

**Transformatorer –  
Oljeisolerade distributionstransformatorer –  
Del 1: Allmänna fordringar och fordringar på  
transformatorer för högst 24 kV**

*Three-phase oil-immersed distribution transformers 50 Hz, from 50 to 2500 kVA,  
with highest voltage for equipment not exceeding 36 kV –  
Part 1: General requirements and requirements for transformers with highest voltage  
for equipment not exceeding 24 kV*

Denna svenska standard innehåller den engelska språkversionen av CENELECs harmoniseringsbeslut redovisat i HD 428.1 S1, 1992, inklusive Amendment No. 1, 1995.

Tidigare utgiven svensk standard SS 427 02 01, utgåva 3, 1984, gäller ej fr o m 1995-09-29.

Förhållandet mellan de harmoniseringsdokument som omnämns i de olika delarna av HD 428 och svenska transformatorstandarder framgår av sammanställningen nedan.

Harmoniseringsdokument	Motsvarande svensk standard
HD 428 (flera delar)	SS 427 02 01 (flera delar)
HD 398.1	SS 427 01 01
HD 398.3	ej överförd
HD 472	SS 421 05 01
HD 506	SS 427 07 17
HD 538 (flera delar)	SS 427 02 08 (flera delar)
prHD 596 (förslag *)	
prHD 607 (förslag *)	

\*) Ej överförda vid tidpunkten för denna standards fastställelse.



UDC 621.314.212:621.3.025.3.026.645/.647

Supersedes HD 428 S1:1983 + A1:1990

Descriptors: Distribution transformers, electrical characteristics,  
dimensions, impedance voltage, losses, rollers, sound levels

## ENGLISH VERSION

Three phase oil-immersed distribution transformers  
50 Hz, from 50 to 2500 kVA with highest voltage  
for equipment not exceeding 36 kV  
Part 1: General requirements and requirements for  
transformers with highest voltage for equipment  
not exceeding 24 kV

Transformateurs triphasés de  
distribution immergés dans  
l'huile, 50 Hz, de 50 à 2500 kVA,  
la tension la plus élevée pour le  
matériel ne dépassant pas 36 kV  
Partie 1: Prescriptions  
générales et prescriptions pour  
les transformateurs avec une  
tension la plus élevée pour le  
matériel ne dépassant pas 24 kV

Drehstromverteilungstransformatoren der Energieversorgung, mit Ölfüllung, 50 Hz, 50 - 2500 kVA, mit einer höchsten Spannung für Betriebsmittel kleiner oder gleich 36 kV  
Teil 1: Allgemeine Anforderungen und Anforderungen für Transformatoren mit einer höchsten Spannung für Betriebsmittel kleiner oder gleich 24 kV

This Harmonization Document was approved by CENELEC on 1992-09-15.  
CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

Up-to-date lists and bibliographical references concerning national implementation may be obtained on application to the Central Secretariat or to any CENELEC member.

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## CENELEC

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

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## FOREWORD

This Harmonization Document was prepared by working group WG 3 of CENELEC Technical Committee TC 14, Power transformers.

It was approved by CENELEC as HD 428.1 S1 on 15 September 1992.

This Harmonization Document replaces HD 428 S1:1983 and its amendment A1:1990.

The following dates were fixed:

- latest date of announcement  
of the HD at national level (doa) 1993-03-01
- latest date of publication of  
an identical national standard (dop) 1993-09-01
- latest date of withdrawal of  
conflicting national standards (dow) 1993-09-01

Annexes designated "normative" are part of the body of the standard. Annexes designated "informative" are given only for information. In this standard, annex A (A-deviations) is informative and annex B (normative references) is normative.

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### Statement

This document has been prepared to allow a standardized production in a series of units and to favour the interchange of products within the CENELEC countries and, if applicable, with other countries.

Every standard prepared by National Committees shall be in line with this CENELEC document, as far as the specific field of application is concerned.

This document comes into use as and when indicated in the tender and contractual documents.

When for special applications particular characteristics are required outside the standard features, the transformers can be specified and ordered individually in accordance with HD 398.

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## 1. GENERAL

### 1.1 Scope

This harmonization document covers transformers from 50 to 2500 kVA intended for operation in three-phase distribution networks, for indoor or outdoor continuous service, 50 Hz, immersed in mineral-oil, natural cooling, with two windings:

- a primary (high-voltage) winding with a highest voltage for equipment from 3,6 to 24 kV,
- a secondary (low-voltage) winding with a highest voltage for equipment not exceeding 1,1 kV.

NOTE 1: This document may be applied, either as a whole or in part, to transformers immersed in a synthetic insulating liquid.

NOTE 2: This document may be applied, either as whole or in part, to transformers having windings with more than one rated voltage. In this case the rated power for each rated voltage shall be specified by the purchaser.

NOTE 3: Oil-immersed transformers with other highest voltages for equipment could be matter of other parts of HD 428 series.

### 1.2 Object

The object of this document is to lay down requirements related to electrical characteristics, dimensions and design. Other requirements may be specified in a National Standard.

### 1.3 Compliance with current harmonization documents

Transformers shall be in accordance with harmonization documents of the HD 398 series.