



# SLOVENSKI STANDARD

## SIST EN 775:1998

01-junij-1998

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### Upravljanje industrijskih robotov - Varnost (ISO 10218:1992, spremenjen)

Manipulating industrial robots - Safety (ISO 10218:1992, modified)

Industrieroboter - Sicherheit (ISO 10218:1992, modifiziert)

Robots manipulateurs industriels - Sécurité (ISO 10218:1992, modifiée)

Ta slovenski standard je istoveten z: EN 775:1992

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#### **ICS:**

25.040.30	Industrijski roboti. Manipulatorji	Industrial robots. Manipulators
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**en**

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EUROPEAN STANDARD

EN 775:1992

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 1992

UDC 621.865.8:614.8:62-78

Descriptors: Mechanics, manipulators, industrial robots, accident prevention, safety, design, equipment specifications, control devices, safety devices, programming : computers, performance tests, maintenance, installation, utilization, repairs

English version

**Manipulating industrial robots - Safety (ISO  
10218:1992 modified)**

Robots manipulateurs industriels - Sécurité  
(ISO 10218:1992 modifiée)

Industrieroboter - Sicherheit (ISO 10218:1992  
modifiziert)

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This European Standard was approved by CEN on 1992-10-14. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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

This European Standard has been prepared under a mandate given to CEN by the Commission of the European Communities and the European Free Trade Association, and supports essential requirements of EC Directive(s).

In 1991, ISO/DIS 10218 was submitted to the CEN Primary Questionnaire procedure.

Following the result of this procedure, and the result of CEN/BTS2 AH6 investigation of the conformity between the Essential health and safety requirements in Annex I of the Machinery Directive (89/392/EEC) and the safety requirements in ISO 10218, CEN BTS2 (Reslution 8/1992) agreed to submit ISO 10218:1992, amended with common modifications, to formal vote.

The document was accepted and in accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 April 1993, and conflicting national standards shall be withdrawn at the latest by April 1993.

## Endorsement notice

The text of the International Standard ISO 10218:1992 was approved by CEN as a European Standard with agreed common modifications as given below.

- In addition to the requirements given in ISO 10218, EN 292-1 and EN 292-2 apply to the safety of manipulating industrial robots.
- When definitions given in ISO 10218 differ from EN 292-1, the definitions in EN 292-1 shall be applied. The following terms have different definitions:

Term	Sub-clause for definition in:	
	ISO 10218	EN 292-1
Enabling device	3.2.3	3.23.2
Guard	3.2.4	3.22
Hazard	3.2.5	3.5
Hold-to-run control	3.2.7	3.23.3
Interlock	3.2.8	3.23.1
Presence sensing device	3.2.15	3.23.5
Risk	3.2.19	3.7
Safeguarding	3.2.24	3.19

- The strategy for selecting safety measures in EN 292-1 (5) shall be superimposed upon the requirements of 4.2.3 of ISO 10218.
- The concept of lockout/tagout as defined in ISO 10218 (3.2.10) shall not be used. The requirements of EN 292-2 (6.2.2) for isolation and energy dissipation shall apply in 5.4 of ISO 10218 instead of the requirement for isolation of power source by means of lockout/tagout.
- The manufacturer(s) shall design, and shall provide instructions for, the robot and robot system so that it can be used safely (as described in clauses 8 and 9).

## Introduction to the European standard

ISO 10218 was not written within all the considerations of the Machinery Directive and the European published/draft standards of type A and B. Therefore, common modifications have been introduced in this European Standard (see endorsement notice).

It should be noted that this standard covers requirements for the basic robot and robot system. When a robot is used as part of a complex installation it is usually provided with some form of tool or device and interacts with other machinery. This standard does not cover the safety of the tools or devices or the risks arising from the use of the robot in such installations.

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# INTERNATIONAL STANDARD

**ISO**  
**10218**

First edition  
1992-01-15

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## **Manipulating industrial robots — Safety**

*Robots manipulateurs industriels — Sécurité*

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Reference number  
ISO 10218:1992(E)

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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.

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.

International Standard ISO 10218 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 2, *Robots for manufacturing environment*.

Annex A of this International Standard is for information only.

## Introduction

This International Standard has been created in recognition of the particular hazards which exist in manufacturing automation systems incorporating manipulating industrial robots.

Hazards are well recognized but the sources of the hazards are frequently unique to a particular robot system. The number and types of hazards 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 application and the way in which it is installed, programmed, operated, and maintained.

In recognition of the variable nature of hazards with application of industrial robots, this International Standard provides guidance for the assurance of safety in design and construction of robots. Since safety in the application of industrial robots is influenced by the design and application of the particular robot system, a supplementary, though equally important, purpose is to provide guidelines for the safeguarding of personnel during installation, functional testing, programming, operation, maintenance, and repair of robots and robot systems.

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