



IEC 61326-2-3

Edition 3.0 2020-10
REDLINE VERSION

INTERNATIONAL STANDARD



**Electrical equipment for measurement, control and laboratory use –
EMC requirements –
Part 2-3: Particular requirements – Test configuration, operational conditions
and performance criteria for transducers with integrated or remote signal
conditioning**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 17.220.20; 25.040.40; 33.100.20

ISBN 978-2-8322-9006-4

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	8
3 Terms and definitions	8
4 General	9
5 EMC test plan	10
5.1 General	10
5.2 Configuration of EUT during testing	10
5.3 Operation conditions of EUT during testing	10
5.4 Specification of FUNCTIONAL PERFORMANCE	10
5.5 Test description	10
6 Immunity requirements	10
6.1 Conditions during the tests	10
6.2 Immunity test requirements	11
6.3 Random aspects	11
6.4 Performance criteria	11
7 Emission requirements	13
7.1 Conditions during measurements	13
7.2 Emission limits	13
8 Test results and test report	13
9 Instructions for use	13
Annex A (normative) Immunity test requirements for PORTABLE TEST AND MEASUREMENT EQUIPMENT powered by battery or from the circuit being measured	14
Annex AA (normative) Additional requirements and exceptions for specific types of transducers – Transducers for measurement of tension and compressive forces (force transducers)	15
AA.1 General considerations	15
AA.2 Test configuration	15
AA.3 Operation conditions	16
Annex BB (normative) Additional requirements and exceptions for specific types of transducers – Transducers for measurement of pressure (pressure transducers)	18
BB.1 General considerations	18
BB.2 Test configuration	18
BB.3 Operation conditions	19
Annex CC (normative) Additional requirements and exceptions for specific types of transducers – Transducers for measurement of temperature (temperature transducer)	20
CC.1 General considerations	20
CC.2 Test configuration	20
CC.3 Operation conditions	21
Bibliography	23
Figure 101 – Example of a TRANSDUCER WITH INTEGRATED SIGNAL CONDITIONING	7
Figure 102 – Example of a TRANSDUCER WITH REMOTE SIGNAL CONDITIONING	8
Figure AA.1 – Example of the configuration of a force transducer with remote signal conditioning	16

Figure BB.1 – Example of the configuration of a pressure transducer	19
Figure CC.1 – Example of the configuration of a temperature transducer with sensor and signal conditioning in the same housing	21
Figure CC.2 – Example of the configuration of a temperature transducer with remote signal conditioning	21
Table 101 – Performance criteria for the different functions	12
Table AA.1 – Circuitry actions for generating an output signal for simulation of a mechanical load on the transducer.....	17

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL EQUIPMENT FOR MEASUREMENT,
CONTROL AND LABORATORY USE –
EMC REQUIREMENTS –****Part 2-3: Particular requirements –
Test configuration, operational conditions and performance
criteria for transducers with integrated or remote signal conditioning**

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

This International Standard IEC 61326-2-3 has been prepared by subcommittee 65A: System aspects, of IEC technical committee 65: Industrial-process measurement, control and automation.

This third edition cancels and replaces the second edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- update of the document with respect to IEC 61326-1:2020.

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

FDIS	Report on voting
65A/980/FDIS	65A/991/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.

In this document the following print types are used:

- Terms used throughout this document which have been defined in Clause 3 of this document and of IEC 61326-1:2020: SMALL CAPITALS.

This part of the IEC 61326 series is to be used in conjunction with IEC 61326-1:2020 and follows the same numbering of clauses, subclauses, tables and figures.

When a particular subclause of IEC 61326-1 is not mentioned in this part, that subclause applies as far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text in IEC 61326-1 is to be adapted accordingly.

NOTE The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in IEC 61326-1;
- unless notes are in a new subclause or involve notes in IEC 61326-1, they are numbered starting from 101 including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

A list of all parts of the IEC 61326 series, under the general title *Electrical equipment for measurement, control and laboratory use – EMC requirements*, 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.

ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL AND LABORATORY USE – EMC REQUIREMENTS –

Part 2-3: Particular requirements – Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning

1 Scope

In addition to the requirements of IEC 61326-1, this part of IEC 61326 specifies more detailed test configurations, operational conditions and performance criteria for transducers with integrated or remote signal conditioning.

This document applies only to transducers characterized by their ability to transform, with the aid of an auxiliary energy source, a non-electric quantity to a process-relevant electrical signal, and to output the signal at one or more PORTS. This document includes transducers for electro-chemical and biological measured quantities.

