IEC 61326-2-3

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REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

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
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COMMISSION

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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.
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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;

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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.

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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):

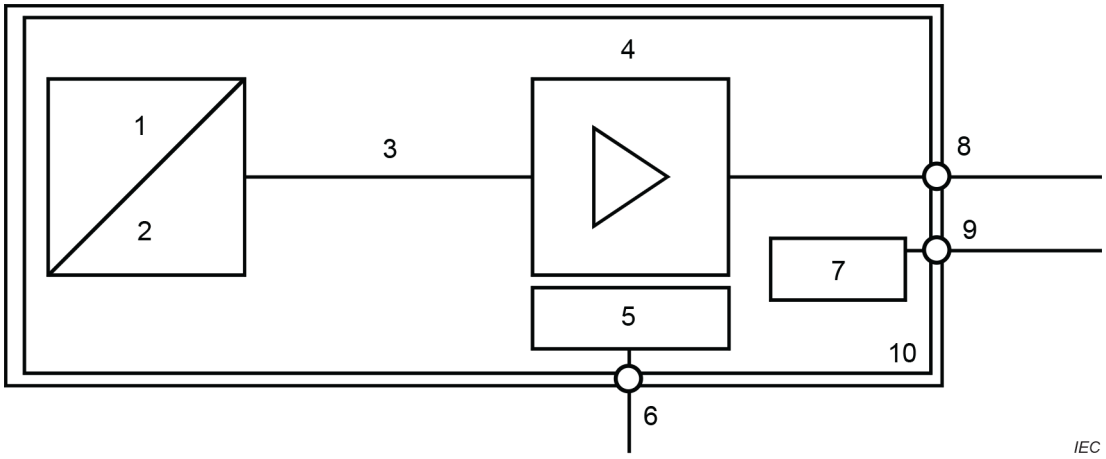
– one or more elements for transforming a non-electrical input quantity to an electrical quantity;
– a TRANSMISSION LINK for transferral of the electrical quantity to a component for signal conditioning;
– a unit for signal conditioning that converts the electrical quantity to a process-relevant electrical 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.

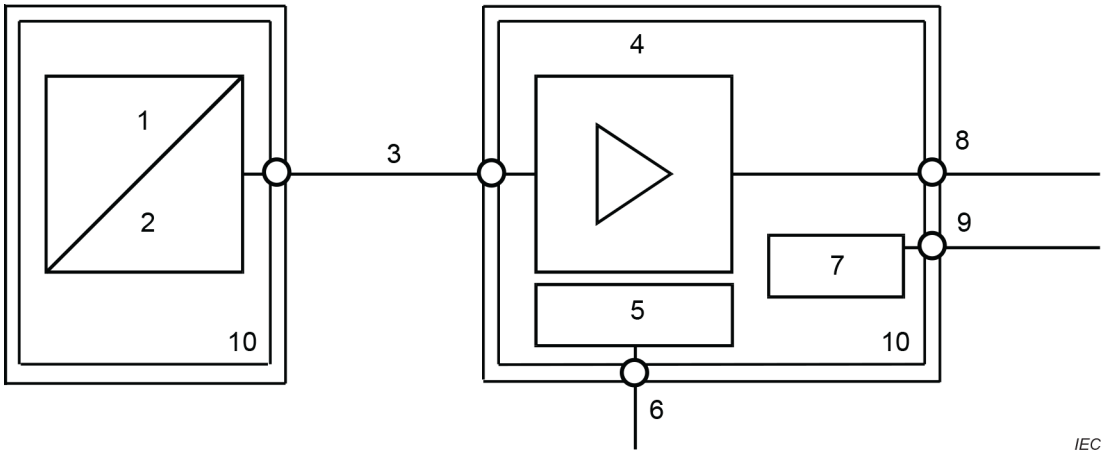
Additional requirements and exceptions for specific types of transducers are given in ~~the annexes~~ Annex AA, Annex BB and Annex CC to this document.



