



**SLOVENSKI STANDARD**  
**SIST EN IEC 60076-22-7:2020**

**01-september-2020**

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**Močnostni transformatorji - 22-7. del: Močnostni transformatorji in dušilke - Pribor**

Power transformers - Part 22-7: Power transformer and reactor fittings - Accessories and fittings

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**Ta slovenski standard je istoveten z: EN IEC 60076-22-7:2020**

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Transformatorji. Dušilke

Transformers. Reactors

**SIST EN IEC 60076-22-7:2020**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN IEC 60076-22-7**

June 2020

ICS 29.180

English Version

**Power transformers - Part 22-7: Power transformer and reactor fittings - Accessories and fittings  
(IEC 60076-22-7:2020)**

Transformateurs de puissance - Partie 22-7:  
Transformateur de puissance et bobines d'inductance -  
Accessoires et équipements  
(IEC 60076-22-7:2020)

Leistungstransformatoren - Teil 22-7: Zubehörteile von  
Leistungstransformatoren und Drosselspulen - Zubehörteile  
und Armaturen  
(IEC 60076-22-7:2020)

This European Standard was approved by CENELEC on 2020-06-11. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

[SIST EN IEC 60076-22-7:2020](https://standards.globalspec.com/std/60076-22-7/2020)

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

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

**EN IEC 60076-22-7:2020 (E)****European foreword**

The text of document 14/1044/FDIS, future edition 1 of IEC 60076-22-7, prepared by IEC/TC 14 "Power transformers" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60076-22-7:2020.

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) 2021-03-11
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-06-11

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The text of the International Standard IEC 60076-22-7:2020 was approved by CENELEC as a European Standard without any modification.

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

IEC 60076-5	NOTE	Harmonized as EN 60076-5
IEC 60076-6	NOTE	Harmonized as EN 60076-6
IEC 60255-5:2000	NOTE	Harmonized as EN 60255-5:2001 (not modified)

## 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 60068-3-3	1991	Environmental testing - Part 3-3: Guidance - Seismic test methods for equipments	EN 60068-3-3	1993
IEC 60068-3-3	2019	Environmental testing - Part 3-3: Supporting documentation and guidance - Seismic test methods for equipment	EN IEC 60068-3-3	2019
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	EN 60076-7	-
IEC 60255-27	-	Measuring relays and protection equipment - Part 27: Product safety requirements	EN 60255-27	-
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)	-	-
IEC 60721-3-4	-	Classification of environmental conditions - Part 3-4: Classification of groups of environmental parameters and their severities - Stationary use at non-weatherprotected locations	EN IEC 60721-3-4	-
ISO 3601-1	-	Fluid power systems - O-rings - Part 1: Inside diameters, cross-sections, tolerances and designation codes	-	-
ISO 7005-1	-	Pipe flanges - Part 1: Steel flanges for industrial and general service piping systems	-	-
ISO 12944-6	-	Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 6: Laboratory performance test methods	EN ISO 12944-6	-

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IEC 60076-22-7

Edition 1.0 2020-05

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Power transformers –  
Part 22-7: Power transformer and reactor fittings – Accessories and fittings**

**Transformateurs de puissance –  
Partie 22-7: Transformateur de puissance et bobines d'inductance – Accessoires  
et équipements**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## POWER TRANSFORMERS –

Part 22-7: Power transformer and reactor fittings –  
Accessories and fittings

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60076-22-7 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
14/1044/FDIS	14/1048/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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## POWER TRANSFORMERS –

### Part 22-7: Power transformer and reactor fittings – Accessories and fittings

#### 1 Scope

This part of IEC 60076-22 applies to a selection of accessories and fittings mounted on liquid immersed power transformers according to IEC 60076-1 and reactors according to IEC 60076-6 with or without conservator for indoor or outdoor installation. It outlines the service conditions and the mechanical requirements that are common to all the accessories and fittings.

This document also outlines the operation requirements specific to each device as well as the preferred dimensions relevant for interchangeability and the type and routine test to be performed.

This document covers an exhaustive selection of the accessories and fittings that are currently used on transformers or reactors.

#### 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.

IEC 60068-3-3:2019, *Environmental testing – Part 3-3: Supporting documentation and guidance – Seismic test methods for equipment*

IEC 60068-3-3:1991, *Environmental testing – Part 3-3: Guidance – Seismic test methods for equipments*

IEC 60076-1, *Power transformers – Part 1: General*

IEC 60076-7, *Power transformers – Part 7: Loading guide for mineral-oil-immersed power transformers*

IEC 60296, *Fluids for electrotechnical applications – Unused mineral insulating oils for transformers and switchgear*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60721-3-4, *Classification of environmental conditions – Part 3-4: Classification of groups of environmental parameters and their severities – Stationary use at non-weatherprotected locations*

IEC 60255-27, *Measuring relays and protection equipment – Part 27: Product safety requirements*

ISO 3601-1, *Fluid power systems – O-rings – Part 1: Inside diameters, cross-sections, tolerances and designation codes*

ISO 7005-1, *Pipe flanges – Part 1: Steel flanges for industrial and general service piping systems*

ISO 12944-6, *Paints and varnishes – Corrosion protection of steel structures by protective paint systems – Part 6: Laboratory performance test methods*

### 3 Terms and definitions

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

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

##### **thermometer pocket**

facility mounted on the transformer or reactor cover or pipework or any liquid filled compartment, intended to house a thermal sensor to measure the insulating liquid temperature

#### 3.2

##### **earthing terminal**

terminal provided on the transformer or reactor tank or cooler support structure or any other part that needs to be grounded and intended for the electric connection with the earthing network

#### 3.3

##### **draining plug**

facility intended to drain the insulating liquid from liquid filled compartments

#### 3.4

##### **air vent**

facility for venting the air or gas trapped within the transformer tank and pipework

#### 3.5

##### **wheel assembly**

device suitable for movement of the transformer in different directions using rails

#### 3.6

##### **dehydrating breather**

device linking the air space at the top of the tank of a liquid immersed transformer with the outside air to absorb the humidity of the breathed air

#### 3.7

##### **butterfly valve**

device designed to isolate any component or accessory mounted on the transformer liquid system

#### 3.8

##### **junction terminal box**

device designed to make low-voltage, low-current, insulated and liquid-tight electrical connections between the inside and outside of a liquid filled compartment

#### 3.9

##### **sampling valve**

device used to take samples of the insulating liquid