

SOOJUSARVESTID. OSA 1: ÜLDNÕUDED

Thermal energy meters - Part 1: General requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1434-1:2015+A1:2018 sisaldab Euroopa standardi EN 1434-1:2015+A1:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 1434-1:2015+A1:2018 consists of the English text of the European standard EN 1434-1:2015+A1:2018.
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ICS 17.200.10

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English Version

Thermal energy meters - Part 1: General requirements

Compteurs d'énergie thermique - Partie 1 :
Prescriptions générales

Wärmezähler - Teil 1: Allgemeine Anforderungen

This European Standard was approved by CEN on 5 September 2015 and includes Amendment 1 approved by CEN on 18 July 2018.

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European foreword

This document (EN 1434-1:2015+A1:2018) has been prepared by Technical Committee CEN/TC 176 “Thermal energy meters”, the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by May 2019, and conflicting national standards shall be withdrawn at the latest by May 2019.

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 includes Amendment 1, approved by CEN on 2018-07-18.

This document supersedes A1 EN 1434-1:2015 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

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.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

EN 1434, A1 *Thermal energy meters* A1 consists of the following parts:

- *Part 1: General requirements*
- *Part 2: Constructional requirements*
- *Part 3: Data exchange and interfaces¹⁾*
- *Part 4: Pattern approval tests*
- *Part 5: Initial verification tests*
- *Part 6: Installation, commissioning, operational monitoring and maintenance*

In comparison to EN 1434-1:2007, the following changes have been made:

- special cases for combined A1 bifunctional thermal energy meters A1 are added;
- additional functionality for smart metering applications are added;
- metrological requirements for smart metering applications are added;
- definitions and requirements for the cooling meter are added;
- tariff meters are added;

¹⁾ EN 1434-3 is maintained by CEN/TC 294.

- terms and definitions, requirements for registration devices and cooling meters are added;
- requirements for fast response meters are added (informative Annex C).

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

1 Scope

This European Standard specifies the general requirements for A_1 thermal energy meters A_1 . A_1 Thermal energy meters A_1 are instruments intended for measuring the energy which in a heat-exchange circuit is absorbed (cooling) or given up (heating) by a liquid called the heat-conveying liquid. The A_1 thermal energy meter A_1 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.

This standard covers meters for closed systems only, where the differential pressure over the thermal load is limited.

2 Normative references

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

A_1 EN 1434-2:2015+A1:2018, *Thermal energy meters — Part 2: Constructional requirements* A_1

A_1 EN 1434-4:2015+A1:2018, *Thermal energy meters — Part 4: Pattern approval test* A_1

EN 60751, *Industrial platinum resistance thermometers and platinum temperature sensors (IEC 60751)*

EN 61010-1, *Safety requirements for electrical equipment for measurement, control and laboratory use — Part 1: General requirements (IEC 61010-1)*

3 Terms and definitions

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

3.1 response time

$\tau_{0,5}$

time interval between the instant when flow or temperature difference is subjected to a specified abrupt change and the instant when the response reaches 50 % of the step value

3.2 fast response meter

meter suitable for heat exchanging circuits with rapid dynamic variations in the exchanged heat

Note 1 to entry: See also Annex C.

3.3 rated voltage

U_n

voltage of the external power supply required to operate the A_1 thermal energy meter A_1 , conventionally the voltage of the AC mains supply

3.4 rated operating conditions

conditions of use, giving the range of values of influence quantities, for which the metrological characteristics of the instrument are within the specified maximum permissible errors