

საქართველოს სტანდარტი

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სადისტრიბუციო ქსელებთან - ნაწილი 2: MV განაწილების ქსელთან კავშირი
- გენერაციის სადგურები B ტიპის ჩათვლით

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4 რეგისტრირებულია: სსიპ-საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 01/10/2020 წლის №268-1.3-018666

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English Version

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

Exigences relatives aux centrales électriques destinées à être raccordées en parallèle à des réseaux de distribution -
Partie 2: Raccordement à un réseau de distribution MT -
Centrales électriques jusqu'au Type B inclus

Anforderungen für zum Parallelbetrieb mit einem Verteilnetz
vorgesehene Erzeugungsanlagen - Teil 2: Anschluss an
das Mittelspannungsverteilstromnetz für Erzeugungsanlagen bis
einschließlich Typ B

This European Standard was approved by CENELEC on 2018-08-09. 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.

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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

Contents

Page

European foreword	4
Introduction.....	5
1 Scope.....	7
2 Normative references	8
3 Terms and definitions	8
3.1 General	8
3.2 Plant, module and unit.....	10
3.3 Power.....	12
3.4 Voltage.....	13
3.5 Circuit theory.....	15
3.6 Protection.....	17
3.7 Control	21
4 Requirements on generating plants	23
4.1 General	23
4.2 Connection scheme	24
4.3 Choice of switchgear	24
4.3.1 General	24
4.3.2 Interface switch	24
4.4 Normal operating range	25
4.4.1 General	25
4.4.2 Operating frequency range	25
4.4.3 Minimal requirement for active power delivery at underfrequency	25
4.4.4 Continuous operating voltage range	26
4.5 Immunity to disturbances.....	26
4.5.1 General	26
4.5.2 Rate of change of frequency (ROCOF) immunity	27
4.5.3 Under-voltage ride through (UVRT)	27
4.5.4 Over-voltage ride through (OVRT)	29
4.6 Active response to frequency deviation	30
4.6.1 Power response to overfrequency.....	30
4.6.2 Power response to underfrequency.....	33
4.7 Power response to voltage changes	36
4.7.1 General	36
4.7.2 Voltage support by reactive power	36
4.7.3 Voltage related active power reduction	41
4.7.4 Short circuit current requirements on generating plants	41
4.8 EMC and power quality	46
4.9 Interface protection	48
4.9.1 General	48
4.9.2 Voltage transformer	49
4.9.3 Requirements on voltage and frequency protection.....	49
4.9.4 Means to detect island situation	52

4.9.5	Digital input to the interface protection	53
4.10	Connection and starting to generate electrical power.....	53
4.10.1	General	53
4.10.2	Automatic reconnection after tripping.....	54
4.10.3	Starting to generate electrical power	54
4.10.4	Synchronization	54
4.11	Ceasing and reduction of active power on set point	55
4.11.1	Ceasing active power	55
4.11.2	Reduction of active power on set point	55
4.12	Remote information exchange	55
Annex A (informative)	Interconnection guidance	56
A.1	General	56
A.2	Network integration	56
A.3	Clusters of single-phase generating units	57
Annex B (informative)	Remote information exchange	58
Annex C (informative)	Parameter Table	62
Annex D (informative)	List of national requirements applicable for generating plants	67
Annex E (informative)	Loss of Mains and overall power system security	69
Annex F (informative)	Examples of protection strategies	70
F.1	Introduction	70
F.1.1	General	70
F.1.2	Generalities	70
F.1.3	Detection of unwanted islands	70
F.1.4	Problems with uncontrolled islanding in MV networks	71
F.1.4.1	Safety	71
F.1.4.2	Grid parameters	71
F.1.4.3	Reclosing operations	71
F.1.4.4	Protection of islands against overcurrents	71
F.1.4.5	Protection against phase to earth faults	71
F.2	Example strategy 1	72
F.3	Example strategy 2	75
Annex G (normative)	Abbreviations	77
Annex H (informative)	Relationship between this European standard and the COMMISSION REGULATION (EU) 2016/631	78
Bibliography	79

European foreword

This document (EN 50549-2:2019) 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 implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-08-01
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2022-02-01

This document supersedes CLC/TS 50549-2:2015.

This European Standard relates to both the RfG European Network Code and current technical market needs. Its purpose is to give detailed description of functions to be implemented in products.

This European Standard is also intended to serve as a technical reference for the definition of national requirements where the RfG European Network Code requirements allow flexible implementation. The specified requirements are solely technical requirements; economic issues regarding, e.g. the bearing of cost are not in the scope of this document.

CLC/TC 8X plans future standardization work in order to ensure the compatibility of this European Standard (EN) with the evolution of the legal framework.

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.

Introduction

1. Foreword

This Explanatory Note explains the rationale behind the content and structure of EN 50549-1 and EN 50549-2. Due to the unique relationship between COMMISSION REGULATION 2016/631 (RfG) and the EN 50549 Series, and based on the comments received at the enquiry stage of FprEN 50549-1 and FprEN 50549-2, TC8X WG03 decided to draft this explanatory note in order to provide national committees and the wider public with an understanding of these rationale

2. Increased Scope of EN 50549 in relation to RfG

In the tradition of EN 50438, TC8X WG03 intended, in writing of FprEN 50549, to include all capabilities of generating plants that are needed to operate these in parallel to distribution networks. This includes issues necessary for a stable distribution network management as well as the management of the interconnected system. As RfG is focused on the interconnected system, it is logical that, taking into account further needs for distribution network management, further aspects are included.

