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Irish Standard
I.S. EN IEC 62828-2:2018

Reference conditions and procedures for testing industrial and process measurement transmitters - Part 2: Specific procedures for pressure transmitters

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This document is based on:	*Published:*
EN IEC 62828-2:2018	2018-02-09

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
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I.S. EN IEC 62828-2:2018 is the adopted Irish version of the European Document EN IEC 62828-2:2018, Reference conditions and procedures for testing industrial and process measurement transmitters - Part 2: Specific procedures for pressure transmitters

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EN IEC 62828-2

February 2018

ICS 17.100; 25.040.40

English Version

Reference conditions and procedures for testing industrial and process measurement transmitters - Part 2: Specific procedures for pressure transmitters (IEC 62828-2:2017)

Conditions de référence et procédures pour l'essai des transmetteurs de mesure industrielle et de processus - Partie 2: Procédures spécifiques pour les transmetteurs de pression (IEC 62828-2:2017)

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European foreword

The text of document 65B/1098/FDIS, future edition 1 of IEC 62828-2, 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 62828-2:2018.

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)	2018-09-12
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IEC 60770 (all parts)	NOTE	Harmonized as EN 60770 (all parts).
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IEC 61518:2000	NOTE	Harmonized as EN 61518:2001(not modified). corrigendum Feb. 2002.
IEC 61987-13:2016	NOTE	Harmonized as EN 61987-13:2016 (not modified).
IEC 62828 (all parts)	NOTE	Harmonized as EN 62828 (all parts).

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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

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IEC 62828-2

Edition 1.0 2017-11

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Reference conditions and procedures for testing industrial and process measurement transmitters –
Part 2: Specific procedures for pressure transmitters

Conditions de référence et procédures pour l'essai des transmetteurs de mesure industrielle et de processus –
Partie 2: Procédures spécifiques pour les transmetteurs de pression

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IEC 62828-2

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Reference conditions and procedures for testing industrial and process measurement transmitters – Part 2: Specific procedures for pressure transmitters

Conditions de référence et procédures pour l'essai des transmetteurs de mesure industrielle et de processus – Partie 2: Procédures spécifiques pour les transmetteurs de pression

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ICS 17.100; 25.040.40

ISBN 978-2-8322-4850-8

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

Part 2: Specific procedures for pressure transmitters

FOREWORD

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

FDIS	Report on voting
65B/1098/FDIS	65B/1101/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.

This International Standard is to be used in conjunction with IEC 62828-1:2017.

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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

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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. Today's digital industrial and process measurement transmitters are quite different from those analogue transmitters: they 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 the necessary 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 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 IEC 62828 (all parts), many test procedures were taken, with the necessary improvements, from IEC 61298 (all parts). As IEC 61298 (all parts) is currently applicable to all process measurement and control devices, when IEC 62828 (all parts) is completed, IEC 61298 (all parts) will be revised to harmonise it with IEC 62828 (all parts), taking out from its scope the industrial and process measurement transmitters. During the time when the scope of IEC 61298 (all parts) is being updated, the new IEC 62828 series takes precedence for industrial and process measurement transmitters.

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

Part 2: Specific procedures for pressure transmitters

1 Scope

This part of IEC 62828 establishes specific procedures for testing pressure process measurement transmitters (PMT) used in measuring and control systems for industrial processes and for machinery control systems.

A pressure PMT can feature a remote seal to bring the process variable to the sensing element in the PMT. When the remote seal cannot be separated from the PMT, the complete device is tested.

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

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62828-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 General

3.1.1
absolute pressure
p_{abs}
pressure using absolute vacuum as the datum point

Note 1 to entry: The CDD code of this entry for Electronic Data Exchange is ABB181.

3.1.2
ambient atmospheric pressure
p_{amb}
pressure exerted by the atmospheric air at a given altitude and temperature

Note 1 to entry: The atmospheric pressure decreases with the altitude by about 10 Pa/m (Pascal per metre).

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