/EC, amended by Directive 98/79/EC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

WARNING: Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

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**Robots for industrial environments —
Safety requirements —**

**Part 1:
Robot**

*Robots pour environnements industriels — Exigences de sécurité —
Partie 1: Robot*
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10218-1 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 2, *Robots for industrial environments*.

This first edition cancels and replaces ISO 10218:1992, which has been technically revised.

This wholly revised International Standard updates the document to bring it better in line with ISO 12100 and the requirements to identify and respond in a type C standard to unique hazards, in this standard for industrial robots. New technical requirements include, but are not limited to, safety-related control system performance, robot stopping function, enabling device, programme verification, wireless pendant criteria, control of simultaneous motion, collaborating robot criteria, and updated design for safety requirements.

ISO 10218 consists of the following parts, under the general title *Robots for industrial environments — Safety requirements*:

— *Part 1: Robot*

The following parts are under preparation:

— *Part 2: Robot system and integration*

Introduction

ISO 10218 has been created in recognition of the particular hazards that are presented by industrial robots and industrial robot systems.

This document is a type C standard as stated in ISO 12100-1.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards for machines that have been designed and built according to the provisions of this type C standard.

Hazards associated with robots are well recognized, but the sources of the hazards are frequently unique to a particular robot system. The number and type(s) of hazard(s) are directly related to the nature of the automation process and the complexity of the installation. The risks associated with these hazards vary with the type of robot used and its purpose and the way in which it is installed, programmed, operated and maintained.

NOTE 1 Not all of the hazards identified by ISO 10218 apply to every robot and nor will the level of risk associated with a given hazardous situation be the same from robot to robot. Consequently the safety requirements and/or protective measures may vary from what is specified in ISO 10218. A risk assessment may be conducted to determine what the protective measures should be.

In recognition of the variable nature of hazards with different uses of industrial robots, ISO 10218 is divided into two parts; Part 1 provides guidance for the assurance of safety in design and construction of the robot. Since safety in the application of industrial robots is influenced by the design and application of the particular robot system integration, Part 2 will provide guidelines for the safeguarding of personnel during robot integration, installation, functional testing, programming, operation, maintenance and repair.

NOTE 2 While noise is generally considered a hazard associated with the industrial environment, the robot as defined in 3.18 cannot be considered the final machine, rather the robot system as defined in 3.20 is the machine for noise consideration. Therefore the hazard due to noise will be dealt with in ISO 10218-2.

ISO 10218 is not applicable to robots which were manufactured prior to its publication date.

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