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



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*

IEC 61326-2-3

Edition 3.0 2020-10

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



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

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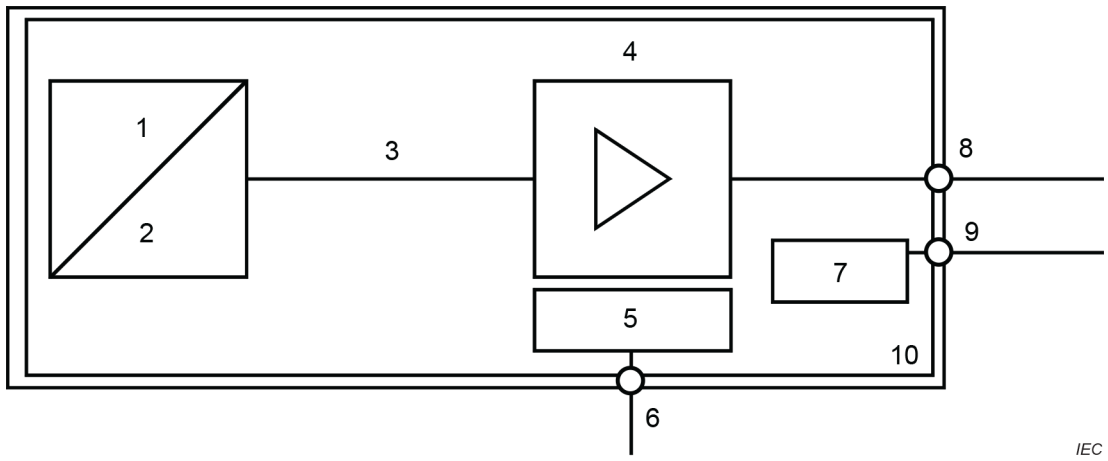
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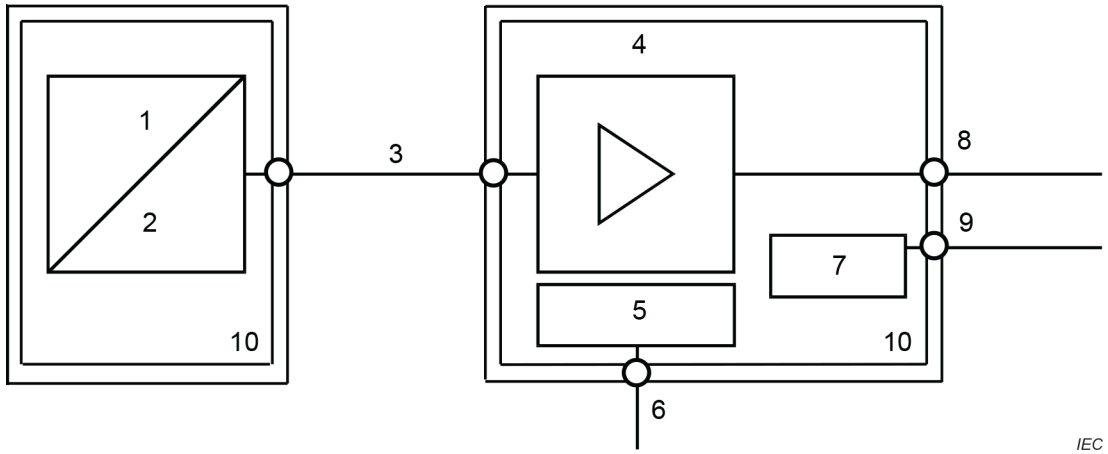
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Figure 101 – Example of a TRANSDUCER WITH INTEGRATED SIGNAL CONDITIONING



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Addition:

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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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

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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):

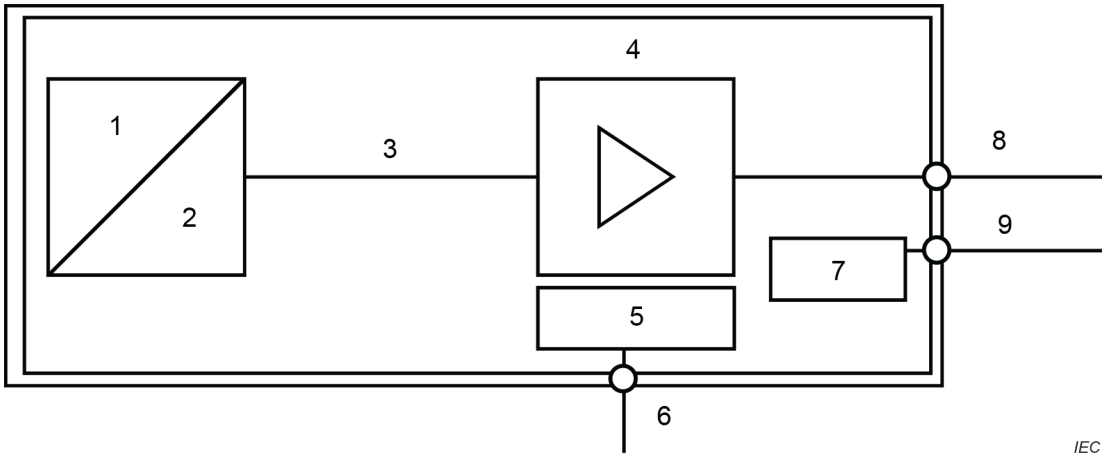
– un ou plusieurs éléments pour transformer une grandeur d'entrée non électrique en une grandeur électrique;
– une LIAISON DE TRANSMISSION pour le transfert de la grandeur électrique à un composant effectuant le conditionnement du signal;
– une unité pour le conditionnement du signal, qui convertit la 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.

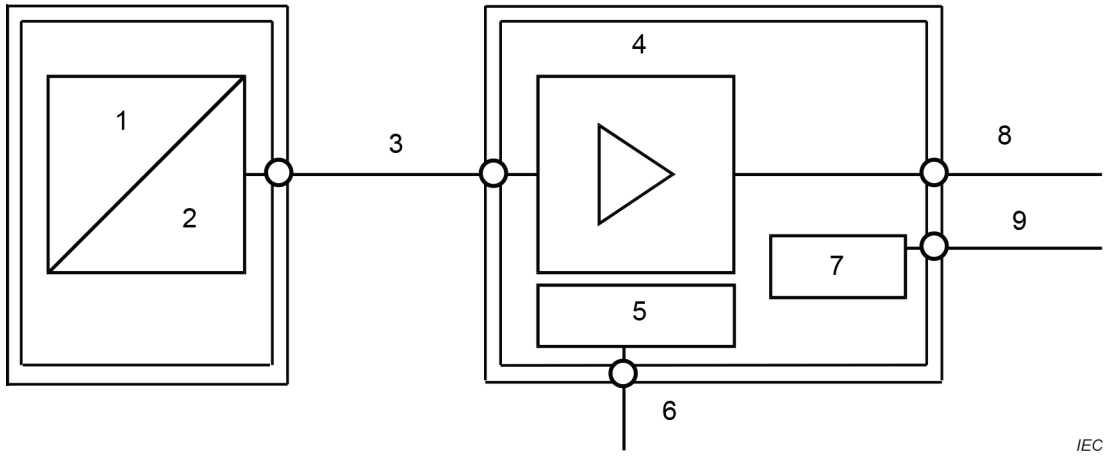
Des exigences complémentaires et des exceptions pour des types spécifiques de transducteurs sont données dans l'Annexe AA, l'Annexe BB et l'Annexe CC du présent document.



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



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*