The transducers covered by this document ~~may~~ can be powered by AC or DC voltage and/or by battery or with internal power supply.

Transducers referred to by this document comprise at least the following items (see Figure 101 and Figure 102):

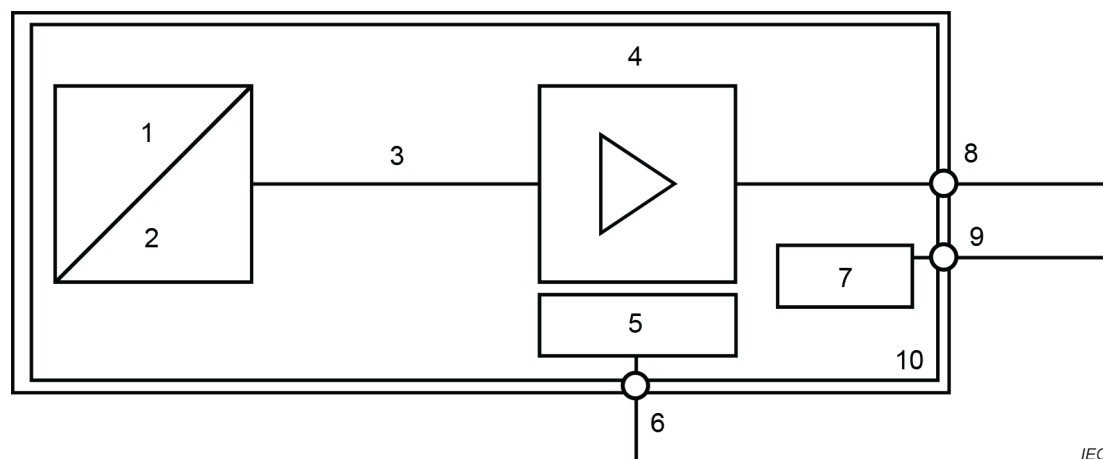
- one or more elements for transforming a non-electrical input quantity to an electrical quantity;
- a TRANSMISSION LINK for transferral of the electrical quantity to a component for signal conditioning;
- a unit for signal conditioning that converts the electrical quantity to a process-relevant electrical signal;
- an enclosure for enclosing the above-stated components fully or in parts.

Transducers referred to by this document ~~may~~ can also have the following items (see Figure 101 and Figure 102):

- a communication and control unit;
- a display unit;
- control elements such as keys, buttons, switches, etc.;
- transducer output signals (for example, switch outputs, alarm outputs) which are clearly assigned to the input signal(s);
- transducers with signal conditioning which may be integrated or remote.

The manufacturer specifies the environment for which the product is intended to be used and utilizes the corresponding test levels of IEC 61326-1.

Additional requirements and exceptions for specific types of transducers are given in ~~the annexes~~ Annex AA, Annex BB and Annex CC to this document.

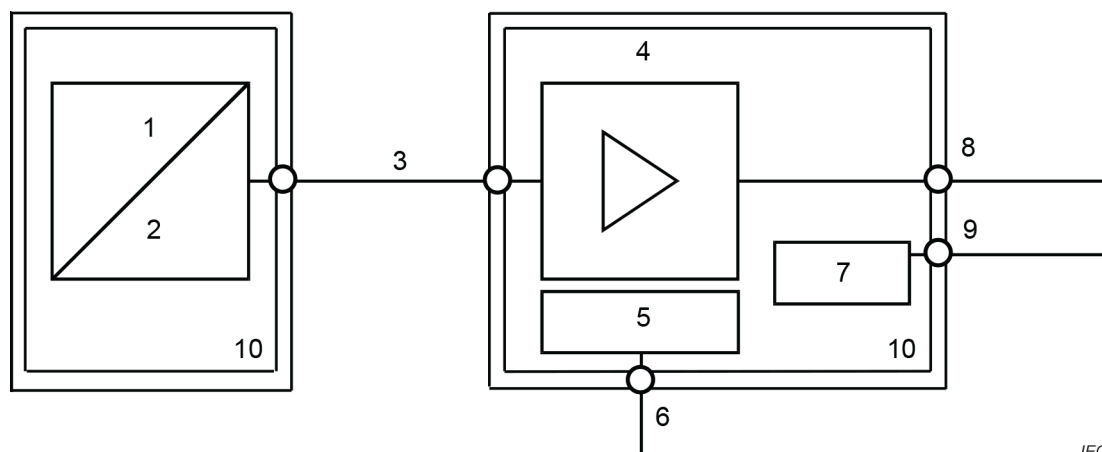


IEC

Key

- 1 non-electrical quantity
- 2 electrical quantity
- 3 TRANSMISSION LINK
- 4 signal conditioning
- 5 communication and control unit
- 6 input/output PORTS
- 7 power supply
- 8 signal PORT
- 9 AC/DC POWER PORT
- 10 enclosure

