INTERNATIONAL STANDARD

ISO 18582-1

First edition
2016-07-01

Fluid power — Specification of reference dictionary —

Part 1: General overview on organization and structure

Transmissions hydrauliques et pneumatiques — Spécification d'un dictionnaire de référence —

Partie 1: Aperçu général sur l'organisation et la structure

Reference number
ISO 18582-1:2016(E)

© ISO 2016



COPYRIGHT PROTECTED DOCUMENT

© ISO 2016, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword ..... **iv**

Introduction ..... **v**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Principles of specification **1**
4.1 Set of attributes for description of a property 1
4.2 Set of attributes for description of a class 2
4.3 Basic structure of reference dictionary 3
4.3.1 General 3
4.3.2 Basic structure of the hierarchic order of the definition classes 3
4.3.3 Allocation of properties for basic quantities within the hierarchic order of definition classes 3
4.3.4 Basic structure of the hierarchic order of the application classes 4

5 Basic structure of the reference dictionary for fluid power **4**
5.1 General 4
5.2 Definition classes 5
5.3 Properties 5
5.4 Application classes 5

Annex A (informative) **Basic definitions and underlying principles from ISO Guide 77-2** **7**

Annex B (informative) **Example for the classification of a cylinder to show the relation between application classes and definition classes** **10**

Bibliography **11**

© ISO 2016 – All rights reserved

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 131, *Fluid power systems*, Subcommittee SC 1, *Symbols, terminology and classifications*.

© ISO 2016 – All rights reserved

Introduction

Modern business operations — known collectively as e-Business and including e-Marketplaces, e-Product catalogues and Lifecycle Management — are characterized by the following.

a) **Complex structures of the product lifecycle**

In each step of the product lifecycle (ranging from the first idea through development, manufacture, distribution, use and disposal of the product), information from another step or steps is required; moreover, new additional information is generated. Numerous parties and processes are involved in or form part of the product lifecycle. Hence, information needs to be transferred to or exchanged between those parties and processes, across company internal interfaces and across interfaces to external business partners (such as other manufacturers, suppliers and customers).

To ensure successful handling of these business operations, it is essential that the communication between parties and processes involved be independent from individual agreements on data and that the data, once created, be readily usable by other parties and in other processes without a need for conversion mechanisms.

b) **Availability of new electronic media**

To take advantage of the economic potential of these new media, product information provided by various suppliers needs to be clear and unambiguous (inter-comparable) for a potential buyer.

The requirement arising from both of these aspects is that the description of products and processes are:

— uniformly consistent and unambiguous;

— neutral (neither company-specific nor software-specific nor product-specific);

— available in electronic form for ready use without conversion.

This is generally true for any business area.

For the business area of fluid power systems, the situation that led to the decision to prepare ISO 18582 were:

a) available ISO Standards, such as the ISO 5598, provide some verbal definitions of properties, but do not provide sufficient detail of information required for an unambiguous data exchange;

b) programs (i.e. software, either commercially available or custom-made) used in different areas of a single company or amongst business partners (e.g. CAD-Systems, ERP-Systems, Office Tools) use different interfaces and different internal data representation (e.g. measurement unit, reference value); any attempt to exchange data between them requires multi-directional conversion mechanisms or is associated with a risk of introducing errors or simply is impossible.

On the basis of standardized and electronically available properties, data exchange between, and immediate use of transmitted data in, the software used in various departments or branches of one company or at various business partners can be implemented. Use of standardized properties increases process comprehensiveness at companies and permits closer IT-based links between customers and suppliers in the areas of development and supply. This, in turn, leads to cost savings by way of cuts in the number of required parts and shorter product-development time frames.

Though limited to the field of fluid power, the reference dictionary needs to include all relevant properties required for the full description of fluid power products and processes. Therefore, in addition to the properties that are peculiar to the field of fluid power systems, the reference dictionary also includes, be it by specification or be it by reference from other dictionaries, properties being of universal nature rather than specific to “fluid power systems”, e.g. quantities and units or fundamental physical entities, and the required properties from other technical fields, e.g. mechanical components such as mountings for fluid power elements, if they are not defined elsewhere (i.e. in ISO 23584) and so cannot be referenced.

© ISO 2016 – All rights reserved

In the interests of utmost effectiveness, the reference dictionary and its entire content should be made available in electronic form, ready for import into and use in a user's application system.

© ISO 2016 – All rights reserved

Fluid power — Specification of reference dictionary —

Part 1:
General overview on organization and structure

1 Scope

This part of ISO 18582 provides the basis for the preparation of a reference dictionary of standardized product properties for the area of fluid power, and for the provision of this reference dictionary and its entire contents in electronic form.

This part of ISO 18582, based on ISO 13584-42 and ISO/IEC Guide 77-2, specifies a reference dictionary of standardized product properties for the area of fluid power.

NOTE The properties are determined on the basis of standardized attributes. To ensure optimum unambiguity, the standardized properties are classified into definition classes, forming a so-called standardized "reference hierarchy".

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 80000 (all parts), *Quantities and units*

ISO 13584-42, *Industrial automation systems and integration — Parts library — Part 42: Description methodology: Methodology for structuring parts families*

ISO/IEC Guide 77-2, *Guide for specification of product properties and classes — Part 2: Technical principles and guidance*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13584-42 and ISO/IEC Guide 77-2 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

NOTE Some basic definitions and principles given in ISO Guide 77-2 are provided in Annex A for information.

4 Principles of specification

4.1 Set of attributes for description of a property

Properties shall be described by attributes as given in Table 1.

NOTE The table contents are in accordance with the data model specified in ISO 13584-42, expanded where required as per ISO/IEC Guide 77-2.

© ISO 2016 – All rights reserved