



**NSAI**  
Standards

**Irish Standard  
I.S. EN 50549-10:2022**

**Version 1.00**

# Requirements for generating plants to be connected in parallel with distribution networks - Part 10: Tests for conformity assessment of generating units

# I.S. EN 50549-10:2022 V1.00

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## National Foreword

I.S. EN 50549-10:2022 V1.00 is the version of the NSAI adopted European document EN 50549-10:2022, *Requirements for generating plants to be connected in parallel with distribution networks - Part 10: Tests for conformity assessment of generating units*, including any Corrections, Amendments etc. to EN 50549-10:2022.

This normative document by CEN/CENELEC the elaboration of which includes a public enquiry, followed by a Formal Vote of CEN/CENELEC national members and final ratification. This European Standard is published as an identical national standard and every conflicting national standard will be withdrawn. The content of a European Standard does not conflict with the content of any other EN (and HD for CENELEC).

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
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EN 50549-10

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Supersedes EN 50438:2013 (PART); EN 50438:2013/IS1:2015 (PART)

English Version

Requirements for generating plants to be connected in parallel  
with distribution networks - Part 10: Tests for conformity  
assessment of generating units

Exigences relatives aux centrales électriques destinées à  
être raccordées en parallèle à des réseaux de distribution -  
Partie 10: Essais d'évaluation de la conformité des unités  
de production

Anforderungen für zum Parallelbetrieb mit einem Verteilnetz  
vorgesehene Erzeugungsanlagen - Teil 10:  
Prüfanforderungen für die Konformitätsbeurteilung von  
Erzeugungseinheiten

This European Standard was approved by CENELEC on 2022-08-09. 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

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## European foreword

This document (EN 50549-10:2022) has been prepared by CLC/TC 8X "System aspects of electrical energy supply".

The following dates are fixed:

- latest date by which this document has to be (dop) 2023-08-09 implemented at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards (dow) 2025-08-09 conflicting with this document have to be withdrawn

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.

EN 50438:2013 has been superseded by EN 50549-1:2019. However, Annex D of EN 50438:2013 provided requirements on compliance type testing, which is out of the scope of EN 50549-1:2019 resulting in a gap regarding type testing. This document provides requirements for compliance type testing for generating units and closes this gap.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

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.

## 1 Scope

The purpose of this document is to provide technical guidance for tests on generating units and interface protection to evaluate their electrical characteristics.

NOTE 1 Mechanical issues are taken into account as far as they influence the electrical characteristics.

The evaluation results are intended to be used to demonstrate conformity of generating units to technical requirements for grid connection. In this context the evaluation results can also be used as part of a certification programme.

NOTE 2 Besides the type test results of the generating unit all additional elements for connection to the grid (e.g. transformer, cabling, multiple units) are considered in the evaluation of the final installation of a generating plant.

The requirements to be evaluated are covered in the following standardization documents:

- EN 50549-1:2019: Requirements for generating plants to be connected in parallel with distribution networks
  - Part 1: connection to a LV distribution network - Generating plants up to and including Type B
- EN 50549-2:2019: Requirements for generating plants to be connected in parallel with distribution networks
  - Part 2: Connection to a MV distribution network - Generating plants up to and including Type B

If grid connection requirements are dealt with in other documents or for other generating module types, where no specific testing procedure is provided, testing methods of this document can be used if applicable.

This document provides evaluation criteria for the conformity assessment of generating units with respect to the abovementioned standardization documents, based on type testing. However, some requirements are applicable on the generating plant level. The assessment of the conformity to these plant requirements are out of the scope of this document. Nevertheless, this document may be used to show the capabilities of a generating unit to be used in a plant.

As a consequence, it is possible that the conformity assessment of a generating unit does not cover all aspects of the above-mentioned standardization documents, typically when a requirement is evaluated on a plant level. Therefore, the conformity assessment report indicates clearly which clauses of this document are covered and which clauses are not covered.

This document recognizes the existence of specific technical test requirements within several member states that must be complied with.

## 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.

*EN 50549-1:2019, Requirements for generating plants to be connected in parallel with distribution networks - Part 1: Connection to a LV distribution network - Generating plants up to and including Type B*

*EN 50549-2:2019, Requirements for generating plants to be connected in parallel with distribution networks - Part 2: Connection to a MV distribution network - Generating plants up to and including Type B*

*EN IEC 60034 (all parts), Rotating electrical machines*

*EN IEC 60034-4-1, Rotating electrical machines - Part 4-1: Methods for determining electrically excited synchronous machine quantities from tests*

*EN 50524, Data sheet for photovoltaic inverters*

*EN 60255-1, Measuring relays and protection equipment - Part 1: Common requirements*



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