



BSI Standards Publication

**Electrical measuring transducers for  
converting AC and DC electrical quantities  
to analogue or digital signals**

---

This is a preview of BS EN IEC 60688:2024. [Click here to purchase the full version from the ANSI store.](#)

## National foreword

This British Standard is the UK implementation of EN IEC 60688:2024. It is identical to IEC 60688:2024. It supersedes BS EN 60688:2013 which will be withdrawn on 31 December 2027.

The UK participation in its preparation was entrusted to Technical Committee PEL/85, Measuring equipment for electrical and electromagnetic quantities.

A list of organizations represented on this committee can be obtained on request to its committee manager.

### Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2024  
Published by BSI Standards Limited 2024

ISBN 978 0 539 21147 4

ICS 17.220.20

### Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2024.

### Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

---

This is a preview of BS EN IEC 60688:2024. [Click here to purchase the full version from the ANSI store.](#)

## EUROPÄISCHE NORM

December 2024

ICS 17.220.20

Supersedes EN 60688:2013

English Version

## Electrical measuring transducers for converting AC and DC electrical quantities to analogue or digital signals (IEC 60688:2024)

Transducteurs électriques de mesure convertissant les grandeurs électriques alternatives ou continues en signaux analogiques ou numériques  
(IEC 60688:2024)

Elektrische Messumformer zur Umwandlung von elektrischen Wechselstromgrößen und Gleichstromgrößen in analoge oder digitale Signale  
(IEC 60688:2024)

This European Standard was approved by CENELEC on 2024-10-16. 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye 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

This is a preview of BS EN IEC 60688:2024. [Click here to purchase the full version from the ANSI store.](#)

## European foreword

The text of document 85/921/FDIS, future edition 5 of IEC 60688, prepared by TC 85 "Measuring equipment for electrical and electromagnetic quantities" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60688:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2025-12-31 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-12-31 document have to be withdrawn

This document supersedes EN 60688:2013 and all of its amendments and corrigenda (if any).

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.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

## Endorsement notice

The text of the International Standard IEC 60688:2024 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 standard indicated:

IEC 60051 (series)	NOTE	Approved as EN IEC 60051 (series)
IEC 60051-1	NOTE	Approved as EN 60051-1
IEC 60068-2-30	NOTE	Approved as EN 60068-2-30
IEC 60255-151	NOTE	Approved as EN 60255-151
IEC 60359	NOTE	Approved as EN 60359
IEC 60364-4-44	NOTE	Approved as HD 60364-4-444
IEC 60381-1:1982	NOTE	Approved as HD 452.1 S1:1984 (not modified)
IEC 60664-1	NOTE	Approved as EN IEC 60664-1
IEC 61000-4-7	NOTE	Approved as EN 61000-4-7
IEC 61010 (series)	NOTE	Approved as EN IEC 61010 (series)
IEC 61869 (series)	NOTE	Approved as EN IEC 61869 (series)
IEC 62052-11:2020	NOTE	Approved as EN IEC 62052-11:2021 (not modified) + A11:2022

This is a preview of BS EN IEC 60688:2024. [Click here to purchase the full version from the ANSI store.](#)

(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.cencenelec.eu](http://www.cencenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-11	-	Environmental testing - Part 2-11: Tests - Test Ka: Salt mist	EN IEC 60068-2-11	-
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-52	2017	Environmental testing - Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)	EN IEC 60068-2-52	2018
IEC 60228	2023	Conductors of insulated cables	EN IEC 60228	2024
IEC/TR 61000-2-3	-	Electromagnetic compatibility (EMC) - Part 2: Environment - Section 3: Description of the environment - Radiated and non-network-frequency-related conducted phenomena	-	-
IEC 61010-1	2010	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements	EN 61010-1	2010
+ A1 (mod)	2016		+ A1	2019
IEC 61010-2-030	2023	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-030: Particular requirements for equipment having testing or measuring circuits	-	-
IEC 61326-1	2020	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements	EN IEC 61326-1	2021

This is a preview of BS EN IEC 60688:2024. [Click here to purchase the full version from the ANSI store.](#)

IEC 61557-12	2018	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC. - Equipment for testing, measuring or monitoring of protective measures - Part 12: Power metering and monitoring devices (PMD)	EN IEC 61557-12	2022
+ A1	2021		+ A1	2022
IEC 61558-1	2017	Safety of transformers, reactors, power supply units and combinations thereof - Part 1: General requirements and tests	EN IEC 61558-1	2019
IEC 60664-1	2020	Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests	EN IEC 60664-1	2020
IEC 62586-1	2017	Power quality measurement in power supply systems - Part 1: Power quality instruments (PQI)	EN 62586-1	2017
ISO 4628-3	-	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 3: Assessment of degree of rusting	-	-

This is a preview of BS EN IEC 60688:2024. [Click here to purchase the full version from the ANSI store.](#)

## CONTENTS

FOREWORD.....	9
INTRODUCTION.....	11
1 Scope.....	12
2 Normative references .....	13
3 Terms and definitions .....	14
3.1 General terms .....	14
3.2 Terms describing transducers .....	15
3.3 Terms describing transducers according to the measurand .....	17
3.4 Terms describing transducers according to their output load .....	18
3.5 Nominal values .....	19
3.6 Terms describing transducers with provisions to be adjusted by users .....	19
3.7 Influence quantities and reference conditions.....	20
3.8 Errors and variations.....	20
3.9 Accuracy, accuracy class, class index.....	21
3.10 Terms related to primary of transducers.....	21
3.11 Terms related to secondary output of transducers.....	22
4 Environmental conditions.....	22
5 Ratings.....	22
6 Requirements for design and construction .....	23
6.1 General.....	23
6.1.1 Transducer general architecture .....	23
6.1.2 Classification of transducers (TRD) .....	23
6.2 Safety requirements.....	24
6.2.1 General .....	24
6.2.2 Protection against electric shocks.....	24
6.2.3 Protection against mechanical hazards.....	25
6.2.4 Resistance to mechanical stress.....	25
6.2.5 Protection against the spread of fire .....	25
6.2.6 Equipment temperature limits and resistance to heat .....	25
6.2.7 Protection against hazards from fluids .....	26
6.2.8 Protection against radiation, including laser sources, and against sonic and ultrasonic pressure .....	26
6.2.9 Protection against liberated gases and substances, explosion and implosion.....	26
6.2.10 Components and subassemblies.....	26
6.2.11 Protection by interlocks .....	26
6.2.12 Hazards resulting from application.....	26
6.2.13 Risk assessment .....	27
6.3 EMC requirements .....	27
6.3.1 General .....	27
6.3.2 Immunity requirements .....	27
6.3.3 Emission requirements .....	28
6.4 Climatic requirements .....	28
6.5 Mechanical requirements .....	28
6.6 Functional requirements.....	28
6.7 Marking requirements .....	28
6.8 Documentation requirements .....	28