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# INTERNATIONAL STANDARD



# 3511 / I

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## **Process measurement control functions and instrumentation — Symbolic representation — Part I : Basic requirements**

*Fonctions et instrumentation pour la mesure et la régulation des processus industriels — Représentation  
symbolique —  
Partie I : Principes de base*

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## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (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 set up 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 3511/1 was developed by Technical Committee ISO/TC 10, *Technical drawings*, and was circulated to the member bodies in October 1974.

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

Australia	Hungary	Romania
Austria	India	South Africa Rep. of
Belgium	Ireland	Spain
Bulgaria	Mexico	Sweden
Chile	Netherlands	Switzerland
Denmark	New Zealand	Turkey
France	Norway	United Kingdom
Germany	Poland	Yugoslavia

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Canada  
Finland  
Italy  
U.S.A.

# Process measurement control functions and instrumentation — Symbolic representation — Part I : Basic requirements

## 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, and in recognition of this, this International Standard is presented in three parts as follows :

Part I : Basic requirements (directed towards the needs of those whose prime interest is in basic measurement and control means).

Part II : Extension of basic requirements.

Part III : Detailed symbols.

The three parts together are intended

- a) to 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) to 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.

## 1 SCOPE AND FIELD OF APPLICATION

Part I of this International Standard establishes a symbols system for use in depicting the basic functions of measurement and control equipment in relation to the plant with which it is associated. The system has been intentionally limited to the identification of instrument functions and does not provide means of illustrating specific instruments.

## 2 DEFINITIONS

The following definitions are used solely for the purpose of this International Standard to assist in the application and understanding of the symbol system.

**2.1 point of measurement :** The point in a process at which a measurement is or may be made.

**2.2 instrument :** A device or combination of devices used directly or indirectly to measure, display and/or control a variable. This term does not apply to internal components of the instruments, for example resistor or receiver bellows.

**2.3 panel-mounted instrument :** An instrument that is mounted in a group normally accessible to the operator.

**2.4 locally mounted instrument :** An instrument that is not panel mounted.

**2.5 correcting unit :** The unit comprising those elements (actuating and correcting) which adjust the correcting conditions, in response to a signal from the controller.

**2.6 actuating element :** That part of the correcting unit which adjusts the correcting element, for example a response to a signal from the controller.

**2.7 correcting element :** That part of the correcting unit which directly adjusts the value of the correcting conditions.

**2.8 alarm :** A device which is intended to attract attention to a defined abnormal condition by means of a discrete audible and/or visible signal, but which does not itself institute corrective action.

**2.9 set value :** The value of the controlled condition to which the controller is set.