

SLOVENSKI STANDARD

SIST EN 14511-1:2004

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Nadomešča:

SIST EN 12055:2001

SIST EN 255-1:2001

SIST EN 814-1:2001

Klimatske naprave, enote za tekočinsko hlajenje in toplotne črpalke z električnimi kompresorji za segrevanje in hlajenje prostora – 1. del: Pojmi in definicije

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

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

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Climatiseurs, groupes refroidisseurs de liquide et pompes a chaleur avec compresseur entraîné par moteur électrique pour le chauffage et la réfrigération - Partie 1 : Termes et définitions

Ta slovenski standard je istoveten z: EN 14511-1:2004

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

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14511-1

May 2004

ICS 01.040.23; 23.120

Supersedes EN 255-1:1997, EN 814-1:1997, EN 12055:1998

English version

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

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

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

This European Standard was approved by CEN on 30 April 2004.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN 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 CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN 14511-1:2004) has been prepared by Technical Committee CEN/TC 113 "Heat pumps and air conditioning units", the secretariat of which is held by AENOR.

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 November 2004, and conflicting national standards shall be withdrawn at the latest by November 2004.

This document supersedes EN 255-1:1997, EN 814-1:1997, EN 12055:1998.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

This standard consists of the following parts:

- Part 1: Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling - Part 1: Terms and definitions.
- Part 2: Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling - Part 2: Test conditions.
- Part 3: Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling - Part 3: Test methods.
- Part 4: Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling - Part 4: Requirements.

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

EN 14511-1:2004 (E)**1 Scope**

This part of EN 14511 specifies the terms and definitions for the rating and performance of air and water cooled air conditioners, liquid chilling packages, air-to-air, water-to-air, air-to-water and water-to-water heat pumps with electrically driven compressors when used for space heating and/or cooling. This European Standard does not specifically apply to heat pumps for sanitary hot water, although certain definitions can be applied to these.

This European Standard applies to factory-made units that can be ducted.

This standard applies to factory-made liquid chilling packages with integral condensers or for use with remote condensers.

This standard applies to factory-made units of either fixed capacity or variable capacity by any means.

Packaged units, single split and multisplit systems are covered by this standard, except water cooled multisplit systems.

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

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

This standard applies to air-to-air air conditioners which evaporate the condensate on the condenser side.

The units having their condenser cooled by air and by the evaporation of external additional water are not covered by this standard.

This standard does not apply to units using transcritical cycles, e.g. with CO₂ as refrigerant.

Installations used for heating and/or cooling of industrial processes are not within the scope of this standard.

NOTE 1 Part load testing of units is dealt with in CEN/TS 14825.

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

2 Terms and definitions

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

2.1
air conditioner
encased assembly or assemblies designed as a unit to provide delivery of conditioned air to an enclosed space (room for instance) or zone. It includes an electrically operated refrigeration system for cooling and possibly dehumidifying the air.

It can have means for heating, circulating, cleaning and humidifying the air. If the unit provides heating by reversing the refrigerating cycle then it is a heat pump

2.2**heat pump**

encased assembly or assemblies designed as a unit to provide delivery of heat. It includes an electrically operated refrigeration system for heating.

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

2.3**comfort air conditioner or heat pump**

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

2.4**close control air conditioner**

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

2.5**control cabinet air conditioner**

air conditioner to satisfy the requirements of the control cabinet

2.6**packaged unit**

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

2.7**single split unit**

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

2.8**single-duct air conditioner**

air conditioner for spot cooling in which the condenser intake air is introduced from the space containing the unit and discharged outside this space

2.9**liquid chilling package**

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

It may have means for heating which can be reversing the refrigerating cycle, like a heat pump

2.10**heat recovery liquid chilling package**

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

2.11**heat recovery**

recovery of heat rejected by the unit(s) 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(s) whose primary control remains in the heating mode (e.g. variable refrigerant flow)

2.12**indoor heat exchanger**

heat exchanger which is designed to transfer heat to the indoor part of the building or to the indoor hot water supplies or to remove heat from these

NOTE 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.

EN 14511-1:2004 (E)**2.13****outdoor heat exchanger**

heat exchanger which is designed to remove heat from the outdoor ambient environment, or any other available heat source, or to transfer heat to it

NOTE 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 heat pump operating in the heating mode, this is the evaporator.

2.14**heat recovery heat exchanger**

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

2.15**heat transfer medium**

any medium (water, air, ...) used for the transfer of the heat without change of state. It can be:

- cooled liquid circulating in the evaporator;
- cooling medium circulating in the condenser;
- heat recovery medium circulating in the heat recovery heat exchanger

2.16**outdoor air**

air introduced to the conditioned space through the unit from the outside

2.17**recycled air**

air from the conditioned space through the unit and back to the conditioned space

2.18**exhaust air**

air from the conditioned space through the unit to the outdoor side

2.19**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

2.20**total cooling capacity**

P_C

heat given off from the heat transfer medium to the unit per unit of time, expressed in Watt

2.21**latent cooling capacity**

P_L

capacity of the unit for removing latent heat from the evaporator intake air, expressed in Watt

2.22**sensible cooling capacity**

P_S

capacity of the unit for removing sensible heat from the evaporator intake air, expressed in Watt

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2.23**heating capacity** P_H

heat given off by the unit to the heat transfer medium per unit of time, expressed in Watt

NOTE If heat is removed from the indoor heat exchanger for defrosting, it is taken into account.

2.24**heat rejection capacity**

heat removed by the heat transfer medium of the condenser per unit of time, expressed in Watt

NOTE This applies only to heat recovery liquid chilling packages.

2.25**heat recovery capacity**

heat removed by the heat transfer medium of the heat recovery heat exchanger, per unit of time, expressed in Watt

NOTE This applies only to heat recovery liquid chilling packages.

2.26**total power input** P_T

power input of all components of the unit as delivered, expressed in Watt

2.27**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; and
- proportional power input of the conveying devices (e.g. fans, pumps) for ensuring the transport of the heat transfer media inside the unit.

It is expressed in Watt

2.28**energy efficiency ratio** EER

ratio of the total cooling capacity to the effective power input of the unit, expressed in Watt/Watt

2.29**sensible heat ratio** SHR

ratio of the sensible cooling capacity to the total cooling capacity, expressed in Watt/Watt

2.30**coefficient of performance** COP

ratio of the heating capacity to the effective power input of the unit, expressed in Watt/Watt

2.31**operating range**

range indicated by the manufacturer and limited by the upper and lower limits of use (e.g. temperatures, air humidity, voltage) within which the unit is deemed to be fit for use and has the characteristics published by the manufacturer