
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

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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: prEN 14511-1

ICS:

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| 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 |
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EUROPEAN STANDARD
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prEN 14511-1

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ICS

Will supersede EN 14511-1:2018

English Version

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

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

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

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 113.

If this draft becomes a European Standard, CEN 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.

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European foreword

This document (prEN 14511-1:2021) has been prepared by Technical Committee CEN/TC 113 “Heat pumps and air conditioning units”, the secretariat of which is held by UNE.

This document is currently submitted to the Enquiry.

This document will supersede EN 14511-1:2018.

This document has been prepared in the frame of:

- the Commission Regulation (EU) No 206/2012 implementing Directive 2009/125/EC with regard to ecodesign requirements for air conditioners;
- the Commission Regulation (EU) n° 626/2011 supplementing Directive 2010/30/EU with regard to energy labelling for air conditioners;
- the Commission Regulation (EU) No 813/2013 implementing Directive 2009/125/EC with regard to ecodesign requirements for air-to-water and water-to-water heat pump space heaters;
- the Commission Regulation (EU) n° 811/2013 supplementing Directive 2010/30/EU with regard to energy labelling for air-to-water and water-to-water heat pump space heaters;
- the Commission Regulation (EU) n° 2015/1095 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for process chillers;
- Commission Regulation (EU) 2016/2281 implementing Directive 2009/125/EC of the European Parliament and of the Council 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*

prEN 14511-1:2021 (E)

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,
- factory-made units of either fixed capacity or variable capacity by any means, 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 the document.

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:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

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 may use 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

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 cooling, circulating, cleaning and dehumidifying the air. The cooling is by means of reversing the refrigerating cycle.

Note 2 to entry: Also known as a reverse cycle air conditioner, when cooling and heating air.

3.3

comfort air conditioner or heat pump

air conditioner or heat pump to satisfy the comfort requirements of the occupants of the air conditioned room

3.4

close control air conditioner

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

3.5

control cabinet air conditioner

air conditioner to satisfy the requirements of the control cabinet

3.6

packaged unit

factory assembly of components of refrigeration system fixed on a common mounting to form a discrete unit

3.7

single split unit

factory assembly of components of refrigeration system fixed on two mountings to form a discrete matched functional unit

prEN 14511-1:2021 (E)**3.8****single-duct air conditioner**

air conditioner in which, during cooling or heating, the condenser (or evaporator) intake air is introduced from the space containing the unit and discharged outside this space

3.9**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, near a wall

3.10**liquid chilling package**

factory-made unit designed to cool liquid, using an evaporator, a refrigerant compressor, an integral or remote condenser and appropriate controls

Note 1 to entry: It may have means for heating which can be reversing the refrigerating cycle, such as a heat pump.

3.11**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

3.12**process chiller**

factory-made product integrating at least one compressor and one evaporator, capable of cooling down and continuously maintaining the temperature of a liquid in order to provide cooling to a refrigerated appliance or to a process cooling system

Note 1 to entry: It may or may not integrate the condenser, the coolant circuit hardware and other ancillary equipment.

3.13**low temperature process chiller**

process chiller that is capable of delivering its rated cooling capacity at an indoor heat exchanger outlet temperature of -25 °C, at standard rating conditions

3.14**medium temperature process chiller**

process chiller that is capable of delivering its rated cooling capacity at an indoor heat exchanger outlet temperature of -8 °C, at standard rating conditions

3.15**high temperature process chiller**

process chiller that is capable of delivering its rated cooling capacity at an outlet chilled water temperature of 7 °C

3.16**heat recovery liquid chilling package**

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

3.17**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)

3.18**indoor heat exchanger**

heat exchanger which is designed to transfer heat between the refrigerant and the indoor heat transfer medium

Note 1 to entry: In the case of an air conditioner or heat pump operating in the cooling mode, this is the evaporator. In the case of an air conditioner or heat pump operating in the heating mode, this is the condenser.

3.19**outdoor heat exchanger**

heat exchanger which is designed to transfer heat between any available heat source and the refrigerant

Note 1 to entry: In the case of an air conditioner or heat pump operating in the cooling mode, this is the condenser. In the case of an air conditioner or heat pump operating in the heating mode, this is the evaporator.

3.20**heat recovery heat exchanger**

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

3.21**heat transfer medium**

medium (water, air...) used for the transfer of the heat without change of state

EXAMPLES Cooled liquid circulating in the evaporator; cooling medium circulating in the condenser; heat recovery medium circulating in the heat recovery heat exchanger.

3.22**exhaust air**

air from the air conditioned space entering the outdoor heat exchanger

3.23**recycled air**

air from the air conditioned space entering the indoor heat exchanger

3.24**outdoor air**

air from the outdoor environment

3.25**water loop**

closed circuit of water maintained within a temperature range on which the units in cooling mode reject heat and the units in heating mode take heat

prEN 14511-1:2021 (E)**3.26****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, water/brine to air units, cooling capacity is the total cooling capacity i.e. sum of latent and sensible cooling capacities.

3.27**latent cooling capacity** P_L

capacity of the unit for removing latent heat from the evaporator intake air

Note 1 to entry: Expressed in kW.

3.28**sensible cooling capacity** P_s

capacity of the unit for removing sensible heat from the evaporator intake air

Note 1 to entry: Expressed in kW.

3.29**heating capacity** P_H

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

Note 1 to entry: If heat is removed from the indoor heat exchanger for defrosting, it is taken into account.

Note 2 to entry: Expressed in kW.

3.30**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.

3.31**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.