Figure 101 – Example of a TRANSDUCER WITH INTEGRATED SIGNAL CONDITIONING



IEC

Key

- 1 non-electrical quantity
- 2 electrical quantity
- 3 TRANSMISSION LINK
- 4 signal conditioning
- 5 communication and control unit
- 6 input/output PORTS
- 7 power supply
- 8 signal PORT
- 9 AC/DC POWER PORT
- 10 enclosure

Figure 102 – Example of a TRANSDUCER WITH REMOTE SIGNAL CONDITIONING

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.

Clause 2 of IEC 61326-1:~~2012~~2020 applies, except as follows:

Addition:

IEC 61326-1:~~2012~~2020, *Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements*

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electrical equipment for measurement, control and laboratory use –
EMC requirements –**

**Part 2-3: Particular requirements – Test configuration, operational conditions
and performance criteria for transducers with integrated or remote signal
conditioning**

**Matériel électrique de mesure, de commande et de laboratoire –
Exigences relatives à la CEM –**

**Partie 2-3: Exigences particulières – Configurations d'essai, conditions de
fonctionnement et critères de performance des transducteurs avec un système
de conditionnement du signal intégré ou à distance**

CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	8
3 Terms and definitions	8
4 General	9
5 EMC test plan	9
5.1 General	9
5.2 Configuration of EUT during testing	9
5.3 Operation conditions of EUT during testing	10
5.4 Specification of FUNCTIONAL PERFORMANCE	10
5.5 Test description	10
6 Immunity requirements	10
6.1 Conditions during the tests	10
6.2 Immunity test requirements	11
6.3 Random aspects	11
6.4 Performance criteria	11
7 Emission requirements	12
7.1 Conditions during measurements	12
7.2 Emission limits	12
8 Test results and test report	12
9 Instructions for use	12
Annex A (normative) Immunity test requirements for PORTABLE TEST AND MEASUREMENT EQUIPMENT powered by battery or from the circuit being measured	13
Annex AA (normative) Additional requirements and exceptions for specific types of transducers – Transducers for measurement of tension and compressive forces (force transducers)	14
AA.1 General considerations	14
AA.2 Test configuration	14
AA.3 Operation conditions	15
Annex BB (normative) Additional requirements and exceptions for specific types of transducers – Transducers for measurement of pressure (pressure transducers)	17
BB.1 General considerations	17
BB.2 Test configuration	17
BB.3 Operation conditions	18
Annex CC (normative) Additional requirements and exceptions for specific types of transducers – Transducers for measurement of temperature (temperature transducer)	19
CC.1 General considerations	19
CC.2 Test configuration	19
CC.3 Operation conditions	20
Bibliography	22
Figure 101 – Example of a TRANSDUCER WITH INTEGRATED SIGNAL CONDITIONING	7
Figure 102 – Example of a TRANSDUCER WITH REMOTE SIGNAL CONDITIONING	8
Figure AA.1 – Example of the configuration of a force transducer with remote signal conditioning	15

Figure BB.1 – Example of the configuration of a pressure transducer	18
Figure CC.1 – Example of the configuration of a temperature transducer with sensor and signal conditioning in the same housing	20
Figure CC.2 – Example of the configuration of a temperature transducer with remote signal conditioning	20
Table 101 – Performance criteria for the different functions	12
Table AA.1 – Circuitry actions for generating an output signal for simulation of a mechanical load on the transducer.....	16

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL EQUIPMENT FOR MEASUREMENT,
CONTROL AND LABORATORY USE –
EMC REQUIREMENTS –****Part 2-3: Particular requirements –
Test configuration, operational conditions and performance
criteria for transducers with integrated or remote signal conditioning**

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This International Standard IEC 61326-2-3 has been prepared by subcommittee 65A: System aspects, of IEC technical committee 65: Industrial-process measurement, control and automation.

