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Kopplingsapparater och kopplingsutrustningar för lågspänning – Integrering av enheter för radiokommunikation med frekvenser överstigande 380 MHz

*Switchgear and controlgear and their assemblies for low voltage –
Integration of radiocommunication device above 380 MHz into an equipment*

Som svensk standard gäller europastandarden EN IEC 63404:2024. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 63404:2024.

Nationellt förord

Europastandarden EN IEC 63404:2024

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- **IEC 63404, First edition, 2024 - Switchgear and controlgear and their assemblies for low voltage – Integration of radiocommunication device above 380 MHz into an equipment**

utarbetad inom International Electrotechnical Commission, IEC.

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English Version

Switchgear and controlgear and their assemblies for low voltage
- Integration of radiocommunication device above 380 MHz into
an equipment
(IEC 63404:2024)

Appareillages et ensembles d'appareillages à basse tension
- Intégration d'un dispositif de radiocommunication de plus
de 380 MHz à un équipement
(IEC 63404:2024)

Niederspannungsschaltgeräte und deren Niederspannungs-
Schaltgerätekombinationen - Integration einer
Funkkommunikationseinrichtung oberhalb 380 MHz in ein
Gerät
(IEC 63404:2024)

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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

European foreword

The text of document 121/151/FDIS, future edition 1 of IEC 63404, prepared by TC 121 "Switchgear and controlgear and their assemblies for low voltage" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63404:2024.

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- latest date by which the national standards conflicting with the (dow) 2027-12-31 document have to be withdrawn

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The text of the International Standard IEC 63404:2024 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 60947-5-2 NOTE Approved as EN IEC 60947-5-2

IEC 61439-1:2020 NOTE Approved as EN IEC 61439-1:2021 (not modified)

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.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60417	-	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.	-	-
IEC 61000-4-39	2017	Electromagnetic compatibility (EMC) - Part 4-39: Testing and measurement techniques - Radiated fields in close proximity - Immunity test	EN 61000-4-39	2017
IEC 62479	-	Assessment of the compliance of low-power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)	EN 62479	-
IEC 62657-2	-	Industrial communication networks - Coexistence of wireless systems - Part 2: Coexistence management	EN IEC 62657-2	-
ISO 7000	-	Graphical symbols for use on equipment - Registered symbols	-	-

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Switchgear and controlgear and their assemblies for low voltage – Integration of radiocommunication device above 380 MHz into an equipment

Appareillages et ensembles d'appareillages à basse tension – Intégration d'un dispositif de radiocommunication de plus de 380 MHz à un équipement

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SWITCHGEAR AND CONTROLGEAR AND
THEIR ASSEMBLIES FOR LOW VOLTAGE – INTEGRATION OF
RADIOCOMMUNICATION DEVICE ABOVE 380 MHZ INTO AN EQUIPMENT**

FOREWORD

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IEC 63404 has been prepared by IEC technical committee 121: Switchgear and controlgear and their assemblies for low voltage. It is an International Standard.

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

Draft	Report on voting
121/151/FDIS	121/158/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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INTRODUCTION

In the context of the fast evolution of radiocommunication technologies and the long lifetime of low voltage equipment, this document proposes the evaluation and verification of the initial integration and update of radiocommunication devices within host equipment, including the hardware or the software.

The aim of this document is to define the tasks of testing the host equipment when integrating and updating the radiocommunication device into low voltage equipment (e.g. circuit-breaker, sensor, electric actuator, etc.). In general, this document gives requirements for components hosting a radiocommunication device in order to facilitate their integration into an assembly.

This document is intended to be referenced by product standards as common radiocommunication requirements (see Annex C).

The test program has been elaborated based on the result of actual IEC 61000-4-39 testing by equipment manufacturers and test laboratories. This test allows the characterisation of radiofrequency band(s) and amplitude(s) which is called a capability profile. This capability profile can be used to demonstrate the capability of an equipment to host various radiocommunication devices when their characteristics are within the limits given by the capability profile.

The integration of a pre-evaluated radiocommunication device according to its radiotechnology standard into a host equipment can affect its radio transmitter performances. This document includes the verification of the radiocommunication functions after integration following the main guidance from ETSI EG 203 367, FCC KDB 996369 D04, MIIT No.129:2021 and GRFC N 07-20-03-001:2007.

SWITCHGEAR AND CONTROLGEAR AND THEIR ASSEMBLIES FOR LOW VOLTAGE – INTEGRATION OF RADIOCOMMUNICATION DEVICE ABOVE 380 MHZ INTO AN EQUIPMENT

1 Scope

This document defines radiocommunication related requirements for equipment intended to integrate a radiocommunication device. It includes the initial integration and update of a the radiocommunication device, having a carrier frequency greater than 380 MHz, into new or updated host equipment with:

- The classification of integration categories;
- The EMC immunity verification using a capability profile approach;
- The verification of the unwanted emission level of the radio transceiver.

This document also provides typical radiocommunication device integration use cases (see Annex A).

The object of this document is to define the required evaluation when incorporating a radiocommunication device into a new or updated host equipment.

This document is intended to be referred by the product standard of the host equipment for providing additional characteristics, performance, and evaluation regarding the integration and update of a radiocommunication device (see Annex C). It can also be used by the manufacturer of the host equipment when no applicable product standard exists.

In addition, this document provides guidance on considerations to be addressed in product standards including safety and security matter.

This document does not cover:

- The test of the radiocommunication device according to its radiotechnology standard or specification (e.g. IEEE 802.11, IEEE 802.15.4);
- Allocation of radio frequencies;
- The impact on the application of the equipment;
- The safety related requirements of the host equipment (see the applicable product standard)
- Hazards related to remote control operations (see the applicable product standard);
- Over the air software updates (under consideration for the next revision).

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 60417, *Graphical symbols for use on equipment*, available at <http://www.graphical-symbols.info/equipment>

IEC 61000-4-39:2017, *Electromagnetic compatibility (EMC) – Part 4-39: Testing and measurement techniques – Radiated fields in close proximity – Immunity test*

IEC 62479, *Assessment of the compliance of low-power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)*

IEC 62657-2, *Industrial networks – Coexistence of wireless systems – Part 2: Coexistence management*

ISO 7000, *Graphical symbols for use on equipment*, available at <http://www.graphical-symbols.info/equipment>