

Plug-in type bushings above 1 kV up to 52 kV and from 250 A to 2,50 kA for equipment other than liquid filled transformers

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 50181:2010 sisaldab Euroopa standardi EN 50181:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.10.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 09.07.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 50181:2010 consists of the English text of the European standard EN 50181:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 09.07.2010.

The standard is available from Estonian standardisation organisation.

ICS 29.080.20

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: 605 5050; E-mail: info@evs.ee

English version

**Plug-in type bushings above 1 kV up to 52 kV and from 250 A to 2,50 kA
for equipment other than liquid filled transformers**

Traversées embrochables de tensions supérieures à 1 kV jusqu'à 52 kV et de 250 A à 2,50 kA pour équipements autres que transformateurs à remplissage de liquide

Steckbare Durchführungen über 1 kV bis 52 kV und von 250 A bis 2,50 kA für Anlagen anders als flüssigkeitsgefüllte Transformatoren

This European Standard was approved by CENELEC on 2010-07-01. 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 Central Secretariat 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 Central Secretariat 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

This European Standard was prepared by the Technical Committee CENELEC TC 36A, Insulated bushings.

It was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50181 on 2010-07-01.

This document supersedes EN 50181:1997.

The main technical changes on the Plug-in type bushings are:

- Enlarge the scope of the voltage class from the plug-in bushings from 36 kV to 52 kV;
- Upgrading the current capacity of the existing defined bushings;
- Introduce a new bushing interface for 52 kV.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- | | | |
|--|-------|------------|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2011-07-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2013-07-01 |

This document is a preview generated by EVS

Introduction	4
1 Scope	4
2 Normative references	4
3 Definitions	4
4 Requirements	5
4.1 Application	5
4.2 Standard values of maximum voltage (U_m)	5
4.3 Standard values of rated current (I_r)	5
4.4 Compliance	5
4.5 Bushing mounting distance	5
4.6 Detail dimensions of plug-in type bushings	5
Figures	
Figure 1 - Interface dimensions of outside cone plug-in type bushings	6
Figure 2 - Bushing details of outside cone plug-in type bushings	7
Figure 3 - Outer dimensions of inside cone plug-in type bushings	9
Figure 4 - Interface details of inside cone plug-in type bushings	10
Tables	
Table 1 - Interface dimensions	6
Table 2 - Bushing dimensions	8
Table 3 - Bushing dimensions	9
Table 4 - Interface dimensions	11

Introduction

The object of this European Standard is to specify the requirements to ensure interchangeability of bushings for maximum voltages above 1 kV up to 52 kV and rated currents from 250 A to 2 500 A for equipment other than insulating liquid filled transformers.

1 Scope

This European Standard is applicable to insulated bushings for maximum voltages above 1 kV up to 52 kV, rated currents from 250 A up to 2 500 A and frequencies from 15 Hz up to 60 Hz for equipment other than liquid filled transformers.

This European Standard establishes essential dimensions, to ensure adequate mounting and interchangeability of mating plug-in separable connectors of equivalent ratings.

2 Normative references

The following referenced documents are indispensable for the application 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 60137, *Insulated bushings for alternating voltages above 1 000 V*

IEC Guide 109 and Cenelec TC 111X document ¹⁾, *Environmental aspects – Inclusion in electrotechnical product standards*

NOTE It is highly recommended to minimize the impact of bushings on the environment during all phases of their life (including manufacturing, operation during service life, dismantling after their end of life and disposal or recycling).

IEC Guide 109 and document by CENELEC TC 111X, *Environmental standardization for electrical and electronic products and systems* after finalization can be used as helpful reference.

3 Terms and definitions

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

3.1

plug in type bushing

bushing one end of which is immersed in an insulating medium which has customized dimensions according to insulation requirements for the specific application and the other end designed to receive a separable insulated cable connector without which the bushing cannot function

3.2

separable connector

fully insulated termination permitting the connection and disconnection of the cable to and from the mating plug-in type bushing

3.3

interface type

bushing dimensions that insure mechanical and electrical interchangeability of bushing and separable connector of similar rating and type

NOTE Each interface type is designed by a letter or a number.

3.4

bail holder

fixture which facilitates anchoring of an externally mounted device (called the bail) designed to prevent undesirable separation of a separable connector and a bushing

¹⁾ Under development.