IEC 62271-213

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

High-voltage switchgear and controlgear – Part 213: Voltage detecting and indicating system

Appareillage à haute tension – Partie 213: Système détecteur et indicateur de tension

IEC 62271-213:2021-06(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 213: Voltage detecting and indicating system

FOREWORD

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International Standard IEC 62271-213 has been prepared by subcommittee 17C:Assemblies, of IEC technical committee 17: High-voltage switchgear and controlgear.

This first edition cancels and replaces the first edition of IEC 61243-5 published in1997 and the first edition of IEC 62271-206 published in 2011. This edition constitutes a merging of the content of IEC 61243-5 and IEC 62271-206.

This edition includes the following significant technical changes with respect to the previous editions of IEC 61243-5 and IEC 62271-206:

a) an optional output signal is defined to be used for multipurpose use cases;
b) only one *interface* is defined for *voltage detecting and indicating system* (*VDIS*);
c) the measurement of the current carrying capacity of the *voltage limiting element* is considered as inaccurate and is not considered in this document. Experience shows that the probability of failure of the *coupling element* is negligible.

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

FDIS	Report on voting
17C/787/FDIS	17C/794/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/standardsdev/publications.

In this document, the following print types are used:

- Terms defined in Clause 3*: in italic type*.

The reader's attention is drawn to the fact that Annex B lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

A list of all parts in the IEC 62271 series, published under the general title *High-voltage switchgear and controlgear*, can be found on the IEC website.

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,
- replaced by a revised edition, or
- amended.

INTRODUCTION

This part of IEC 62271 has been prepared in accordance with the requirements of IEC 62271-1.

The products designed and manufactured in accordance with this document contribute to the safety of the users, provided they are used by skilled or instructed persons, in accordance with safe methods of work and the instructions for use.

The product covered by this document can have an impact on the environment during some or all stages of its life cycle. These impacts can range from slight to significant, be of short-term or long-term duration, and occur at the global, regional or local level.

IEC 62271-213 does not cover the phase comparison function of IEC 61243-5 which is covered by the new IEC 62271-215. Unless IEC 62271-215 is not published, the relevant subclauses in IEC 61243-5 related to UPCs are applicable.

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 213: Voltage detecting and indicating system

1 Scope

This part of IEC 62271 is applicable to the *voltage detecting and indicating system* (*VDIS*) to be installed on indoor and outdoor high-voltage *equipment*.

The *VDIS* as defined by this document includes a *coupling system* per phase (capacitive, resistive coupling or other technology) to connect to live parts (*main circuit*).

The *VDIS* is applicable on systems with *nominal voltage*s above 1 kV and service frequencies from 16,7 Hz up to and including 60 Hz. The *VDIS* is used to detect and indicate the presence or absence of *operating voltage*. It is not intended to distinguish between voltage not present (i.e. U < 10 % of *nominal voltage*) and dead circuit state (i.e. U = 0 V).

NOTE 1 The use of a specific means of connection to earth of the *main circuit* (e.g. by an earthing switch) provides the "dead circuit" (U = 0 V) state.

NOTE 2 The *VDIS* has the same threshold values as the voltage presence indicating system (VPIS) (IEC 62271-206) and the voltage detecting system (VDS) (IEC 61243-5) for not indicating presence of voltage and for detecting an absence of *operating voltage*, respectively.

The *VDIS* is fixed on *equipment* such as switchgear and controlgear according to the IEC 62271 series or transformers according to their own standards.

The products designed and manufactured in accordance with this document contribute to the safety of the users, provided they are used by skilled or instructed persons in accordance with safe methods of work and the instructions for use.

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 60060-1, *High-voltage test techniques – Part 1: General definitions and requirements*

IEC 60068-2-1:2007, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2:2007, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-11, *Basic environmental testing procedures – Part 2-11: Tests – Test Ka: Salt mist*

IEC 60068-2-31, *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens*

IEC 60068-2-38, *Environmental testing – Part 2-38: Tests – Test Z/AD: Composite temperature/humidity cyclic test*

IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60352-1, *Solderless connections – Part 1: Wrapped connections; general requirements, test methods and practical guidance*

IEC 60352-2, *Solderless connections – Part 2: Solderless crimped connections – General requirements, test methods and practical guidance*

IEC 60352-5, *Solderless connections – Part 5: Press-in connections – General requirements, test methods and practical guidance*

IEC 60417, *Graphical symbols for use on equipment* (available at http://www.graphical-symbols.info/equipment)

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61010-031:2015, *Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test*
IEC 61010-031:2015/AMD1:2018

IEC 61210, *Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements*

IEC 62262, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

IEC 62271-1, *High-voltage switchgear and controlgear – Part 1: Common specifications for alternating current switchgear and controlgear*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

3.1
active signal
audible or visual phenomenon of the *VDIS* whose presence, absence or variation is considered as representing information on the condition “voltage present” or “voltage not present”