INTERNATIONAL STANDARD

ISO

9787

Manipulating industrial robots — Coordinate systems and motion nomenclatures

Robots manipulateurs industriels — Systèmes de coordonnées et nomenclatures de mouvements

Contents

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 3.

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 9787 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 2, *Robots for manufacturing environment*.

This second edition cancels and replaces the first edition (ISO 9787:1990), of which it constitutes a technical revision.

Annex A of this International Standard is for information only.

Introduction

ISO 9787 is part of a series of International Standards dealing with manipulating industrial robots. Other International Standards cover such topics as safety, general characteristics, performance criteria and related test methods, terminology, and mechanical interfaces. It is noted that these standards are interrelated and are also related to other International Standards.

Annex A (informative) of this International Standard provides examples of application for different mechanical structures.

Manipulating industrial robots — Coordinate systems and motion nomenclatures

1 Scope

This International Standard defines and specifies robot coordinate systems. It also provides a nomenclature including notation for the basic robot motions. It is intended to aid in robot alignment, testing, and programming.

This International Standard applies to all manipulating industrial robots as defined in ISO 8373.

In cases where there is no risk of confusion, nomenclatures or subscripts other than those specified in this International Standard may be used.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 8373:1994, *Manipulating industrial robots — Vocabulary.*

ISO 9283:1998, *Manipulating industrial robots — Performance criteria and related test methods.*

ISO 9946:1991[1]), *Manipulating industrial robots — Presentation of characteristics*.

ISO 14539:—[2]), *Manipulating industrial robots — Object handling with grasp-type clippers — Vocabulary and presentation of characteristics.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 8373 apply.

4 Defined coordinate systems and rotations

All coordinate systems described in this International Standard are defined by the orthogonal right-hand rule as shown in Figure 1.

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1) Currently under revision.

2) To be published.