This third edition cancels and replaces the second edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- update of the document with respect to IEC 61326-1:2020.

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

FDIS	Report on voting
65A/980/FDIS	65A/991/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.

In this document the following print types are used:

- Terms used throughout this document which have been defined in Clause 3 of this document and of IEC 61326-1:2020: SMALL CAPITALS.

This part of the IEC 61326 series is to be used in conjunction with IEC 61326-1:2020 and follows the same numbering of clauses, subclauses, tables and figures.

When a particular subclause of IEC 61326-1 is not mentioned in this part, that subclause applies as far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text in IEC 61326-1 is to be adapted accordingly.

NOTE The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in IEC 61326-1;
- unless notes are in a new subclause or involve notes in IEC 61326-1, they are numbered starting from 101 including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

A list of all parts of the IEC 61326 series, under the general title *Electrical equipment for measurement, control and laboratory use – EMC requirements*, 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.

ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL AND LABORATORY USE – EMC REQUIREMENTS –

Part 2-3: Particular requirements – Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning

1 Scope

In addition to the requirements of IEC 61326-1, this part of IEC 61326 specifies more detailed test configurations, operational conditions and performance criteria for transducers with integrated or remote signal conditioning.

This document applies only to transducers characterized by their ability to transform, with the aid of an auxiliary energy source, a non-electric quantity to a process-relevant electrical signal, and to output the signal at one or more PORTS. This document includes transducers for electro-chemical and biological measured quantities.

The transducers covered by this document can be powered by AC or DC voltage and/or by battery or with internal power supply.

Transducers referred to by this document comprise at least the following items (see Figure 101 and Figure 102):

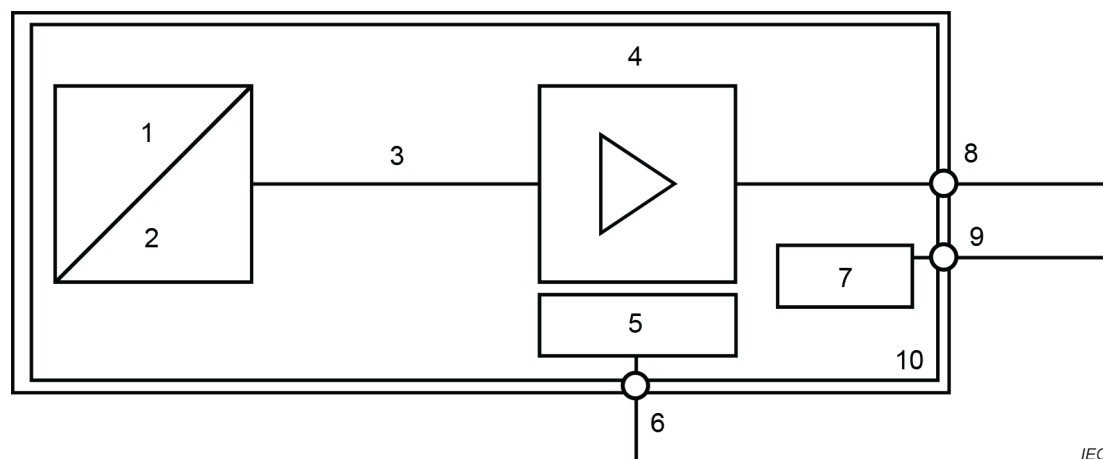
- one or more elements for transforming a non-electrical input quantity to an electrical quantity;
- a TRANSMISSION LINK for transferral of the electrical quantity to a component for signal conditioning;
- a unit for signal conditioning that converts the electrical quantity to a process-relevant electrical signal;
- an enclosure for enclosing the above-stated components fully or in parts.

Transducers referred to by this document can also have the following items (see Figure 101 and Figure 102):

- a communication and control unit;
- a display unit;
- control elements such as keys, buttons, switches, etc.;
- transducer output signals (for example, switch outputs, alarm outputs) which are clearly assigned to the input signal(s);
- transducers with signal conditioning which may be integrated or remote.

The manufacturer specifies the environment for which the product is intended to be used and utilizes the corresponding test levels of IEC 61326-1.

Additional requirements and exceptions for specific types of transducers are given in Annex AA, Annex BB and Annex CC to this document.

