SVENSK STANDARD SS-EN IEC 62828-3

Fastställd	Utgåva	Sida	Ansvarig kommitté
2018-09-12	1	1 (1+16)	SEK TK 65

Industriell processtyrning – Referensförhållanden och metoder vid provning av mätgivare – Del 3: Särskilda metoder för temperatur

Reference conditions and procedures for testing industrial and process measurement transmitters – Part 3: Specific procedures for temperature transmitters

Som svensk standard gäller europastandarden EN IEC 62828-3:2018. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62828-3:2018.

Nationellt förord

Europastandarden EN IEC 62828-3:2018

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62828-3, First edition, 2018 - Reference conditions and procedures for testing industrial and process measurement transmitters - Part 3: Specific procedures for temperature transmitters**

utarbetad inom International Electrotechnical Commission, IEC.

EN från CENELEC som är identiska med motsvarande IEC-standarder och som görs tillgängliga för nationalkommittéerna efter den 1 januari 2018 får en beteckning som inleds med EN IEC istället för som tidigare bara EN.

ICS 17.200.20; 25.040.40

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Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62828-3

June 2018

ICS 17.200.20; 25.040.40

English Version

Reference conditions and procedures for testing industrial and process measurement transmitters - Part 3: Specific procedures for temperature transmitters (IEC 62828-3:2018)

Conditions de référence et procédures pour l'essai des transmetteurs de mesure industrielle et de processus - Partie 3: Procédures spécifiques pour les transmetteurs de température (IEC 62828-3:2018)

Referenzbedingungen und Testmethoden für Industrie- und Prozessmessgrößenumformer - Teil 3: Spezielle Testmethoden für Temperaturmessumformer (IEC 62828-3:2018)

This European Standard was approved by CENELEC on 2018-05-23. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 62828-3:2018 E

SEK Svensk Elstandard SS-EN IEC 62828-3, utg 1:2018

European foreword

The text of document 65B/1110A/FDIS, future edition 1 of IEC 62828-3, prepared by IEC/SC 65B "Measurement and control devices, of IEC Technical Committee 65: Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62828-3:2018.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2019-02-23
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-05-23

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62828-3:2018 was approved by CENELEC as a European Standard without any modification.

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

IEC 60584-1:2013	NOTE	Harmonized as EN 60584-1:2013 (not modified).
IEC 60584-3:2007	NOTE	Harmonized as EN 60584-3:2008 (not modified).
IEC 60715	NOTE	Harmonized as EN 60715.
IEC 60751:2008	NOTE	Harmonized as EN 60751:2008 (not modified).
IEC 61152:1992	NOTE	Harmonized as EN 61152:1994 (modified).
IEC 61515:2016	NOTE	Harmonized as EN 61515:2016 (not modified).
IEC 61298 (series)	NOTE	Harmonized as EN 61298 (series).
IEC 61987-14:2016	NOTE	Harmonized as EN 61987-14:2016 (not modified).
IEC 62460:2008	NOTE	Harmonized as EN 62460:2008 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60584	series	Thermocouples	EN 60584	series
IEC 62828-1	2017	Reference conditions and procedures for testing industrial and process measurement transmitters – Part 1: General procedures for all types of transmitters	EN IEC 62828-1	2018

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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REFERENCE CONDITIONS AND PROCEDURES FOR TESTING INDUSTRIAL AND PROCESS MEASUREMENT TRANSMITTERS –

Part 3: Specific procedures for temperature transmitters

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62828-3 has been prepared by Subcommittee 65B: Measurement and control devices, of IEC Technical Committee 65: Industrial-process measurement, control and automation.

The IEC 62828 series cancels and replaces the IEC 60770 series and proposes revisions for the IEC 61298 series.

