

**Külmutussüsteemid ja soojuspumbad.
Süsteemi vooluskeemid ning torustiku
ja mõõteriistade skeemid. Paigutus ja
tingmärgid**

Refrigerating systems and heat pumps - System flow
diagrams and piping and instrument diagrams -
Layout and symbols

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1861:1999 sisaldab Euroopa standardi EN 1861:1998 ingliskeelset teksti. Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 1861:1999 consists of the English text of the European standard EN 1861:1998. This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: Käesolev Euroopa standard määrab kindlaks külmutussüsteemide, sealhulgas soojuspumbasüsteemide vooluskeemides ning torustiku ja mõõteriistade skeemides kasutatavad tingmärgid ja joonestusjuhised. Nendel skeemidel on kujutatud külmutussüsteemide osade suhteline paigutus ja funktsioon ning nad on üks osa külmutussüsteemi konstrueerimiseks, valmistamiseks, paigaldamiseks, töölerakendamiseks, kasutamiseks, hooldamiseks ja kasutuselt kõrvaldamiseks vajalikust tehnilisest kogudokumentatsioonist.	Scope:
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ICS 01.080.30, 27.080, 27.200

Võtmesõnad: diagrammid, graafilised sümbolid, informatsioon, jahutussüsteemid, soojuspumbad, struktuurielementide liigitus, tabelid, torud, tööriistad, valik

ICS 01.080.30; 27.080; 27.200

Descriptors: Refrigerating systems, flow diagrams, symbols.

English version

**Refrigerating systems and heat pumps – System flow
diagrams and piping instrument diagrams**

Layout and symbols

Systèmes de réfrigération et pompes à
chaleur – Schémas synoptiques pour
systèmes, tuyauteries et instrumenta-
tion – Configuration et symboles

Kälteanlagen und Wärmepumpen –
Systemfließbilder und Rohrleitungs-
und Instrumentenfließbilder – Gestal-
tung und Symbole

This European Standard was approved by CEN on 1998-03-23.

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.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 182 "Refrigerating systems, safety and environmental requirements", the secretariat of which is held by DIN.

This European Standard 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) 1997/23/EC.

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 October 1998, and conflicting national standards shall be withdrawn at the latest by October 1998.

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

Introduction

Recognizing the work already done by other committees, the work has been based on the basic series developed for process plants and other relevant symbol standards. The standard will be revised and harmonized with the relevant standards as soon as these are available.

1 Scope

This European Standard specifies the symbols and drawing rules for system flow diagrams and piping and instrument diagrams to be applied to refrigerating systems including heat pumps. These diagrams represent the configuration and function of refrigerating systems and form a part of the complete technical documentation necessary for designing, construction, installation, commissioning, operation, maintenance and decommissioning of a refrigerating system.

This standard does not apply to refrigerating systems, where the heat is extracted by an electrical circuit, e.g. Peltier-effect.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

ISO 1000

SI units and recommendations for the use of their multiples and of certain other units

ISO 3098-1

Technical drawings – Lettering – Part 1: Currently used characters

ISO 3511-1

Process measurement control functions and instrumentation – Symbolic representation – Part 1: Basic requirements

ISO 3511-2

Process measurement control functions and instrumentation – Symbolic representation – Part 2: Extension of basic requirements

ISO 3511-3

Process measurement control functions and instrumentation – Symbolic representation – Part 3: Detailed symbols for instrument interconnection diagrams

ISO 3511-4

Industrial process measurement control functions and instrumentation – Symbolic representation – Part 4: Basic symbols for process computer, interface, and shared display/control functions

ISO 4196

Graphical symbols – Use of arrows

ISO 5457

Technical drawings – Sizes and layout of drawing sheets

ISO 7200

Technical drawings – Title blocks

ISO 10628

Flow diagrams for process plants – General rules