SLOVENSKI STANDARD
SIST EN 14511-1:2022

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Nadomešča:
SIST EN 14511-1:2018

Klimatske naprave, enote za hlajenje kapljevine, toplotne črpalke za ogrevanje in hlajenje prostora ter procesne hladilne naprave z električnimi kompresorji - 1. del: Izrazi in definicije

Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors - Part 1: Terms and definitions

Luftkonditionierer, Flüssigkeitskühlsätze und Wärmepumpen für die Raumbeheizung und -kühlung und Prozess-Kühler mit elektrisch angetriebenen Verdichtern - Teil 1: Begriffe

Climatiseurs, groupes refroidisseurs de liquide et pompes à chaleur pour le chauffage et le refroidissement des locaux et refroidisseurs industriels avec compresseur entraîné par moteur électrique - Partie 1 : Termes et définitions

Ta slovenski standard je istoveten z: **EN 14511-1:2022**

ICS:

01.040.23	Tekočinski sistemi in sestavni deli za splošno rabo (Slovarji)	Fluid systems and components for general use (Vocabularies)
23.120	Zračniki. Vetrniki. Klimatske naprave	Ventilators. Fans. Air-conditioners
27.080	Toplotne črpalke	Heat pumps
91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air-conditioning systems

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14511-1

September 2022

ICS 01.040.27; 01.040.91; 27.080; 91.140.30

Supersedes EN 14511-1:2018

English Version

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This European Standard was approved by CEN on 10 July 2022.

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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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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European foreword

This document (EN 14511-1:2022) has been prepared by Technical Committee CEN/TC 113 “Heat pumps and air conditioning units”, the secretariat of which is held by UNE.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

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

This document supersedes EN 14511-1:2018.

The main changes compared with EN 14511-1:2018 are as follows:

— reorganization of definitions (in alphabetical order);

— deletion of Annex ZA on the relationship with Commission Regulation (EU) No 206/2012.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

This document has been prepared in the frame of:

— Commission Regulation (EU) No 206/2012 of 6 March 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for air conditioners and comfort fans;

— Commission Delegated Regulation (EU) No 626/2011 of 4 May 2011 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of air conditioners;

— Commission Regulation (EU) No 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters;

— Commission Delegated Regulation (EU) No 811/2013 of 18 February 2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device;

— Commission Regulation (EU) 2015/1095 of 5 May 2015 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for professional refrigerated storage cabinets, blast cabinets, condensing units and process chillers;

— Commission Regulation (EU) 2016/2281 of 30 November 2016 implementing Directive 2009/125/EC of the European Parliament and of the Council establishing a framework for the setting of ecodesign requirements for energy-related products, with regard to ecodesign requirements for air heating products, cooling products, high temperature process chillers and fan coil units.

EN 14511, *Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors*, currently comprises the following parts:

— *Part 1: Terms and definitions*;

— *Part 2: Test conditions*;

— *Part 3: Test methods*;

— *Part 4: Requirements*.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

1 Scope

This document specifies the terms and definitions for the rating and performance of air conditioners, liquid chilling packages and heat pumps using either air, water or brine as heat transfer media, with electrically driven compressors when used for space heating and/or cooling.

It also specifies the terms and definitions for the rating and performance of process chillers.

This document does not apply to heat pumps for domestic hot water, although certain definitions can be applied to these.

This document applies to:

— factory-made units that can be ducted,

— factory-made liquid chilling packages with integral condensers or for use with remote condensers, and

— air-to-air air conditioners which can also evaporate the condensate on the condenser side.

Packaged units, single split and multisplit systems are covered by this document. Single duct and double duct units are covered by this document, as well.

In the case of units consisting of several parts, this document applies only to those designed and supplied as a complete package, except for liquid chilling packages with remote condenser.

This document is primarily intended for water and brine chilling packages but can be used for other liquid subject to agreement.

The units having their condenser cooled by air and by the evaporation of external additional water will have their performance in the cooling mode determined in accordance to EN 15218. For those which can also operate in the heating mode, the EN 14511 series applies for the determination of their performance in the heating mode.

NOTE 1 Part load testing of units is dealt with in EN 14825.

NOTE 2 All the symbols given in this text are used regardless of the language.

2 Normative references

There are no normative references in this document.