In IEC 61298, all parts related to PMT's will be deleted, leaving all the requirements regarding all devices but PMT's.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
65B/1110A/FDIS	65B/1114/RVD

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

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

A list of all parts in the IEC 62828 series, published under the general title *Reference conditions and procedures for testing industrial and process measurement transmitters*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Most of the current IEC standards on industrial and process measurement transmitters are rather old and were developed having in mind devices based on analogue technologies. Many industrial and process measurement transmitters are meanwhile evolved and are quite different from those analogue transmitters: they are often digital and include more functions and newer interfaces, both towards the computing section (mostly digital electronic) and towards the measuring section (mostly mechanical). Even if some standards dealing with digital process measurement transmitters already exist, they are not sufficient, since some aspects of the performance are not covered by appropriate test methods.

In addition, existing IEC test standards for industrial and process measurement transmitters are spread over many documents, so that for manufacturers and users it is difficult, impractical and time-consuming to identify and select all the standards to be applied to a device measuring a specific process quantity (pressure, temperature, flow, level, etc.).

To help manufacturers and users, it was decided to review, complete and reorganize the relevant IEC standards and to create a more suitable, effective and comprehensive standard series that provides in a systematic way all specifications and tests required for different industrial and process measurement transmitters.

To solve the issues mentioned above and to provide an added value for the stakeholders, the new standard series on industrial and process measurement transmitters covers the following main aspects:

- applicable normative references;
- specific terms and definitions;
- typical configurations and architectures for the various types of industrial and process measurement transmitters;
- hardware and software aspects;
- interfaces (to the process, to the operator, to the other measurement and control devices);
- physical, mechanical and electrical requirements and relevant tests; clear definition of the test categories: type tests, acceptance tests and routine tests;
- performance (its specification, tests and verification);
- environmental protection, hazardous areas application, functional safety, etc.;
- structure of the test report and of the technical documentation.

To cover in a systematic way all the topics to be addressed, the standard series is organized in several parts. At the moment of the publication of this document, the IEC 62828 series consists of the following parts:

- IEC 62828-1: General procedures for all types of transmitters
- IEC 62828-2: Specific procedures for pressure transmitters
- IEC 62828-3: Specific procedures for temperature transmitters
- IEC 62828-4: Specific procedures for level transmitters
- IEC 62828-5: Specific procedures for flow transmitters

In preparing the IEC 62828 series many test procedures were taken, with the necessary improvements, from the IEC 61298 series. As the actual IEC 61298 series is applicable to all process measurement and control devices, when the IEC 62828 series is completed the IEC 61298 series will be revised to harmonise it with the IEC 62828 series, taking out from its scope the industrial and process measurement transmitters. During the time when 61298 scope is being updated, the new series IEC 62828 takes precedence for industrial and process measurement transmitters.

When the IEC 62828 series is published, the IEC 60770 series will be withdrawn.

REFERENCE CONDITIONS AND PROCEDURES FOR TESTING INDUSTRIAL AND PROCESS MEASUREMENT TRANSMITTERS –

Part 3: Specific procedures for temperature transmitters

1 Scope

This part of IEC 62828 establishes specific procedures for testing temperature transmitters used in measuring and control systems for industrial process and for machinery control systems.

When the process measurement transmitter features the temperature transmitter separated from the sensing element (RTD, TC, etc.), the standard applies only to the temperature transmitter without the sensing element. In case of device where the sensing element is fully integrated with the temperature transmitter, the standard applies to the complete device.

For general test procedures, reference is made to IEC 62828-1, which is applicable to all types of industrial and process measurement transmitters (PMT).

NOTE In the industrial and process applications, to indicate the process measurement transmitters, it is common also to use the terms “industrial transmitters”, or “process transmitters”.

The sensing element itself (e.g., RTD, TC, etc.) as well as radiation thermometers are excluded from the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60584 (all parts), *Thermocouples*

IEC 62828-1:2017, *Reference conditions and procedures for testing industrial and process measurement transmitters – Part 1: General procedures for all types of transmitters*