



# SLOVENSKI STANDARD

## SIST EN 61298-1:1998

01-november-1998

---

### Process measurement and control devices - General methods and procedures for evaluating performance - Part 1: General considerations (IEC 61298-1:1995)

Process measurement and control devices - General methods and procedures for evaluating performance -- Part 1: General considerations

Prozeßmeß-, -steuer- und -regelgeräte - Allgemeine Methoden und Verfahren für die Bewertung des Betriebsverhaltens - Teil 1: Allgemeine Betrachtungen

Dispositifs de mesure et de commande de processus - Méthodes et procédures générales d'évaluation des performances -- Partie 1: Généralités

<https://standards.iteh.ai/catalog/standards/sist/85810b57-da6a-429f-a3d4-68202ca8bcf6/sist-en-61298-1-1998>

Ta slovenski standard je istoveten z: EN 61298-1:1995

---

#### **ICS:**

25.040.40	Merjenje in krmiljenje industrijskih postopkov	Industrial process measurement and control
-----------	--	--

**SIST EN 61298-1:1998**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 61298-1:1998

<https://standards.iteh.ai/catalog/standards/sist/85810b57-da6a-429f-a3d4-68202ca8bcf6/sist-en-61298-1-1998>

ICS 35.240.40

Descriptors: Process measurement and control, measurement and control devices, performance evaluation, methods, general procedures, general

English version

**Process measurement and control devices**  
**General methods and procedures for evaluating performance**  
**Part 1: General considerations**  
(IEC 1298-1:1995)

Dispositifs de mesure et de commande  
de processus  
Méthodes et procédures générales  
d'évaluation des performances  
Partie 1: Généralités  
(CEI 1298-1:1995)

Prozeßmeß-, -steuer- und -regelgeräte  
Allgemeine Methoden und Verfahren für  
die Bewertung des Betriebsverhaltens  
Teil 1: Allgemeine Betrachtungen  
(IEC 1298-1:1995)

This European Standard was approved by CENELEC on 1995-09-20. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

## Foreword

The text of document 65B/228/DIS, future edition 1 of IEC 1298-1, prepared by SC 65B, Devices, of IEC TC 65, Industrial-process measurement and control, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61298-1 on 1995-09-20.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-07-01

Annexes designated "normative" are part of the body of the standard.  
Annexes designated "informative" are given for information only.  
In this standard, annex ZA is normative and annex A is informative.  
Annex ZA has been added by CENELEC.

---

## Endorsement notice

The text of the International Standard IEC 1298-1:1995 was approved by CENELEC as a European Standard without any modification.

In the official version, for annex A, Bibliography, the following notes have to be added for the standards indicated:

- |             |  |
|-------------|--|
| IEC 68-2-1  | NOTE: Harmonized as EN 60068-2-1:1993 (not modified).  |
| IEC 68-2-2  | NOTE: Harmonized, together with its supplement 1:1976, as EN 60068-2-2:1993 (not modified).  |
| IEC 68-2-6  | NOTE: Harmonized, together with its amendments 1:1983 and 2:1985, as HD 323.2.6 S2:1988, which is superseded by EN 60068-2-6:1995 (IEC 68-2-6:1995 + corrigendum Mar. 1995, not modified). |
| IEC 68-2-14 | NOTE: Harmonized, together with its amendment 1:1986, as HD 323.2.14 S2:1987 (not modified).   |
| IEC 68-2-31 | NOTE: Harmonized, together with its amendment 1:1982, as EN 60068-2-31:1993 (not modified).  |
| IEC 654-1   | NOTE: Harmonized as EN 60654-1:1993 (not modified).  |
| IEC 654-3   | NOTE: Harmonized as HD 413.3 S1:1987 (not modified).   |
| IEC 801-2   | NOTE: Harmonized as EN 60801-2:1993 (not modified).  |
| IEC 801-3   | NOTE: Harmonized as HD 481.3 S1:1987 (not modified).   |

**Annex ZA (normative)**

**Normative references to international publications  
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 410	1973	Sampling plans and procedures for inspection by attributes	-	-
IEC 902	1987	Industrial-process measurement and control Terms and definitions	-	-
IEC 1298-2	1995	Process measurement and control devices General methods and procedures for evaluating performance - Part 2: Tests under reference conditions	EN 61298-2	1995
IEC 1298-4	1995	Part 4: Evaluation report content	EN 61298-4	1995
ISO 31	1992	Quantities and units	-	-

STANDARD PREVIEW  
 (standards.iteh.ai)  
 http://en.ingenta.com/standards/sist/85810b57-da6a-429f-a3d4-68202a8bcfb/sist-en-61298-1-1998

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 61298-1:1998

<https://standards.iteh.ai/catalog/standards/sist/85810b57-da6a-429f-a3d4-68202ca8bcf6/sist-en-61298-1-1998>

NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

CEI  
IEC  
1298-1

Première édition  
First edition  
1995-07

---

---

Dispositifs de mesure et de commande  
de processus –  
Méthodes et procédures générales d'évaluation  
des performances –

iTeh STANDARD PREVIEW  
(see [standards.iteh.ai](https://standards.iteh.ai))

Partie 1:

Généralités

SIST EN 61298-1:1998

<https://standards.iteh.ai/sist-en-61298-1-1998>  
[68202ca8hcff/sist-en-61298-1-1998](https://standards.iteh.ai/sist-en-61298-1-1998)

