

Gas-fired endothermic engine driven heat pumps -
Part 1: Terms and definitions

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| <p>See Eesti standard EVS-EN 16905-1:2023 sisaldab Euroopa standardi EN 16905-1:2023 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 25.10.2023.</p> <p>Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.</p> | <p>This Estonian standard EVS-EN 16905-1:2023 consists of the English text of the European standard EN 16905-1:2023.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 25.10.2023.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p> |
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English Version

Gas-fired endothermic engine driven heat pumps - Part 1: Terms and definitions

Pompes à chaleur à moteur endothermique alimenté
au gaz - Partie 1 : Termes et définitions

Gasbefeuerte endothermische Motor-Wärmepumpen -
Teil 1: Begriffe

This European Standard was approved by CEN on 11 September 2023.

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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

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| Contents | | Page |
|--------------------------------|--|-----------|
| European foreword | | 3 |
| Introduction | | 4 |
| 1 | Scope | 5 |
| 2 | Normative references | 5 |
| 3 | Terms and definitions | 6 |
| 3.1 | Appliance and its constituents | 6 |
| 3.2 | Combustion products circuit | 10 |
| 3.3 | Adjusting, monitoring, control and safety devices | 10 |
| 3.4 | Operation of the GEHP appliance | 13 |
| 3.5 | Gases | 16 |
| 3.6 | Conditions of operation, measurement and calculations | 17 |
| 4 | Denomination | 41 |
| Bibliography | | 42 |
| Index | | 43 |

European foreword

This document (EN 16905-1:2023) has been prepared by Technical Committee CEN/TC 299 “Gas-fired sorption appliances, indirect fired sorption appliances, gas-fired endothermic engine heat pumps and domestic gas-fired washing and drying appliances”, the secretariat of which is held by UNI.

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 April 2024 and conflicting national standards shall be withdrawn at the latest by April 2024.

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 16905-1:2017.

The main changes compared to the previous edition are listed below:

- new definitions added in 3.1, 3.4, 3.5 and 3.6;
- modifications of existing definitions in 3.6.

The EN 16905 series comprises the following parts under the general title *Gas-fired endothermic engine driven heat pumps*:

- *Part 1: Terms and definitions*;
- *Part 2: Safety*;
- *Part 3: Test conditions*;
- *Part 4: Test methods*;
- *Part 5: Calculation of seasonal performances in heating and cooling mode*.

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 organizations 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.

Introduction

The GEHP appliances having their condenser cooled by air and by the evaporation of external additional water are not covered by this document.

Single split and multisplit systems are covered by this document.

The GEHP appliances can have one or more primary or secondary functions.

This document specifies the requirements, test methods and test conditions concerning, in particular, the construction, safety, fitness for purpose, and rational use of energy, for the rating and performance calculation of air conditioners and heat pumps using either air, water or brine as heat transfer media, with gas-fired endothermic engine driven compressors when used for space heating, cooling and refrigeration, hereafter referred to as “GEHP appliance”.

This document has been prepared to address the definitions used in all parts of the EN 16905 series.

EN 16905-1:2023, EN 16905-2:—¹, EN 16905-3:—², EN 16905-4:—³ and EN 16905-5:2022 are linked to the Energy Related Products Directive (2009/125/EC) in terms of tests conditions, tests methods and seasonal performances calculation methods under Mandate M/535; (see EN 16905-2:—¹, Annexes ZB and ZC, EN 16905-3:—², Annex ZA, EN 16905-4:—³, Annex ZA and EN 16905-5:2022, Annex ZA).

These documents will be reviewed whenever new mandates could apply.

¹ Under preparation. Current stage at the time of publication: FprEN 16905-2:2022.

² Under preparation. Current stage at the time of publication: prEN 16905-3:2023.

³ Under preparation. Current stage at the time of publication: FprEN 16905-4:2023.

1 Scope

This part of the EN 16905 series specifies the terms and definitions for the rating and performance calculation of gas-fired endothermic engine driven heat pumps for heating and/or cooling mode including the engine heat recovery, to be used outdoors.

This document specifies the terms and definitions.

This document is intended to be used in conjunction with the following standards:

- EN 16905-2:— on safety;
- EN 16905-3:— on test conditions;
- EN 16905-4:— on the requirements, test conditions and test methods;
- EN 16905-5:2022 on the calculation of seasonal performances in heating and cooling mode;
- the heat pump standards, EN 14511-2, EN 14511-3 and EN 14825.

This document only applies to appliances with a maximum heat input (based on net calorific value) not exceeding 70 kW at standard rating conditions.

This document only applies to appliances under categories I_{2H} , I_{2E} , I_{2Er} , I_{2R} , $I_{2E(S)B}$, I_{2L} , I_{2LL} , I_{2ELL} , $I_{2E(R)B}$, I_{2ESi} , $I_{2E(R)}$, I_{3P} , I_{3B} , $I_{3B/P}$, II_{2H3+} , II_{2Er3+} , $II_{2H3B/P}$, $II_{2L3B/P}$, $II_{2E3B/P}$, $II_{2ELL3B/P}$, II_{2L3P} , II_{2H3P} , II_{2E3P} and II_{2Er3P} according to EN 437.

This document only applies to appliances:

- a) having gas fired endothermic engines under the control of fully automatic control systems;
- b) having closed system refrigerant circuits in which the refrigerant does not come into direct contact with the fluid to be cooled or heated;
- c) where the temperature of the heat transfer fluid of the heating system (heating water circuit) does not exceed 105 °C during normal operation;
- d) where the maximum operating pressure in the:
 - 1) heating water circuit (if installed) does not exceed 6 bar,
 - 2) domestic hot water circuit (if installed) does not exceed 10 bar.

This document applies to GEHP appliances only when used for space heating or space cooling or for refrigeration, with or without heat recovery.

This document is applicable to GEHP appliances that are intended to be type tested. Requirements for GEHP appliances that are not type tested would need to be subject to further consideration.

2 Normative references

There are no normative references in this document.