

Medium power transformers 50 Hz, with highest voltage for equipment not exceeding 36 kV - Part 2: Transformers with cable boxes on the high-voltage and/or low-voltage side - General requirements for transformers with rated power less than or equal to 3 150 kVA

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 50588-2:2018 sisaldab Euroopa standardi EN 50588-2:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 50588-2:2018 consists of the English text of the European standard EN 50588-2:2018.
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English Version

**Medium power transformers 50 Hz, with highest voltage for equipment not exceeding 36 kV - Part 2: Transformers with cable boxes on the high-voltage and/or low-voltage side - General requirements for transformers with rated power less than or equal to 3 150 kVA**

Transformateurs 50 Hz de moyenne puissance, de tension la plus élevée pour le matériel ne dépassant pas 36 kV - Partie 2: Transformateurs raccordés par boîtes à câble côté haute tension et/ou côté basse tension - Prescriptions générales pour les transformateurs avec une puissance égale ou inférieure à 3150kVA

Mittelleistungstransformatoren 50 Hz, mit einer höchsten Spannung für Betriebsmittel nicht über 36 kV - Teil 2: Verteiltransformatoren mit Kabelanschlusskästen auf der Ober- und/oder Unterspannungsseite -Allgemeine Anforderungen für Transformatoren mit Bemessungsleistungen bis einschliesslich 3150 kVA

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
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## European foreword

This document (EN 50588-2:2018) has been prepared by CLC/TC 14, "Power Transformers".

The following dates are fixed:

- latest date by which this document has to be (dop) 2018-12-25  
implemented at national level by publication of  
an identical national standard or by  
endorsement
- latest date by which the national standards (dow) 2020-12-25  
conflicting with this document have to  
be withdrawn

This document supersedes EN 50464-2-1:2007.

The EN 50588 series consists of the following parts, under the general title "Medium power transformers 50 Hz, with highest voltage for equipment not exceeding 36 kV":

- Part 1: General requirements
- Part 2: Transformers with cable boxes on the high-voltage and/or low-voltage side – General requirements for transformers with rated power less than or equal to 3150kVA
- Part 3: 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 50588-2
- Part 4: 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 50588-2

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

## Introduction

EN 50588-1:2017, 10.1.3 states that a medium power 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 50588-1, 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 50588-1 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 50588-3.
- iv) Flange boxes and similar solutions using open type bushings can also be used.

## 1 Scope

EN 50588-2 covers, in conjunction with EN 50588-1, transformers under iii) and iv) above, up to 36 kV (the data from 24 kV to 36 kV are under consideration) and for transformers with rated power less than or equal to 3150kVA. 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 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.

EN 50588-1:2017, *Medium power transformers 50Hz, with highest voltage for equipment not exceeding 36 kV – part 1: General requirements*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. Requirements for transformers in the scope of this document shall be classified according to the following definitions:

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

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

### 3.1

#### **transformers with cable boxes, side mounted**

transformer with electrical characteristics in the scope of this document, with facings on the transformer tank side for provision of cable boxes Type 1. These facings shall be on opposite sides of the transformer (see Figure 1)

### 3.2

#### **transformers with cable boxes or similar, cover mounted**

transformer with electrical characteristics in the scope of this document, 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)

### 3.3

#### **unit substation transformer, side mounted**

transformer with electrical characteristics in the scope of this document, 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)

### 3.4

#### **unit substation transformer, cover mounted**

transformer with electrical characteristics in the scope of this document, 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

### 3.5

#### **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