International Standard ISO 3511/4

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Industrial process measurement control functions and instrumentation — Symbolic representation — Part 4: Basic symbols for process computer, interface, and shared display/control functions

Fonctions de régulation, de mesure et d'automatisme des processus industriels — Représentation symbolique — Partie 4: Symboles de base pour la représentation des fonctions calculateur

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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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3511/4 was prepared by Technical Committee ISO/TC 10, *Technical drawings*.

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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0 Introduction

This International Standard has been devised to provide a universal means of communication between 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 measurement 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 functions, and shared display/control functions.

These 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 graphical symbols for electrical equipment as contained in IEC Publication 617, *Graphical symbols for diagrams*.

1 Scope and field of application

The symbols established in this part of ISO 3511 have been developed to be used in conjunction with the symbols given in ISO 3511/1 and ISO 3511/2 and shall be considered as supplementary.

They are intended to provide a means of illustrating process computer and/or shared display/control functions in the field of process measurement and control and may be used with the symbols of ISO 3511/1 and ISO 3511/2. They will enable users to show and identify in simple form the functions of instruments, the process computer, and shared display/control functions, or any combination of these.

It is permissible to use the basic symbol for computer-based functions (see 3.1) throughout for any software-based digital system. This is not intended to preclude the use of the basic symbol for shared display/control functions (see 3.2) if the user considers this to be appropriate.

The symbols are intentionally limited to identification on process flow diagrams, piping and instrument diagrams, etc. and do not provide means of illustrating specific instruments or parts thereof.

The letter code for function identification shall be taken from table 1 of ISO 3511/1 and ISO 3511/2.

The application methods are shown in the examples.

2 Definitions

For the purposes of this part of ISO 3511, the following definitions and the definitions given in ISO 3511/1 and ISO 3511/2 apply.

2.1 programmable: Term indicating the capability of the system to accept instructions in computer language given by the user for performing control strategies or complex functions.

2.2 configurable: Term indicating the capability of the system to allow the user to select, from pre-programmed functions (modular software units), those which are necessary to accomplish a control strategy or other complex functions, without the use of computer language.

2.3 process computer: Programmable device which operates in real time on process data, on-line (primarily sensor-based), to perform user specifiable supervision and/or control functions.