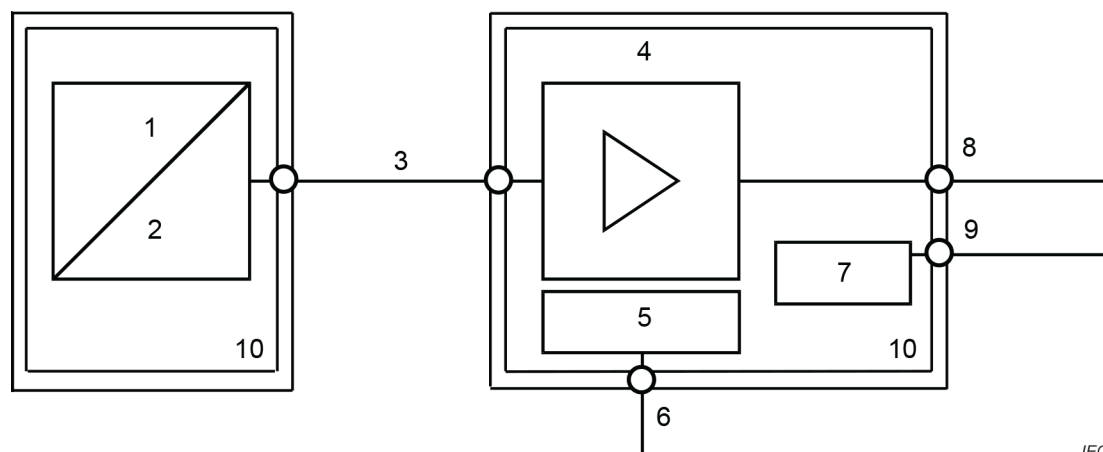


IEC

Key

- 1 non-electrical quantity
- 2 electrical quantity
- 3 TRANSMISSION LINK
- 4 signal conditioning
- 5 communication and control unit
- 6 input/output PORTS
- 7 power supply
- 8 signal PORT
- 9 AC/DC POWER PORT
- 10 enclosure

Figure 101 – Example of a TRANSDUCER WITH INTEGRATED SIGNAL CONDITIONING



IEC

Key

- 1 non-electrical quantity
- 2 electrical quantity
- 3 TRANSMISSION LINK
- 4 signal conditioning
- 5 communication and control unit
- 6 input/output PORTS
- 7 power supply
- 8 signal PORT
- 9 AC/DC POWER PORT
- 10 enclosure

Figure 102 – Example of a TRANSDUCER WITH REMOTE SIGNAL CONDITIONING

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.

Clause 2 of IEC 61326-1:2020 applies, except as follows:

Addition:

IEC 61326-1:2020, *Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements*

SOMMAIRE

AVANT-PROPOS	26
1 Domaine d'application	28
2 Références normatives	30
3 Termes et définitions	30
4 Généralités	31
5 Plan d'essai de CEM	31
5.1 Généralités	31
5.2 Configuration de l'EST lors des essais	32
5.3 Conditions de fonctionnement de l'EST lors des essais	32
5.4 Spécification des PERFORMANCES FONCTIONNELLES	32
5.5 Description de l'essai	32
6 Exigences relatives à l'immunité	33
6.1 Conditions lors des essais	33
6.2 Exigences pour les essais d'immunité	33
6.3 Aspects aléatoires	34
6.4 Critères de performance	34
7 Exigences relatives à l'émission	35
7.1 Conditions durant les mesurages	35
7.2 Limites d'émission	35
8 Résultats d'essai et rapport d'essai	35
9 Instructions pour l'utilisation	35
Annexe A (normative) Exigences concernant les essais d'immunité pour le MATERIEL D'ESSAI ET DE MESURE PORTABLE alimenté par batterie ou par le circuit mesuré	36
Annexe AA (normative) Exigences complémentaires et exceptions pour les types spécifiques de transducteurs – Transducteurs pour le mesurage de forces de tension et de compression (transducteurs de force)	37
AA.1 Considérations générales	37
AA.2 Configuration d'essai	37
AA.3 Conditions de fonctionnement	38
Annexe BB (normative) Exigences complémentaires et exceptions pour les types spécifiques de transducteurs – Transducteurs pour le mesurage de la pression (transducteurs de pression)	40
BB.1 Considérations générales	40
BB.2 Configuration d'essai	40
BB.3 Conditions de fonctionnement	41
Annexe CC (normative) Exigences complémentaires et exceptions pour les types spécifiques de transducteurs – Transducteurs pour le mesurage de la température (transducteurs de température)	42
CC.1 Considérations générales	42
CC.2 Configuration d'essai	42
CC.3 Conditions de fonctionnement	43
Bibliographie	45

