

Implementation of
EN ISO 8373:1996

Manipulating industrial robots — Vocabulary

The European Standard EN ISO 8373:1996 has the status of a
British Standard

ICS 01.040.25; 25.040.30

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW



Document Sharing Hub

Committees responsible for this British Standard

This British Standard, having been prepared under the direction of the AMT Assembly, was published under the authority of the Standards Board and comes into effect on 15 November 1996

© BSI 12-1998

The following BSI references relate to the work on this standard:
Committee reference AMT/-
Draft for comment
Announcement in BSI News, July 1996

ISBN 0 580 26406 8

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
Foreword	2
Text of EN ISO 8373	1

National foreword

This British Standard has been prepared under the direction of the BSI Standards Board and is the English language version of EN ISO 8373:1996 *Manipulating industrial robots — Vocabulary* published by the European Committee for Standardization (CEN). It supersedes BS 7228:PT1:1989, which is withdrawn.

It is identical with ISO 8373:1994, including Technical Corrigendum 1:1996, published by the International Organization for Standardization (ISO).

This British Standard has been produced to fulfil BSI's obligation to publish all approved European Standards but, because of the absence of interest in the UK in the subject concerned, there has been no UK participation in the preparation of EN ISO 8373:1996.

Any queries relating to the EN should be directed to BSI quoting the reference AMT/-.

NOTE International and European Standards, as well as overseas standards, are available from Customer Services, BSI, 389 Chiswick High Road, London W4 4AL.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN ISO title page, page 2, the ISO title page, pages ii to iv, pages 1 to 22 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

English version

Manipulating industrial robots — Vocabulary

(ISO 8373:1994)

Robots manipulateurs industriels —
Vocabulaire (ISO 8373:1994)

Industrieroboter — Wörterbuch
(ISO 8373:1994)

This European Standard was approved by CEN on 1996-05-01. 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, 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

The text of the International Standard from Technical Committee ISO/TC 184 Industrial automation systems and integration of the International Organization for Standardization (ISO) has been taken over as an European Standard by 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 November 1996, and conflicting national standards shall be withdrawn at the latest by November 1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of 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 the United Kingdom.

INTERNATIONAL
STANDARD

ISO
8373

NORME
INTERNATIONALE

First edition
Première édition
1994-12-01

Manipulating industrial robots — Vocabulary

Robots manipulateurs industriels — Vocabulaire



Reference number
Numéro de référence
ISO 8373:1994 (E)



Documents

Document Sharing Hub

Contents

	Page
Foreword	iii
1 Scope	1
2 General terms	1
3 Mechanical structure	4
4 Geometry and kinematics	7
5 Programming and control	10
6 Performance	13
Annex A (informative) Examples of types of mechanical structure	17
Figure A.1 — Rectangular or cartesian robot: gantry robot	17
Figure A.2 — Cylindrical robot	17
Figure A.3 — Polar (spherical) robot	17
Figure A.4 — Pendular robot	18
Figure A.5 — Anthropomorphic (articulated) robot	18
Alphabetical index	19

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 8373 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 2, *Robots for manufacturing environment*.

This first edition of ISO 8373 cancels and replaces ISO/TR 8373:1988, of which it constitutes a technical revision.

Annex A of this International Standard is for information only.

Avant-propos

L'ISO (Organisation internationale de normalisation) est une fédération mondiale d'organismes nationaux de normalisation (comités membres de l'ISO).

L'élaboration des Normes internationales est en général confiée aux comités techniques de l'ISO. Chaque comité membre intéressé par une étude a le droit de faire partie du comité technique créé à cet effet. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'ISO participent également aux travaux. L'ISO collabore étroitement avec la Commission électrotechnique internationale (CEI) en ce qui concerne la normalisation électrotechnique.

Les projets de Normes internationales adoptés par les comités techniques sont soumis aux comités membres pour vote. Leur publication comme Normes internationales requiert l'approbation de 75 % au moins des comités membres votants.

La Norme internationale ISO 8373 a été élaborée par le comité technique ISO/TC 184, *Systèmes d'automatisation industrielle et intégration*, souscomité SC 2, *Robots pour environnement de fabrication*.

Cette première édition de l'ISO 8373 annule et remplace l'ISO/TR 8373:1988, dont elle constitue une révision technique.

L'annexe A de la présente Norme internationale est donnée uniquement à titre d'information.

Introduction

This vocabulary deals with manipulating industrial robots (as defined in **2.6**) operating in a manufacturing environment. It is not a dictionary but rather a list of terms most commonly used. These terms are briefly defined or explained. They are grouped into clauses by main topics of robotics.

ISO 8373 is one of a series of International Standards dealing with manipulating industrial robots. They include:

ISO 9283:1990, *Manipulating industrial robots — Performance criteria and related test methods*,

ISO 9409-1:1988, *Manipulating industrial robots — Mechanical interfaces — Part 1: Circular (form A)*,

ISO 9787:1990, *Manipulating industrial robots — Coordinate systems and motions*,

ISO 9946:1991, *Manipulating industrial robots — Presentation of characteristics*,

ISO 10218:1992, *Manipulating industrial robots — Safety*, and

ISO/IEC 9506-3:1991, *Manufacturing message specification — Part 3: Robot specific message system*.

1 Scope

This International Standard defines terms relevant to manipulating industrial robots operated in a manufacturing environment.

2 General terms

2.1

manipulator

machine, the mechanism of which usually consists of a series of segments jointed or sliding relative to one another, for the purpose of grasping and/or moving objects (pieces or tools) usually in several **degrees of freedom (4.4)**

NOTE It may be controlled by an **operator (2.16)**, a programmable electronic controller, or any logic system (for example cam device, wired).

Introduction

Le présent vocabulaire traite des robots manipulateurs industriels (tels que définis en **2.6**) mis en œuvre dans un environnement manufacturier. Ce n'est pas un dictionnaire mais plutôt une liste des termes les plus communément utilisés. Ces termes sont brièvement définis ou expliqués. Ils sont présentés dans différents articles traitant des principaux thèmes de la robotique.

L'ISO 8373 fait partie d'une série de Normes internationales traitant des robots manipulateurs industriels. Celles-ci comprennent

ISO 9283:1990, *Robots manipulateurs industriels — Critères de performance et méthodes d'essai correspondantes*,

ISO 9409-1:1988, *Robots manipulateurs industriels — Interfaces mécaniques — Partie 1: Interfaces circulaires (forme A)*,

ISO 9787:1990, *Robots manipulateurs industriels — Systèmes de coordonnées et mouvements*,

ISO 9946:1991, *Robots manipulateurs industriels — Présentation des caractéristiques*,

ISO 10218:1992, *Robots manipulateurs industriels — Sécurité*, et

ISO/CEI 9506-3:1991, *Spécifications de messagerie industrielle — Partie 3: Système de messagerie spécifique aux robots*.

1 Domaine d'application

La présente Norme internationale définit les termes relatifs aux robots manipulateurs industriels mis en œuvre dans un environnement manufacturier.

2 Termes généraux

2.1

manipulateur

machine dont le mécanisme est généralement composé d'une série de segments, articulés ou coulissants l'un par rapport à l'autre, ayant pour but de saisir et/ou de déplacer des objets (pièces ou outils) généralement suivant plusieurs **degrés de liberté (4.4)**

NOTE Elle peut être commandée par un **opérateur (2.16)**, un automate programmable ou tout système logique (par exemple système à cames ou logique câblée).