IEC TS 63493-1

Edition 1.0 2025-12

TECHNICAL SPECIFICATION

Transformer bushings dimensional standardization -
Part 1: Medium voltage bushings with U_m from 12 kV up to and including 52 kV and I_r from 630 A up to and including 3 150 A

ICS 29.080.20

ISBN 978-2-8327-0895-8

IEC TS 63493-1:2025-12(en)

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IEC TS 63493-1 has been prepared by subcommittee SC 36A: Insulated bushings, of IEC technical committee TC 36: Insulators. It is a Technical Specification.

The text of this Technical Specification is based on the following documents:

Draft	Report on voting
36A/270/DTS	36A/273/RVDTS

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 Technical Specification is English.

A list of all parts in the IEC 63493 series, published under the general title *Transformer bushings dimensional standardization*, can be found on the IEC website.

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– withdrawn, or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.

INTRODUCTION

The scope of this part of IEC 63493 is to facilitate interchangeability or at least to define some frame conditions (this is not intended to be a mandatory document).

Standardization of bushings would bring several benefits, among which:

– decreasing the number of products to be developed, tested and maintained;
– leveraging economy of scale with an overall positive effect on product cost and quality;
– reducing inventories and lead times;
– simplifying the purchasing process;
– enabling the interchangeability of bushings produced by different manufacturers;
– facilitating retrofitting of old products with new ones based on more advanced technologies;
– etc.

This document deals with a specific typology of medium voltage bushings.

1 Scope

This part of IEC 63493, which is a Technical Specification, specifies the main parameters to facilitate interchangeability or at least to define some frame conditions of MV bushings:

– with U_m from 12 kV up to and including 52 kV;

– I_r from 630 A up to and including 3 150 A.

This document deals with non-capacitance graded bushings for Power Transformers, according to the IEC 60076 series (usually for transformer with conservator).

In this document only liquid to air bushings are considered. Bushings of liquid-to-liquid and air-to-air type and bushings for transformers with air-cushion in tank are not considered.

MV is considered up to 52 kV; this value is used to cover specific insulation levels or for high pollution levels, even if the field of application is very restricted.

Both solutions with external insulation in porcelain and polymeric can be used and need to enable interchangeability (in terms of mechanical and electrical performance).

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 60076-3, *Power transformers - Part 3: Insulation levels, dielectric tests and external clearances in air*

IEC 60137:2017, *Insulated bushings for alternating voltages above 1 000 V*

IEC TS 60815 (all parts), *Selection and dimensioning of high-voltage insulators intended for use in polluted conditions*