Figure 102 – Exemple de TRANSDUCTEUR AVEC UN SYSTEME DE CONDITIONNEMENT DU SIGNAL A DISTANCE	30
Figure AA.1 – Exemple de configuration d'un transducteur de force avec système de conditionnement du signal à distance	38
Figure BB.1 – Exemple de configuration d'un transducteur de pression	41
Figure CC.1 – Exemple de configuration d'un transducteur de température avec capteur et conditionnement du signal dans la même enveloppe	43
Figure CC.2 – Exemple de configuration d'un transducteur de température avec système de conditionnement du signal à distance	43
Tableau 101 – Critères de performance pour les différentes fonctions	34
Tableau AA.1 – Actions d'un circuit pour générer un signal de sortie pour simuler une charge mécanique sur un transducteur	39

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

MATÉRIEL ÉLECTRIQUE DE MESURE, DE COMMANDE ET DE LABORATOIRE – EXIGENCES RELATIVES À LA CEM –

Partie 2-3: Exigences particulières – Configurations d'essai, conditions de fonctionnement et critères de performance des transducteurs avec un système de conditionnement du signal intégré ou à distance

AVANT-PROPOS

- 1) La Commission Électrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. À cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
- 2) Les décisions ou accords officiels de l'IEC concernant les questions techniques représentent, dans la mesure du possible, un accord international sur les sujets étudiés, étant donné que les Comités nationaux de l'IEC intéressés sont représentés dans chaque comité d'études.
- 3) Les Publications de l'IEC se présentent sous la forme de recommandations internationales et sont agréées comme telles par les Comités nationaux de l'IEC. Tous les efforts raisonnables sont entrepris afin que l'IEC s'assure de l'exactitude du contenu technique de ses publications; l'IEC ne peut pas être tenue responsable de l'éventuelle mauvaise utilisation ou interprétation qui en est faite par un quelconque utilisateur final.
- 4) Dans le but d'encourager l'uniformité internationale, les Comités nationaux de l'IEC s'engagent, dans toute la mesure possible, à appliquer de façon transparente les Publications de l'IEC dans leurs publications nationales et régionales. Toutes divergences entre toutes Publications de l'IEC et toutes publications nationales ou régionales correspondantes doivent être indiquées en termes clairs dans ces dernières.
- 5) L'IEC elle-même ne fournit aucune attestation de conformité. Des organismes de certification indépendants fournissent des services d'évaluation de conformité et, dans certains secteurs, accèdent aux marques de conformité de l'IEC. L'IEC n'est responsable d'aucun des services effectués par les organismes de certification indépendants.
- 6) Tous les utilisateurs doivent s'assurer qu'ils sont en possession de la dernière édition de cette publication.
- 7) Aucune responsabilité ne doit être imputée à l'IEC, à ses administrateurs, employés, auxiliaires ou mandataires, y compris ses experts particuliers et les membres de ses comités d'études et des Comités nationaux de l'IEC, pour tout préjudice causé en cas de dommages corporels et matériels, ou de tout autre dommage de quelque nature que ce soit, directe ou indirecte, ou pour supporter les coûts (y compris les frais de justice) et les dépenses découlant de la publication ou de l'utilisation de cette Publication de l'IEC ou de toute autre Publication de l'IEC, ou au crédit qui lui est accordé.
- 8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
- 9) L'attention est attirée sur le fait que certains des éléments de la présente Publication de l'IEC peuvent faire l'objet de droits de brevet. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié de tels droits de brevets et de ne pas avoir signalé leur existence.

La Norme internationale IEC 61326-2-3 a été établie par le sous-comité 65A: Aspects systèmes, du comité d'études 65 de l'IEC: Mesure, commande et automation dans les processus industriels.

Cette troisième édition annule et remplace la deuxième édition parue en 2012. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- mise à jour du document par rapport à l'IEC 61326-1:2020.

Le texte de cette Norme internationale est issu des documents suivants:

FDIS	Rapport de vote
65A/980/FDIS	65A/991/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette Norme internationale.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

Dans le présent document, les caractères d'imprimerie suivants sont utilisés:

- Termes définis à l'Article 3 du présent document et de l'IEC 61326-1:2020 et utilisés dans tout ce document: PETITES MAJUSCULES.

