SLOVENSKI STANDARD
oSIST prEN 14511-1:2015

01-december-2015

Klimatske naprave, enote za tekočinsko hlajenje in toplotne črpalke za ogrevanje in hlajenje prostora in električni kompresorji za ogrevanje in hlajenje prostora - 1. del: Izrazi in definicije

Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers using 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: **prEN 14511-1**

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

oSIST prEN 14511-1:2015 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 14511-1

October 2015

ICS 01.040.27; 01.040.91; 27.080; 91.140.30

Will supersede EN 14511-1:2013

English Version

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

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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 14511-1:2015) has been prepared by Technical Committee CEN/TC 113 “Heat pumps and air conditioning units”, the secretariat of which is held by AENOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14511-1:2013.

The main change with respect to the previous edition is the addition of terms and definitions for process chillers. This document has also 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.

prEN 14511 currently comprises the following parts:

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

— *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling and process chillers, using electrically driven compressors — Part 2: Test conditions*,

— *Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors — Part 3: Test methods*,

— *Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors — Part 4: Requirements.*

1 Scope

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

This European Standard 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 standard. Single duct and double duct units are covered by the standard.

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

This European Standard 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 should 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 Terms and definitions

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

2.1
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.

2.2
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.

2.3
comfort air conditioner or heat pump
air conditioner or heat pump to satisfy the comfort requirements of the occupants of the air conditioned room

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 to form a discrete matched functional unit

2.8
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

2.9
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

2.10
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.

2.11
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 between 2° C and 15° C

2.12
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.

2.13
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

2.14
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

2.15
high temperature process chiller
process chiller that is capable of delivering its rated cooling capacity at an outlet chilled water temperature of 6°C

2.16
heat recovery liquid chilling package
factory-made liquid chilling package designed for the purpose of chilling liquid and recovering of heat

2.17
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)

2.18
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.

2.19
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.

2.20
heat recovery heat exchanger
heat exchanger assembly which is designed to transfer heat to the heat recovery medium

2.21
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.

2.22
exhaust air
air from the air conditioned space entering the outdoor heat exchanger

2.23
recycled air
air from the air conditioned space entering the indoor heat exchanger

2.24
outdoor air
air from the outdoor environment

2.25
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

2.26
total cooling capacity
P_C
heat given off from the heat transfer medium to the unit per unit of time, expressed in Watt

2.27
latent cooling capacity
P_L
capacity of the unit for removing latent heat from the evaporator intake air, expressed in Watt

2.28
sensible cooling capacity
P_S
capacity of the unit for removing sensible heat from the evaporator intake air, expressed in Watt

2.29
heating capacity
P_H
heat given off by the unit to the heat transfer medium per unit of time, expressed in Watt

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

2.30
heat rejection capacity
heat removed by the heat transfer medium of the condenser per unit of time, expressed in Watt

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

2.31
heat recovery capacity
heat removed by the heat transfer medium of the heat recovery heat exchanger, per unit of time, expressed in Watt

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

2.32
total power input
P_T
power input of all components of the unit, expressed in Watt

2.33
effective power input
P_E
average electrical power input of the unit within the defined interval of time, expressed in Watt, 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

2.34
energy efficiency ratio
EER
ratio of the total cooling capacity to the effective power input of the unit, expressed in Watt/Watt

2.35
rated energy efficiency ratio
EER_{rated}
declared capacity for cooling [kW] divided by the rated power input for cooling [kW] of a unit when providing cooling at standard rating conditions

2.36
sensible heat ratio
SHR
ratio of the sensible cooling capacity to the total cooling capacity, expressed in Watt/Watt

2.37
coefficient of performance
COP
ratio of the heating capacity to the effective power input of the unit, expressed in Watt/Watt