



**SLOVENSKI STANDARD**  
**SIST EN IEC 60076-22-4:2019**

**01-november-2019**

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**Hladilna oprema za močnostne transformatorje in dušilke – 22-4. del: Toplotni izmenjevalniki izolacijska tekočina-voda (olje-voda)**

Power transformer and reactor cooling equipment - Part 22-4: Insulating liquid to water heat exchangers

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**Ta slovenski standard je istoveten z: EN IEC 60076-22-4:2019**

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Transformatorji. Dušilke

Transformers. Reactors

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN IEC 60076-22-4**

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English Version

**Power transformers - Part 22-4: Power transformer and reactor fittings - Insulating liquid to water heat exchangers (IEC 60076-22-4:2019)**

Transformateurs de puissance - Partie 22-4: Accessoires pour transformateurs de puissance et bobines d'inductance - Hydroréfrigérants (IEC 60076-22-4:2019)

Leistungstransformatoren und Drosselspulen Kühlungseinrichtung - Teil 22-4: Isolierte Flüssigkeit-Wasser-Wärmetauscher (IEC 60076-22-4:2019)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 60076-22-4:2019 (E)****European foreword**

The text of document 14/996/FDIS, future edition 1 of IEC 60076-22-4, prepared by IEC/TC 14 "Power transformers" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60076-22-4:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-01-12
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-04-12

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60076-6	NOTE	Harmonized as EN 60076-6
ISO 3506-1	NOTE	Harmonized as EN ISO 3506-1
ISO 9001	NOTE	Harmonized as EN ISO 9001

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60076-1	-	Power transformers - Part 1: General	EN 60076-1	-
IEC 60076-7	-	Power transformers - Part 7: Loading guide for oil-immersed power transformers	-	-
IEC 60296	-	Fluids for electrotechnical applications - Unused mineral insulating oils for transformers and switchgear	EN 60296	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
ISO 4406	-	Hydraulic fluid power - Fluids - Method for coding the level of contamination by solid particles	-	-
ISO 12944	series	Paints and varnishes - Corrosion protection of steel structures by protective paint systems	EN ISO 12944	series

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IEC 60076-22-4

Edition 1.0 2019-03

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Power transformers –  
Part 22-4: Power transformer and reactor fittings – Insulating liquid to water  
heat exchangers**

**Transformateurs de puissance –  
Partie 22-4: Accessoires pour transformateurs de puissance et bobines  
d'inductance – Hydroréfrigérants**

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## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references .....	7
3 Terms and definitions .....	7
4 General requirements .....	8
4.1 Service conditions.....	8
4.2 Performance requirements.....	8
4.3 Degree of protection of electrical components (IP).....	8
4.4 Corrosion protection .....	8
4.4.1 External (atmosphere) .....	8
4.4.2 Insulating liquid side .....	9
4.4.3 Water side .....	9
4.5 Insulating liquid characteristics .....	9
5 Design and characteristics.....	9
5.1 General.....	9
5.2 Main components and characteristics .....	9
5.2.1 General.....	9
5.2.2 Shell.....	9
5.2.3 Tube bundle in double tube arrangement.....	9
5.2.4 Headers.....	10
5.3 General characteristics .....	10
5.3.1 Rating plate information.....	10
5.3.2 Information to be provided with enquiry and order.....	10
5.3.3 Rated cooling capacity.....	11
5.3.4 Mechanical design .....	11
5.3.5 Preparation for transport and storage .....	13
5.3.6 Mounting and operating conditions .....	14
6 Tests .....	14
6.1 General requirements for tests.....	14
6.1.1 General .....	14
6.1.2 List of tests.....	14
6.2 Routine tests.....	15
6.2.1 Tightness test insulating liquid side .....	15
6.2.2 Tightness test water side .....	15
6.2.3 Visual inspection .....	15
6.2.4 Cleanliness.....	15
6.3 Type tests – Rated values test.....	15
Annex A (informative) Details of the heat exchangers .....	16
A.1 Masses and dimensions.....	16
A.2 Collection and forms of suspensory types .....	16
A.3 Collection and forms of horizontal types.....	17
A.4 Collection and forms of vertical standing types.....	18
A.5 Parts list – Materials – Common selection of materials.....	19
A.6 Example for fresh water .....	20



Annex B (informative) Rating conditions of the heat exchangers .....	21
B.1 General.....	21
B.2 Definitions, symbols.....	21
B.3 Calculation of capacity in service .....	21
B.3.1 Service capacity for different temperatures at inlet according to Figure B.1 .....	21
B.3.2 Service capacity for different mass flows according to Figure B.2 for plain tubes and according to Figure B.3 for finned tubes.....	21
B.3.3 Service capacity for different mass flows and different temperatures .....	22
B.3.4 Example for calculation of 25 % capacity margin of new heat exchangers.....	22
Annex C (informative) Example for calculation of capacity in service .....	26
Bibliography.....	28
Figure A.1 – Collection and forms of suspensory types .....	16
Figure A.2 – Collection and forms of horizontal types.....	17
Figure A.3 – Collection and forms of vertical standing types .....	18
Figure B.1 – Capacity factor depending on inlet temperatures of oil and water.....	23
Figure B.2 – Capacity factor depending on mass for plain tubes .....	24
Figure B.3 – Capacity factor depending on mass for finned tubes .....	25
Table 1 – Water quality data .....	12
Table 2 – Mandatory fittings.....	13
Table A.1 – Examples of material selection depending on water quality.....	20
Table A.2 – Average values for chemically neutral water (fresh water).....	20

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## POWER TRANSFORMERS –

**Part 22-4: Power transformer and reactor fittings –  
Insulating liquid to water heat exchangers**

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International Standard IEC 60076-22-4 has been prepared by IEC technical committee 14: Power transformers.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
14/996/FDIS	14/1004/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60076 series, published under the general title *Power transformers*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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## INTRODUCTION

Under the part title “Power transformer and reactor fittings” this part of IEC 60076-22 covers the insulating liquid to water heat exchangers in the cooling circuits of power transformers and reactors.

Annex B gives guidance to the end user for approximation of the behaviour of the heat exchanger under different operation conditions. Annex C gives an example based on the calculation rules stipulated in Annex B.

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