



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 50464-2-2:2007

ICS 29.180

**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 2-2:  
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**

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EUROPEAN STANDARD

**EN 50464-2-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2007

ICS 29.180

English version

Supersedes HD 428.2.2 S1:1997

**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 2-2: 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**

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 2-2: Transformateurs de distribution  
raccordés par boîtes à câble côté haute  
tension et/ou côté basse tension -  
Boîtes à câbles de type 1 pour utilisation  
sur transformateurs de distribution  
conformes aux exigences  
de la EN 50464-2-1

Ölgefüllte  
Drehstrom-Verteilungstransformatoren  
50 Hz, 50 kVA bis 2 500 kVA,  
mit einer höchsten Spannung  
für Betriebsmittel bis 36 kV -  
Teil 2-2: Verteilungstransformatoren  
mit Kabelanschlusskästen auf der  
Ober- und/oder Unterspannungsseite -  
Kabelanschlusskästen Typ 1  
für Verteilungstransformatoren  
nach EN 50464-2-1

This European Standard was approved by CENELEC on 2006-12-01. 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, 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

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

## Foreword

The text of the Harmonization Document HD 428.2.2 S1:1997, 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 50464-2-2 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”:

- |          |   |
|----------|---|
| 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  |

## Contents

1	Scope .....	4
2	Normative references.....	4
3	Definitions.....	4
4	Electrical requirements and clearances .....	5
4.1	General .....	5
4.2	High voltage enclosures .....	7
4.3	Low voltage boxes .....	8
5	Design considerations.....	7
5.1	General.....	8
5.2	Terminal nuts and stems .....	8
5.3	Provision for glanding cables.....	8
5.4	Termination of cables within enclosure .....	8
6	Testing .....	7
6.1	Type tests .....	9
6.2	Routine tests.....	9
7	Earthing of cable boxes .....	8
<b>Figure</b>		
	Figure 1 – Clearance distances .....	5
<b>Table</b>		
	Table 1 – Three phase cable box, Type 1.....	6

## 1 Scope

This European Standard specifies the requirements for cable boxes, Type 1, in which the cable cores are terminated. The cable boxes are suitable for use on transformers defined in EN 50464-2-1, "Distribution Transformers with Cable Boxes", for side mounted or cover mounted use. The cable boxes are suitable for operation indoors and outdoors under environmental conditions specified in EN 50464-1. Important design and construction requirements of the cable boxes are given.

## 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 50180		Bushings above 1 kV up to 36 kV and from 250 A to 3,15 kA for liquid filled transformers
EN 50181	1997	Plug-in type bushings above 1 kV up to 36 kV and from 250 A to 1,25 kA for equipment other than liquid filled transformers
EN 50336	2002	Bushings for transformers and reactor cable boxes not exceeding 36 kV
EN 50386	2002	Bushings up to 1 kV and from 250 A to 5 kA, for liquid filled transformers
EN 50387	2002	Busbar bushings up to 1 kV and from 1,25 kA to 5 kA, for liquid filled transformers
EN 60076	series	Power transformers (IEC 60076 series, partially modified)
EN 60529	1993	Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)

## 3 Definitions

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

### 3.1

#### **fully insulated cable box**

metallic cable box where those parts of the termination and bushing within the enclosure including live metal parts and cable cores are insulated by oil or compound and allowance made for thermal expansion

The box is suitably sealed to contain the oil or compound and allows for their expansion due to temperature changes

### 3.2

#### **air filled cable box**

metallic cable box designed to protect the ends of the cables and bushings, providing a weatherproof enclosure with a minimum rating of IP54

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