La présente partie de la série IEC 61326 doit être utilisée conjointement avec l'IEC 61326-1:2020 et suit la même numérotation d'articles, de paragraphes, de tableaux et de figures.

Lorsqu'un paragraphe particulier de l'IEC 61326-1 n'est pas mentionné dans la présente partie, ce paragraphe s'applique pour autant qu'il soit raisonnable. Lorsque la présente norme spécifie "addition", "modification" ou "remplacement", le texte correspondant de l'IEC 61326-1 doit être adapté en conséquence.

NOTE Le système de numérotation suivant est utilisé:

- paragraphes, tableaux et figures: ceux qui sont numérotés à partir de 101 sont complémentaires à ceux de l'IEC 61326-1;
- à l'exception de celles qui sont dans un nouveau paragraphe ou de celles qui concernent des notes de l'IEC 61326-1, les notes sont numérotées à partir de 101, y compris celles des articles ou paragraphes qui sont modifiés ou remplacés;
- les annexes supplémentaires sont appelées AA, BB, etc.

Une liste de toutes les parties de la série IEC 61326, publiées sous le titre général *Matériel électrique de mesure, de commande et de laboratoire – Exigences relatives à la CEM*, peut être consultée sur le site web de l'IEC.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous "<http://webstore.iec.ch>" dans les données relatives au document recherché. À cette date, le document sera

- reconduit,
- supprimé,
- remplacé par une édition révisée, ou
- amendé.

MATÉRIEL ÉLECTRIQUE DE MESURE, DE COMMANDE ET DE LABORATOIRE – EXIGENCES RELATIVES À LA CEM –

Partie 2-3: Exigences particulières – Configurations d'essai, conditions de fonctionnement et critères de performance des transducteurs avec un système de conditionnement du signal intégré ou à distance

1 Domaine d'application

En complément aux exigences de l'IEC 61326-1, la présente partie de l'IEC 61326 spécifie de façon plus détaillée les configurations d'essai, les conditions de fonctionnement et les critères de performance des transducteurs avec un système de conditionnement du signal intégré ou à distance.

Le présent document s'applique uniquement aux transducteurs caractérisés par leur capacité à transformer, avec l'aide d'une source d'énergie auxiliaire, une grandeur non électrique en un signal électrique approprié pour un processus, et à fournir un signal sur un ou plusieurs ACCES. Le présent document inclut les transducteurs pour le mesurage de grandeurs électrochimiques et biologiques.

Les transducteurs couverts par ce document peuvent être alimentés par une tension alternative ou continue et/ou par batterie ou par une alimentation interne.

Les transducteurs auxquels il est fait référence dans le présent document comportent au moins les entités suivantes (voir la Figure 101 et la Figure 102):

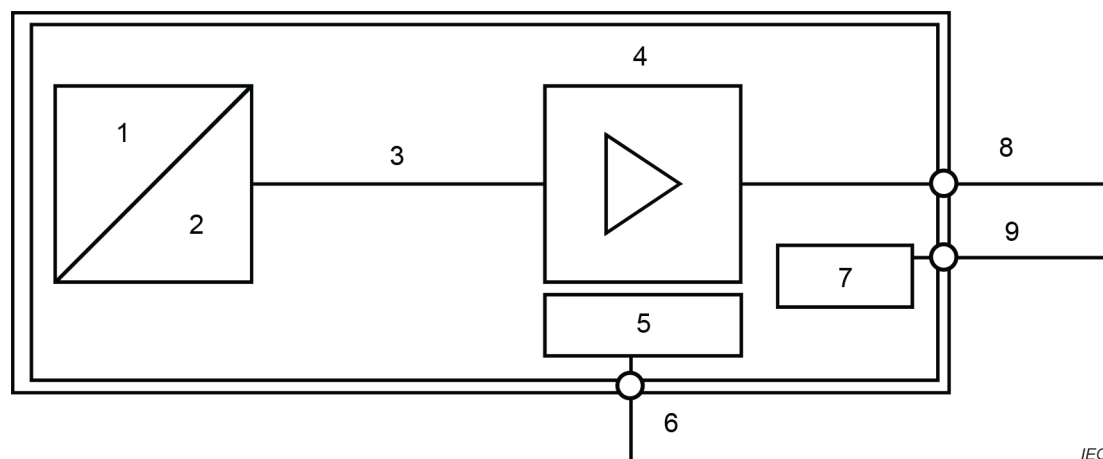
- un ou plusieurs éléments pour transformer une grandeur d'entrée non électrique en une grandeur électrique;
- une LIAISON DE TRANSMISSION pour le transfert de la grandeur électrique à un composant effectuant le conditionnement du signal;
- une unité pour le conditionnement du signal, qui convertit la grandeur électrique en un signal électrique approprié pour un processus;
- une enveloppe pour contenir complètement ou en partie les composants mentionnés ci-dessus.

