International Standard 3511/3

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Process measurement control functions and instrumentation — Symbolic representation — Part 3: Detailed symbols for instrument interconnection diagrams

Fonctions et instrumentations pour la mesure et la régulation des processus industriels — Représentation symbolique — Partie 3: Symboles détaillés pour les diagrammes d'interconnexion d'instruments

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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 developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3511/3 was developed by Technical Committee ISO/TC 10, *Technical drawings*, and was circulated to the member bodies in July 1983.

It has been approved by the member bodies of the following countries:

Australia	India	Sweden
Austria	Netherlands	Switzerland
Belgium	New Zealand	United Kingdom
Finland	Poland	USA
Germany, F.R	Spain	USSR

The member body of the following country expressed disapproval of the document on technical grounds:

Italy

This part of ISO 3511 was developed by sub-committee 3, *Graphical symbols for instrumentation*. The symbols are intended to be used to represent functions and, in special cases, equipment on technical drawings such as schematic diagrams or process flow-diagrams. However, this field of engineering is closely related to electrical instrumentation dealt with by IEC/TC 65 or in part by IEC/SC 3A. For this reason there has been close coordination in a joint working group and the results were accepted by members of ISO and IEC.

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Process measurement control functions and instrumentation — Symbolic representation — Part 3: Detailed symbols for instrument interconnection diagrams

0 Introduction

This International Standard has been devised to provide a universal means of communication among the various interests involved in the design, manufacture, installation and operation of measurement and control equipment used in the process industries.

Requirements within the industries vary considerably; in recognition of this, this International Standard is presented in four parts as follows:

Part 1: Basic requirements (directed towards the needs of those employing comparatively simple measurements and control means).

Part 2: Extension of basic requirements.

Part 3: Detailed symbols for instrument interconnection diagrams.

Part 4: Basic symbols for process computer, interface, and shared display/control functions. [1)]

The four parts together are intended to:

a) meet the requirements of those who, possibly employing more sophisticated measurement and control means, may wish to depict such aspects as the measurement techniques embodied in a particular instrument, or the means — hydraulic, pneumatic, electrical, mechanical — used for its actuation;

b) provide standard symbolic representation for process measurement control functions and instrumentation. These symbols are not intended to replace graphic symbols for electrical equipment as contained in IEC Publication 117, *Recommended graphical symbols; graphical symbols.*

1 Scope and field of application

This part of ISO 3511 specifies instrument symbols for use on interconnection diagrams used for the design, installation, and maintenance of process measurement and control systems.

These detailed symbols are not normally intended for drawings that use the functional symbols given in ISO 3511/1 and ISO 3511/2. However, the symbols specified in this part of ISO 3511 show, by detailing the components, the external connections between units of equipment.

Information on the internal connections in units is not normally included, but references to the appropriate circuit or wiring diagrams may be provided.

When an instrument is composed of more than one functional part, the different symbols may be combined, for example, recorder controller.

The dimensions of the symbols are unspecified, provided the ratio of the side lengths is maintained according to this part of ISO 3511. [2)]

If not otherwise stated, contact symbols should be shown open.

The diagrams may employ single line or multi-line representation and may be combined with, or replaced by tables, providing clarity is maintained.

For further assistance, see IEC Publication 113 Part 5, *Preparation of interconnection diagrams and tables.*

2 Definitions

The following definitions are used solely for the purposes of this part of ISO 3511, to assist in the application and understanding of the symbol system.

1) At present at the stage of draft.

2) This rule has been adopted provisionally until such time as technical committee ISO/TC 10 prepares an International Standard for the representation of graphical symbols used on technical drawings.