3. Introduction of “Responsible party”

During the national implementation process of COMMISSION REGULATION (EU) 2016/631, different types of responsible parties play a role in the refinement of the non-exhaustive requirements. In each member country, the National Regulatory Authority approves this national implementation. Depending on the national regulatory framework, this might result in a variety of documents: national laws, decrees or regulations, technical specifications, or requirements of transmission and distribution system operators. Therefore, as explained in the scope, EN 50549-1 and EN 50549-2 refer to the “responsible party” where requirements have to be defined by an actor other than the DSO. However when a generating plant is built and connected to the distribution network, typically the distribution system operator provides the plant developer all the technical requirements to be fulfilled.

4. Use of terms

Terms and definitions are selected to achieve consistency with EN 60050, IECV (cf. www.electropedia.org) and CENELEC terminology, recognizing that terms in COMMISSION REGULATION (EU) 2016/631 may deviate.

5. Additional requirements for distribution system management

The following requirements are stated in EN 50549 for distribution system management reasons, which might not be required in RfG or if required in RfG, are not required for type A. As Directive 714/2009 8(7) limits the scope of RfG to issues effecting the cross border trade of electricity, requirements included solely for the need of distribution system management are considered beyond the scope of RfG.

- Connection scheme and Coordination of switch gear,
- Voltage operating range,
- Reactive power capability and control modes,
- Voltage related active power reduction,
- Interface protection including the detection of island situations,
- Connection and reconnection to the grid,
- Generation curtailment,
- Remote information exchange,

6. Additional requirements for stability of the interconnected system

Additionally, requirements relevant for the stability of the interconnected systems are included in case of over voltage ride through (OVRT) as this is not dealt with in RfG. Due to the long duration of RfG development and the fast development of decentralised generation in Europe robustness to voltage swells is considered to be of high importance, but apparently could not be included into RfG.

As electrical energy storage system (EESS), are excluded from the scope of RfG, but are included in the scope of the EN 50549 Series, EN 50549 also includes the further requirement of active power frequency response to under frequency (LFSM-U) to electrical energy storage systems. This requirement is considered of great importance in view of the expected fast increase of electrical energy storage for the next years and is considered not to affect the cost of electrical energy storage systems if considered during their design.

7. Details on the operation of the LFSM-O

During the enquiry stage, some comments reported that certain details in the chapter regarding the operation of the LFSM-O (e.g. intentional delay, operation with deactivation threshold) were violating the RfG. These topics have been further evaluated consulting the European Stakeholder Committee (ESC-GC) and TC8X WG03 could not conclude in the same way. The fact that these operations are not foreseen in the RfG is considered not sufficient to state any violation. Therefore these details are kept with additional information on their use.

8. Implementation of UVRT and LFSM-U to avoid legal conflict with RfG

Under Voltage Ride Through (UVRT) requirements are defined in RfG for modules type B, type C and type D. There is no mentioning of this topic for type A modules.

Nevertheless UVRT is seen as an important requirement in some member states even for small generation modules like type A.

From a legal point of view there are two contradicting opinions on whether it is allowed or forbidden to require UVRT for type A modules.

- Opinion 1: It can be required because the topic is not dealt with for type A modules.
- Option 2: It cannot be required because the topic UVRT is dealt within the RfG. Not mentioning UVRT for type A in RfG therefore means that it cannot be required for type A modules.

As long as there is no clarification on this legal issue Cenelec does not have the possibility to require UVRT for type A modules. This is the reason why in EN 50549-1 and 50549-2 the UVRT functionalities for type A generating plants are not defined as requirements (shall) but as a recommendation (should).

This same explanation can be applied to the requirements regarding Limited Frequency Sensitive Mode - Underfrequency (LFSM-U). In RfG, this LFSM-U is solely defined for type C and type D modules. In EN 50549, LFSM-U is defined as a recommendation (should) for generating modules of type A and type B. The sole exception is electrical energy storage systems having a requirement (shall) but these systems are not within the scope of the RfG.

9. Annex H - Relationship between this European standard and the COMMISSION REGULATION (EU) 2016/631.

Manufacturers of generating units and plants shall comply with all relevant EU Directives and Regulations. For the specific function of connecting the generating plant with the electric system the reference regulation is COMMISSION REGULATION (EU) 2016/631 (NC RfG).

Since the EN 50549-1 and -2 are covering all technical requirements for type A and type B generating units, modules and plants, it is considered helpful to provide the information which clause of the standard supports which article of the RfG in a structured informative annex within the standard.

For other EU Directives and Regulations (e.g. LVD, MD or GAR) it is a formal task given to CCMC to include such an informative Annex ZZ based on a standardization request from the EU. It is finally reviewed by the new approach consultant (NAC) for the relevant Directive or Regulation, prior to the listing of the standard in the official journal of the EU (OJEU) providing then “presumption of conformity”. This means that if a product is compliant with the standard, the Directive or Regulations is fulfilled too.

CLC TC 8X is fully aware, that this official procedure is not included in the RfG. Therefore CLC TC 8X WG3 drafted Annex H. In Annex H the relationship between the clauses and the articles is shown. It is considered, that generating plants compliant with the clauses of the standards are also compliant with the articles in the RfG. Of course, this does not provide “presumption of conformity” as a listed standard in the OJEU would provide. Nevertheless it will be helpful for the industry when performing the conformity assessment against RfG.

საინფორმაციო ნაწილი. სრული ტექსტის საწინააღმდეგო შეიძინეთ სტანდარტი.