

Three-phase oil-immersed distribution transformers 50 Hz, from 50 kVA to 2 500 kVA with highest voltage for equipment not exceeding 36 kV -- Part 2-1: Distribution transformers with cable boxes on the high-voltage and/or low-voltage side - General requirements

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| <p>Käesolev Eesti standard EVS-EN 50464-2-1:2007 sisaldab Euroopa standardi EN 50464-2-1:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 19.06.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p> | <p>This Estonian standard EVS-EN 50464-2-1:2007 consists of the English text of the European standard EN 50464-2-1:2007.</p> <p>This document is endorsed on 19.06.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p> |
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| <p>Käsitlusala: EN 50464-2-1 covers, in conjunction with EN 50464-1, distribution transformers under iii) and iv) above, up to 36 kV (the data from 24 kV to 36 kV are under consideration). Further documents exist which may be used by agreement between purchaser and manufacturer for cable boxes and enclosures. The dimensional requirements for cable boxes and protective enclosures are not enclosed in this document.</p> | <p>Scope: EN 50464-2-1 covers, in conjunction with EN 50464-1, distribution transformers under iii) and iv) above, up to 36 kV (the data from 24 kV to 36 kV are under consideration). Further documents exist which may be used by agreement between purchaser and manufacturer for cable boxes and enclosures. The dimensional requirements for cable boxes and protective enclosures are not enclosed in this document.</p> |
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ICS 29.180

Võtmesõnad: definitions, dimensioning, dimensions, distribution transformers, electric connectors, equipment, junction boxes, oil bath transformers, oil-immersed transformers, ratings, specification (approval), specifications, three-phase transformers, transformers, voltage

English version

**Three-phase oil-immersed distribution transformers
50 Hz, from 50 kVA to 2 500 kVA with highest voltage
for equipment not exceeding 36 kV -
Part 2-1: Distribution transformers with cable boxes
on the high-voltage and/or low-voltage side -
General requirements**

Transformateurs triphasés de distribution
immergés dans l'huile,
50 Hz, de 50 kVA à 2 500 kVA,
de tension la plus élevée
pour le matériel ne dépassant pas 36 kV -
Partie 2-1: Transformateurs de distribution
raccordés par boîtes à câble côté haute
tension et/ou côté basse tension -
Prescriptions générales

Ölgefüllte
Drehstrom-Verteilungstransformatoren
50 Hz, 50 kVA bis 2 500 kVA,
mit einer höchsten Spannung
für Betriebsmittel bis 36 kV -
Teil 2-1: Verteilungstransformatoren
mit Kabelanschlusskästen auf der
Ober- und/oder Unterspannungsseite -
Allgemeine Anforderungen

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the Harmonization Document HD 428.2.1 S1:1994, prepared by the Technical Committee CENELEC TC 14, Power transformers, was submitted to the formal vote for conversion into a European Standard and was approved by CENELEC as EN 50464-2-1 on 2006-12-01.

The following date was 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) 2007-12-01

The EN 50464 series consists of the following parts, under the general title “Three-phase oil-immersed distribution transformers 50 Hz, from 50 kVA to 2 500 kVA with highest voltage for equipment not exceeding 36 kV”:

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| Part 1 | General requirements |
| Part 2-1 | Distribution transformers with cable boxes on the high-voltage and/or low-voltage side – General requirements |
| Part 2-2 | Distribution transformers with cable boxes on the high-voltage and/or low-voltage side – Cable boxes type 1 for use on distribution transformers meeting the requirements of EN 50464-2-1 |
| Part 2-3 | Distribution transformers with cable boxes on the high-voltage and/or low-voltage side – Cable boxes type 2 for use on distribution transformers meeting the requirements of EN 50464-2-1 |
| Part 3 | Determination of the power rating of a transformer loaded with non-sinusoidal currents |
| Part 4 | Requirements and tests concerning pressurised corrugated tanks |

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Introduction

EN 50464-1, Subclause 4.3 states that a distribution transformer could have different termination features.

The following constructional situations are possible.

- i) Termination in open type (oil-air) bushings without protection. This is covered by EN 50464-1, EN 50180, EN 50386 and EN 50387.
- ii) Termination in plug-in type bushings of inside or outside cone type. This is covered by EN 50464-1 and EN 50180.
- iii) Termination in air filled or compound filled cable boxes or protective enclosure using open type and/or oil/compound oil-oil bushings, as defined in EN 50464-2-2.
- iv) Flange boxes and similar solutions using open type bushings can also be used.

1 Scope

EN 50464-2-1 covers, in conjunction with EN 50464-1, distribution transformers under iii) and iv) above, up to 36 kV (the data from 24 kV to 36 kV are under consideration). Further documents exist which may be used by agreement between purchaser and manufacturer for cable boxes and enclosures. The dimensional requirements for cable boxes and protective enclosures are not enclosed in this document.

2 Definitions

For the purposes of this document, distribution transformers shall be classified according to the following definitions:

2.1

transformers with cable boxes, side mounted

transformer with electrical characteristics in the range defined in EN 50464-1, with facings on the transformer tank side for provision of cable boxes Type 1. These facings shall be on opposite sides of the transformer (as Figure 1)

2.2

transformers with cable boxes or similar, cover mounted

transformer with electrical characteristics in the range defined in EN 50464-1, with terminations mounted on the tank cover. The terminations exit in such a way as to provide for cables on opposite sides of the transformer. The type of termination can be either cable box Type 1 or cable box Type 2 (as per Figures 3 or 4)

2.3

unit substation transformer, side mounted

transformer with electrical characteristics in the range defined in EN 50464-1, having facings on the transformer tank side for provision of HV switchgear and LV equipment. These facings shall be on the same side of the transformer (as per Figure 2)

2.4

unit substation transformer, cover mounted

transformer with electrical characteristics in the range defined in EN 50464-1, with terminations mounted on the tank cover and enclosed in a flange box. Figure 5 shows a typical arrangement, however, dimension should be agreed between manufacturer and purchaser

2.5

cable boxes, Type 1

metallic box designed for receiving and protecting the ends of HV or LV cables so that the cable dielectric may be effectively sealed against moisture damage. A minimum protection of IP54 is required. These boxes are not specified in this section. A higher protection, IP65, may be necessary to satisfy termination requirements

2.6

cable boxes, Type 2

metallic or non metallic enclosure designed to prevent accidental contact with live parts. The enclosure can be common to HV and LV terminations or be independent for HV and LV. A protection between IP33 and IP55 is required and is subject to agreement between manufacturer and purchaser