

# INTERNATIONAL STANDARD

# IEC 61003-1

Second edition  
2004-01

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## Industrial-process control systems – Instruments with analogue inputs and two- or multi-state outputs –

### Part 1: Methods of evaluating performance

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL-PROCESS CONTROL SYSTEMS –  
INSTRUMENTS WITH ANALOGUE INPUTS AND  
TWO- OR MULTI-STATE OUTPUTS –****Part 1: Methods of evaluating performance**

## FOREWORD

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International Standard IEC 61003-1 has been prepared by subcommittee 65B: Devices, of IEC technical committee 65: Industrial-process measurement and control.

This second edition cancels and replaces the first edition issued in 1991 and constitutes a technical revision. It takes into account the common standardized basis specified in the IEC 61298 series. Any test method or procedure specified and described herein is referred to the corresponding Clause of the IEC 61298 series. Any particular method or procedure not covered by the IEC 61298 series is developed and specified in this standard in accordance with the criteria stated in the IEC 61298 series, as far as they are applicable.

The text of this standard is based on the following documents:

FDIS	Report on voting
65B/516/FDIS	65B/524/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until 2012. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

## INTRODUCTION

The methods of evaluation specified in this part of IEC 61003 are intended for use by manufacturers to determine the performance of their products and by users, or independent testing establishments, to verify the manufacturer's performance specifications.

The test conditions in this standard, for example the range of ambient temperatures and power supply, represent those, which commonly arise in use. Consequently, the values specified herein shall be used where the manufacturer specifies no other values.

The tests specified in this standard are not necessarily sufficient for instruments specifically designed for unusually arduous duties. Conversely, a restricted series of tests may be suitable for instruments designed to perform within a more limited range of conditions.

It will be appreciated that the closest communication should be maintained between the evaluating body and the manufacturer. Note shall be taken of the manufacturer's specifications for the instrument, when the test programme is being decided, and the manufacturer should be invited to comment on both the test programme and the results. His comments on the results should be included in any report produced by the testing organisation.

# INDUSTRIAL-PROCESS CONTROL SYSTEMS – INSTRUMENTS WITH ANALOGUE INPUTS AND TWO- OR MULTI-STATE OUTPUTS –

## Part 1: Methods of evaluating performance

### 1 Scope

This part of IEC 61003 is applicable to pneumatic and electric industrial-process instruments using measured values that are continuous signals in accordance with IEC 60382, or IEC 60381-1. The other input value (i.e. the set point value) may be either a mechanical (position, force, etc.) or a standard signal.

It should be noted that tests specified herein may be applied to instruments which have other continuous measured values, provided that due allowance is made for such differences.

These instruments may be used as controllers or as switches for alarm and other similar purposes.

Instruments with feedback are not covered by this standard.

Electronic security issues may impact only a few products covered by this document. Consequently this document does not address such security issues.

This standard is intended to specify uniform testing methods for performance evaluation of industrial-process instruments with analogue measured values and two- or multi-state outputs.

Considerations other than the performances are listed in Clause 10.

### 2 Normative references

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

IEC 60050-351:1998, *International Electrotechnical Vocabulary (IEV) – Part 351 Automatic control*

IEC 60381-1:1982, *Analogue signals for process control systems – Part 1: Direct current signals*

IEC 60382:1991, *Analogue pneumatic signals for process control systems*

IEC 61010-1:2001, *Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements*

IEC 61298-1:1995, *Process measurement and control devices – General methods and procedures for evaluating performance – Part 1: General considerations*

IEC 61298-2:1995, *Process measurement and control devices – General methods and procedures for evaluating performance – Part 2: Tests under reference conditions*

IEC 61298-3:1998, *Process measurement and control devices – General methods and procedures for evaluating performance – Part 3: Tests for the effects of influence quantities*

IEC 61298-4:1995, *Process measurement and control devices – General methods and procedures for evaluating performance – Part 4: Evaluation report content*

IEC 61326:2002, *Electrical equipment for measurement, control and laboratory use – EMC requirements*