Les transducteurs auxquels il est fait référence dans le présent document peuvent aussi comporter les entités suivantes (voir la Figure 101 et la Figure 102):

- une unité de communication et de commande;
- une unité d'affichage;
- des éléments de commande, tels que des clés, des boutons, des commutateurs, etc.;
- des signaux de sortie du transducteur (par exemple, des sorties de commutation, des sorties d'alarme) qui sont clairement assignés au signal ou aux signaux d'entrée;
- des transducteurs avec un conditionnement de signal qui peut être intégré ou à distance.

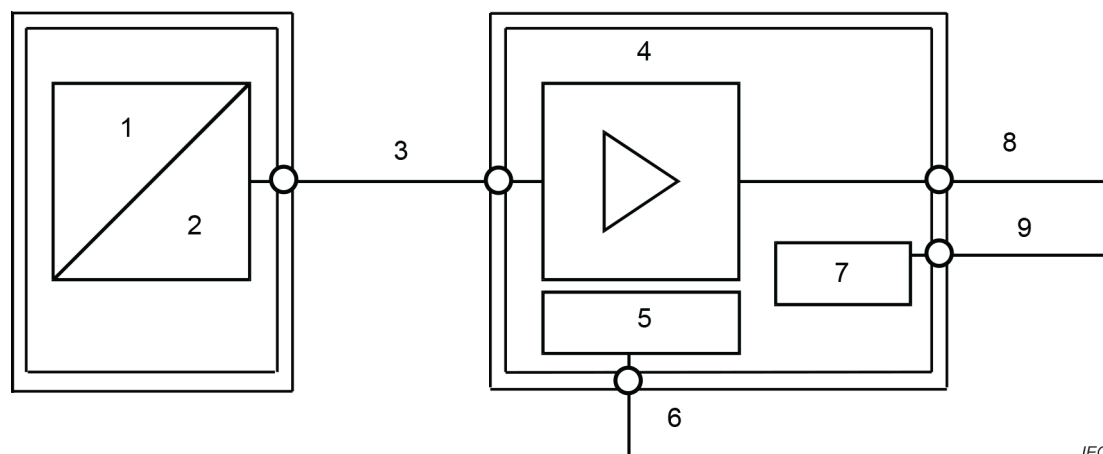
Le fabricant spécifie l'environnement dans lequel le produit est destiné à être utilisé et utilise les niveaux d'essai correspondants de l'IEC 61326-1.

Des exigences complémentaires et des exceptions pour des types spécifiques de transducteurs sont données dans l'Annexe AA, l'Annexe BB et l'Annexe CC du présent document.

**Légende**

- 1 grandeur non électrique
- 2 grandeur électrique
- 3 LIAISON DE TRANSMISSION
- 4 conditionnement du signal
- 5 unité de communication et de commande
- 6 ACCES entrée/sortie
- 7 alimentation électrique
- 8 ACCES du signal
- 9 ACCES EN COURANT ALTERNATIF/CONTINU
- 10 enveloppe

Figure 101 – Exemple de TRANSDUCTEUR AVEC UN SYSTEME DE CONDITIONNEMENT DU SIGNAL INTEGRE



IEC

Légende

- 1 grandeur non électrique
- 2 grandeur électrique
- 3 LIAISON DE TRANSMISSION
- 4 conditionnement du signal
- 5 unité de communication et de commande
- 6 ACCES entrée/sortie
- 7 alimentation électrique
- 8 ACCES du signal
- 9 ACCES EN COURANT ALTERNATIF/CONTINU
- 10 enveloppe

Figure 102 – Exemple de TRANSDUCTEUR AVEC UN SYSTEME DE CONDITIONNEMENT DU SIGNAL A DISTANCE

2 Références normatives

Les documents suivants cités dans le texte constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

L'Article 2 de l'IEC 61326-1:2020 s'applique, avec l'exception suivante:

Addition:

IEC 61326-1:2020, *Matériel électrique de mesure, de commande et de laboratoire – Exigences relatives à la CEM – Partie 1: Exigences générales*