Process measurement and control devices –  
General methods and procedures for  
evaluating performance –

Part 1:

General considerations

© CEI 1995 Droits de reproduction réservés — Copyright — all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève, Suisse

---

---



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

Q

Pour prix, voir catalogue en vigueur  
For price, see current catalogue

CONTENTS

	Page
FOREWORD .....	5
INTRODUCTION .....	7
Clause	
1 Scope .....	9
2 Normative references .....	9
3 Definitions .....	11
4 Test categories .....	13
5 General criteria .....	15
5.1 Realistic operating conditions .....	15
5.2 Economic aspects .....	15
5.3 Replication of the tests and comparability of the results .....	15
5.4 Processing the results .....	17
5.5 Independence of the results of a test from the effects of other tests .....	17
6 General conditions for tests and samples .....	17
6.1 Environmental test conditions .....	17
6.2 Supply conditions .....	19
6.3 Load conditions .....	21
6.4 Mounting position .....	21
6.5 Externally induced vibrations .....	21
6.6 External mechanical constraints .....	21
6.7 Selection .....	23
6.8 Delivery of the devices .....	23
6.9 Identification and inspection .....	23
7 General testing procedures and precautions .....	25
7.1 Test laboratory .....	25
7.2 Preparation for the tests .....	25
7.3 Choice of reference measuring equipment .....	25
7.4 Input variable quality .....	27
7.5 Tapping .....	27
7.6 Checking of calibration made prior to delivery .....	27
7.7 Sequence of tests .....	27
7.8 Interruption and duration of each series of measurements .....	27
7.9 Anomalies and failures during tests .....	29
7.10 Re-start of a test .....	29
7.11 Setting of adjustments .....	29
7.12 Preconditioning .....	29
7.13 Calibration adjustments of lower range value and span .....	31
7.14 Constancy of the operating conditions and settings .....	31
7.15 Input/output variable relationships .....	31
7.16 Error assessment .....	33
7.17 Symbols and units of measurement .....	33
7.18 Test report and documentation .....	33
Annex A – Bibliography .....	35



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

PROCESS MEASUREMENT AND CONTROL DEVICES –  
GENERAL METHODS AND PROCEDURES FOR  
EVALUATING PERFORMANCE –

Part 1: General considerations

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

[SIST EN 61298-1:1998](https://standards.iteh.ai/catalog/standards/sist/85810b57-da6a-429f-a3d4-68202ca8bcf6/sist-en-61298-1-1998)

<https://standards.iteh.ai/catalog/standards/sist/85810b57-da6a-429f-a3d4-68202ca8bcf6/sist-en-61298-1-1998>

International Standard IEC 1298-1 has been prepared by sub-committee 65B: Devices, of IEC technical committee 65: Industrial-process measurement and control.

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

DIS	Report on voting
65B/228/DIS	65B/217/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.

IEC 1298 consists of the following parts under the general title: *Process measurement and control devices – General methods and procedures for evaluating performance*.

- Part 1: General considerations
- Part 2: Tests under reference conditions
- Part 3: Tests for the effects of influence quantities
- Part 4: Evaluation report content

Annex A is for information only.

## INTRODUCTION

This standard is not intended as a substitute for existing standards, but is rather intended as a reference document for any future standards developed within the IEC or other standards organizations, concerning the evaluation of process instrumentation. Any revision of existing standards should take this standard into account.

This common standardized basis should be utilized for the preparation of future relevant standards, as follows:

- Any test method or procedure, already treated in this standard, should be specified and described in the new standard by referring to the corresponding clause of this standard.
- Any particular method or procedure, not covered by this standard, should be developed and specified in the new standard in accordance with the criteria, as far as they are applicable, stated in this standard.
- Any conceptual or significant deviation from the content of this standard, should clearly be identified and justified if introduced in a new standard.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 61298-1:1998

<https://standards.iteh.ai/catalog/standards/sist/85810b57-da6a-429f-a3d4-68202ca8bcf6/sist-en-61298-1-1998>

# PROCESS MEASUREMENT AND CONTROL DEVICES – GENERAL METHODS AND PROCEDURES FOR EVALUATING PERFORMANCE –

## Part 1: General considerations

### 1 Scope

This International Standard specifies general methods and procedures for conducting tests, and reporting on the functional and performance characteristics of process measurement and control devices. The methods and procedures specified in this standard are applicable to any kind of test or to any type of process measurement and control device. The tests are applicable to any such devices characterized by their own specific input and output variables, and by the specific relationship (transfer function) between the inputs and outputs, and include analogue and digital devices. For devices that require special tests, this standard shall be used, together with any product specific standard specifying special tests.

This part of IEC 1298 covers general principles which apply to the standard as a whole.

## iTeh STANDARD PREVIEW

### 2 Normative references [\(standards.iteh.ai\)](https://standards.iteh.ai)

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 1298. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 1298 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 410: 1973, *Sampling plans and procedures for inspection by attributes*

IEC 902: 1987, *Industrial-process measurement and control – Terms and definitions*

IEC 1298-2: 1995, *Process measurement and control devices – General methods and procedures for evaluating performance – Part 2: Tests under reference conditions*

IEC 1298-4: 1995, *Process measurement and control devices – General methods and procedures for evaluating performance – Part 4: Evaluation report content*

ISO 31: *Quantities and units*