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:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
air conditioner
device capable of cooling or heating, or both, indoor air, using a vapour compression cycle driven by an electric compressor, including air conditioners that provide additional functionalities such as dehumidification, air purification, ventilation or supplemental air heating by means of electric resistance heating, as well as appliances that are using water (either condensate water that is formed on the

evaporator side or externally added water) for evaporation on the condenser, provided that the device is also able to function without the use of additional water, using air only

Note 1 to entry: Appliances using additional external water are rated according to EN 15218.

3.2
application rating condition
rating condition which provides additional information on the performance of the unit within its operating range, where applicable

3.3
available external static pressure difference
Δp_e
positive pressure difference measured between the air (or water) outlet section and the air (or water) inlet section of the unit, which is available for overcoming the pressure drop of any additional ducted air (or water) circuit

Note 1 to entry: Expressed in Pa.

3.4
brine
heat transfer medium that has a freezing point lower than the freezing point of water

3.5
close control air conditioner
air conditioner to satisfy the requirements of the process carried out in the air conditioned room

3.6
coefficient of performance
COP
ratio of the heating capacity to the effective power input of the unit

Note 1 to entry: Expressed in kW/kW.

3.7
comfort chiller
liquid chilling package whose indoor heat exchanger extracts heat from a water-based cooling system designed to operate at leaving chilled water temperatures greater than or equal to 2° C

3.8
control cabinet air conditioner
air conditioner to satisfy the requirements of the control cabinet

3.9
cooling capacity
P_C
heat given off from the heat transfer medium to the unit per unit of time, corrected from any fan or pump heat where applicable

Note 1 to entry: Expressed in kW.

Note 2 to entry: For air to air and water(brine) to air units, cooling capacity is the total cooling capacity i.e. sum of latent and sensible cooling capacities.

3.10
defrost mode
state of the unit in the heating mode where the operation is modified in order to defrost the outdoor air heat exchanger

3.11
defrost period
time for which the unit is in the defrost mode

3.12
double-duct air conditioner
air conditioner in which, during cooling (or heating), the condenser (or evaporator) intake air is introduced from the outdoor environment to the unit by a duct and rejected to the outdoor environment by a second duct, and which is placed wholly inside the space to be conditioned

3.13
dry motor pump
pump with a motor which is cooled by the ambient air

3.14
effective power input
P_E
average electrical power input of the unit within the defined interval of time, obtained from:

— power input for operation of the compressor and any power input for defrosting;

— power input for all control and safety devices of the unit;

— proportional power input of the conveying devices (e.g. fans, pumps) for ensuring the transport of the heat transfer media inside the unit

Note 1 to entry: Expressed in kW.

3.15
energy efficiency ratio
EER
ratio of the total cooling capacity to the effective power input of the unit

Note 1 to entry: Expressed in kW/kW.

3.16
exhaust air
air from the air conditioned space entering the outdoor heat exchanger

3.17
glandless circulator
circulator with the rotor directly coupled to the impeller and the rotor immersed in the pumped medium

3.18
glide
difference between dew point temperature and bubble point temperature at a given pressure

Note 1 to entry: Expressed in K.

3.19
heat pump
encased assembly or assemblies designed as a unit, using a vapour compression cycle driven by an electric compressor, to provide delivery of heat

Note 1 to entry: It can have means for cleaning and dehumidifying the air, circulating and cooling. The cooling is by means of reversing the refrigerating cycle.

3.20
heat recovery
recovery of heat rejected by the unit whose primary control is in the cooling mode by means of either an additional heat exchanger (e.g. a liquid chiller with an additional condenser) or by transferring the heat through the refrigerating system for use to unit whose primary control remains in the heating mode (e.g. variable refrigerant flow)

3.21
heat recovery capacity
P_{HR}
heat removed by the heat transfer medium of the heat recovery heat exchanger per unit of time, corrected from any fan or pump heat where applicable

Note 1 to entry: This applies only to heat recovery liquid chilling packages.

Note 2 to entry: Expressed in kW.

3.22
heat recovery efficiency
HRE
ratio of the total capacity of the system (heating plus cooling capacity) to the effective power input when operating in the heat recovery mode

Note 1 to entry: Expressed in kW/kW.

3.23
heat recovery heat exchanger
heat exchanger assembly which is designed to transfer heat to the heat recovery medium

3.24
heat recovery liquid chilling package
factory-made liquid chilling package designed for the purpose of chilling liquid and recovering of heat

3.25
heat rejection capacity
heat removed by the heat transfer medium of the condenser per unit of time, corrected from any fan or pump heat where applicable

Note 1 to entry: This applies only to heat recovery liquid chilling packages.

Note 2 to entry: Expressed in kW.