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NSAI Standards

Irish Standard
I.S. EN IEC 62041:2020

Transformers, power supplies, reactors and similar products - EMC requirements

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National Foreword

I.S. EN IEC 62041:2020 is the adopted Irish version of the European Document EN IEC 62041:2020, Transformers, power supplies, reactors and similar products - EMC requirements

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62041

February 2020

ICS 29.180; 33.100

Supersedes EN 62041:2010 and all of its amendments and corrigenda (if any)

English Version

Transformers, power supplies, reactors and similar products - EMC requirements (IEC 62041:2017)

Transformateurs, alimentations, bobines d'inductance et produits analogues – Exigences CEM (IEC 62041:2017)

Transformatoren, Drosseln, Netzgeräte und entsprechende Kombinationen - EMV-Anforderungen (IEC 62041:2017)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

The text of document 96/465/FDIS, future edition 3 of IEC 62041, prepared by IEC/TC 96 "Transformers, reactors, power supply units, and combinations thereof" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62041:2020.

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) 2020-09-11
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-12-11

This document supersedes EN 62041:2010 and all of its amendments and corrigenda (if any).

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The text of the International Standard IEC 62041:2017 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 60065	NOTE	Harmonized as EN 60065
IEC 60601-1	NOTE	Harmonized as EN 60601-1
IEC 60950-1	NOTE	Harmonized as EN 60950-1
IEC 61000-4-20:2010	NOTE	Harmonized as EN 61000-4-20:2010 (not modified)
IEC 61010-1	NOTE	Harmonized as EN 61010-1
IEC 61204	NOTE	Harmonized as EN 61204
IEC 61347 (series)	NOTE	Harmonized as EN 61347 (series)
IEC 62040 (series)	NOTE	Harmonized as EN 62040 (series)
CISPR 11	NOTE	Harmonized as EN 55011

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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 60050-161	-	International Electrotechnical Vocabulary. Chapter 161: Electromagnetic compatibility	-	-
IEC 61000-3-2	-	Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	EN IEC 61000-3-2	-
IEC 61000-3-3	-	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16 A per phase and not subject to conditional connection	EN 61000-3-3	-
IEC 61000-3-11	-	Electromagnetic compatibility (EMC) – Part 3-11: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems – Equipment with rated current ≤ 75 A and subject to conditional connection	EN IEC 61000-3-11	-
IEC 61000-3-12	-	Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤ 75 A per phase	EN 61000-3-12	-
IEC 61000-4-2	-	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	-
IEC 61000-4-3	-	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	-	-
IEC 61000-4-4	-	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	-

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Publication	Year	Title	EN/HD	Year
IEC 61000-4-5	-	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	-
IEC 61000-4-6	-	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	-
IEC 61000-4-11	-	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	-
IEC 61000-4-34	-	Electromagnetic compatibility (EMC) - Part 4-34: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current more than 16 A per phase	EN 61000-4-34	-
IEC 61000-6-1	-	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity standard for residential, commercial and light-industrial environments	EN IEC 61000-6-1	-
IEC 61000-6-2	-	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments	EN IEC 61000-6-2	-
IEC 61000-6-3	-	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments	EN 61000-6-3	-
IEC 61000-6-4	-	Electromagnetic compatibility (EMC) -- Part 6-4: Generic standards - Emission standard for industrial environments	EN 61000-6-4	-
IEC 61558	series	Safety of power transformers, power supplies, reactors and similar products	EN IEC 61558	series
CISPR 14-1	2016	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission	EN 55014-1	2017
CISPR 16-1-1	2015	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus	-	-
CISPR 16-1-2	2014	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-2: Radio disturbance and immunity measuring apparatus - Coupling devices for conducted disturbance measurements	EN 55016-1-2	2014

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Publication	Year	Title	EN/HD	Year
CISPR 16-1-4	2010	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-4: Radio disturbance and immunity measuring apparatus - Antennas and test sites for radiated disturbance measurements	EN 55016-1-4	2010
CISPR 16-2-1	2014	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-1: Methods of measurement of disturbances and immunity - Conducted disturbance measurements	EN 55016-2-1	2014
CISPR 16-2-3	2016	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements	EN 55016-2-3	2017
CISPR 16-4-2	-	Specification for radio disturbance and immunity measuring apparatus and methods - Part 4-2: Uncertainties, statistics and limit modelling - Measurement instrumentation uncertainty	EN 55016-4-2	-
CISPR 32	2015	Electromagnetic compatibility of multimedia equipment - Emission requirements	EN 55032	2015

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IEC 62041

Edition 3.0 2017-08

INTERNATIONAL STANDARD

Transformers, power supplies, reactors and similar products – EMC requirements

IEC 62041:2017-08(en)

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Edition 3.0 2017-08

INTERNATIONAL STANDARD

Transformers, power supplies, reactors and similar products – EMC requirements

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TRANSFORMERS, POWER SUPPLIES, REACTORS AND SIMILAR PRODUCTS –

EMC requirements

FOREWORD

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International standard IEC 62041 has been prepared by Technical Committee 96: Transformers, reactors, power supply units and combinations thereof.

This third edition cancels and replaces the second edition published in 2010. It constitutes a technical revision.

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

- the inclusion of a clause on tests in series production;
- the inclusion of a new clause on measurement uncertainly, and
- the status of a harmonized standard for this third edition.

It has the status of a product family EMC standard in accordance with IEC Guide 107:2009,

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Electromagnetic compatibility – Guide to the drafting of electromagnetic compatibility publications.

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

FDIS	Report on voting
96/465/FDIS	96/467/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 standard is to be used in conjunction with the IEC 61558 series.

In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type*;
- explanatory matter: in smaller roman type.

In the text of this publication, the words in **bold** are defined in Clause 3 of this document and in the IEC 61558 series.

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.

A bilingual version of this publication may be issued at a later date.

NOTE The attention of the National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or not later than 3 years from the date of publication.

The transitional period is no longer than 3 years after the publication of this standard.

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TRANSFORMERS, POWER SUPPLIES, REACTORS AND SIMILAR PRODUCTS –

EMC requirements

1 Scope

This document is applicable to transformers, reactors and power supply units covered by the IEC 61558 series of standards. This document deals with the electromagnetic compatibility requirements for emission and immunity within the frequency range 0 Hz to 400 GHz. No tests need to be performed at frequencies where no requirements are specified.

For associated transformers, associated reactors and associated power supply units either supplied with or incorporated into an appliance or equipment the relevant EMC standard for that appliance or equipment applies.

This document covers normal operating conditions only. Other operations of the transformers, reactors and power supply units (e.g. simulated faults in the electric circuitry for testing purposes or functional safety due to the effects of the electromagnetic phenomena, or evaluation of human being for exposure to electromagnetic fields (EMF)) have not been taken into consideration in this document.

Requirements are specified for each port considered. If requirements are different the most severe takes precedence.

This document may also be used as a guide to test transformers, reactors and power supply units separately before these are incorporated into an appliance or equipment.

NOTE When **EUT** (**Equipment under test**) is used, it covers **transformers**, **reactors** and **power supply** units where applicable.

This document does not apply to:

- uninterruptible power supplies (UPS) covered by IEC 62040 (all parts);
- power supply units covered by IEC 61204,

  (i.e. DC-DC converters, DC power and distribution equipment and power supply units for use in applications covered by IEC 60950-1, IEC 61010-1, IEC 60601-1 and IEC 60065);
- power supplies and converters for use with or in products covered by IEC 61347 (all parts).

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 60050-161, *International Electrotechnical Vocabulary – Chapter 161: Electromagnetic compatibility*

IEC 61000-3-2, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*

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