EESTI STANDARD

EVS-EN 1434-5:2007

Soojusarvestid. Osa 5: Lähtetaatlus

Heat meters - Part 5: Initial verification tests

This document is a preview generated by EVS

EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1434-5:2007 sisaldab Euroopa standardi EN 1434-5:2007 ingliskeelset teksti. Käesolev dokument on jõustatud 30.03.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 1434-5:2007 consists of the English text of the European standard EN 1434-5:2007. This document is endorsed on 30.03.2007 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: See Euroopa standard kehtib soojusarvestite kohta; nende seadmetega mõõdetakse seda soojushulka, mida soojusvahetustsüklis neelab või annab ära soojust edasikandev vedelik. Soojusarvesti näitab soojuse kogust ametlikult kehtivates ühikutes. Standardi see osa käsitleb lähtetaatlust, mis peab tagama, et kasutuselevõetavad soojusarvestid vastavad tunnusmudelile ja eeskirjadele, st neil on kindlaksmääratud metroloogilised omadused maksimaalse lubatud vea piires.	**Scope:** This European Standard specifies initial verification tests applies to heat meters, that is to instruments intended for measuring the heat which, in a heat-exchange circuit, is absorbed or given up by a liquid called the heat-conveying liquid. The heat meter indicates the quantity of heat in legal units. Electrical safety requirements are not covered by this European Standard. Pressure safety requirements are not covered by this European Standard. Surface mounted temperature sensors are not covered by this European Standard.

ICS 17.200.10

Võtmesõnad: lähtetaatlus, metroloogia, mõõteriistad, soojusenergia arvestid, testimine, vastavustest

This document is prepared generated by EVS

Eesti Standardikeskusele kuulub standardite reprodutseerimis- ja levitamisõigus

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1434-5

February 2007

ICS 17.200.10

Supersedes EN 1434-5:1997

English Version

Heat meters - Part 5: Initial verification tests

Compteurs d'énergie thermique - Partie 5: Essais de vérification initiaux

Wärmezähler - Teil 5: Ersteichung

This European Standard was approved by CEN on 7 January 2007.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

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

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

© 2007 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN 1434-5:2007: E

This document is a preview generated by EVS

Contents

Page

Foreword 3

1 Scope 4

2 Normative references 4

3 General 4

4 Uncertainty of test equipment 5

5 Tests to be carried out 5
5.1 General 5
5.2 Flow sensors 5
5.3 Temperature sensor pair 6
5.3.1 Error in temperature difference 6
5.3.2 Insulation resistance 6
5.4 Calculator 7
5.5 Calculator and temperature sensor pair. 7
5.6 Combined heat meter 7
5.7 Complete meter 8

6 Documentation to be supplied 8

Annex ZA (informative) **Relationship between this European Standard and the Essential Requirements of EU Directive 2004/22/EC, MID** 9

This document is a preview generated by EVS

This document is a preview generated by EVS

Foreword

This document (EN 1434-5:2007) has been prepared by Technical Committee CEN/TC 176 “Heat meters”, the secretariat of which is held by DS.

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 August 2007, and conflicting national standards shall be withdrawn at the latest by August 2007.

This document supersedes EN 1434-5:1997.

The other parts are:

Part 1 - General requirements

Part 2 - Constructional requirements

Part 3 - Data exchange and interfaces

Part 4 - Pattern approval tests

Part 6 - Installation, commissioning, operational monitoring and maintenance

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard specifies initial verification tests and applies to heat meters, that is to instruments intended for measuring the heat which, in a heat-exchange circuit, is absorbed (cooling) or given up (heating) by a liquid called the heat-conveying liquid. The heat meter indicates the quantity of heat in legal units.

Electrical safety requirements are not covered by this European Standard.

Pressure safety requirements are not covered by this European Standard.

Surface mounted temperature sensors are not covered by this European Standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1434-1:2007, *Heat meters — Part 1: General requirements*

EN 60751:1995, *Industrial platinum resistance thermometer sensors (IEC 60751:1983 + A1:1986)*

3 General

Initial verification of a measuring instrument is a series of tests and visual examinations carried out to determine whether an instrument manufactured to replicate a given pattern conforms to that pattern and to regulations, and that its metrological characteristics lie within the limits of the maximum permissible errors. If the instrument passes all tests and examinations, it is given legal character by its acceptance as evidenced by stamping and/or issuance of a certificate of verification.

The provisions of this standard also apply to the re-verification of heat meters.

The instrument shall be tested under rated operating conditions at the extremes and midpoints of its ranges.

Initial verification is divided into metrological, technical and administrative phases.

In tests of a heat meter as a combined instrument, the flow sensor, the temperature sensors and the calculator shall each be tested separately.

Unless otherwise stated in the certificate of pattern approval, the verification shall be carried out in accordance with this standard.

NOTE Modern heat meters are mainly equipped with CMOS microprocessors with a very low power consumption, allowing battery operation. Testing and adjusting of this type of meter needs a completely different approach. Until now, almost every meter type needed its own test equipment to handle the manufacturer's specific requirements. This is a very complicated and expensive way for users of several types of meters and for initial verification institutes. The more different types of heat meters a user has installed, the more testing equipment he may need. An economical testing of several meters should be possible and an easy adaptation to the existing test bench is of great interest.

Since this problem came up, experts have been researching an acceptable solution to it. Details of one example of an acceptable solution are given in "Normierter Wärmezähler Adapter" (Standardised heat meter adapter) Version 1.5 of September 2000, AGFW Merkblatt 6, Band 2, Frankfurt, Germany.

This document is a preview generated by EVS