

Heat meters —

Part 2: Constructional requirements

The European Standard EN 1434-2:1997, with the incorporation of amendment A1:2002, has the status of a British Standard

ICS 17.200.10

Committees responsible for this British Standard

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- British Gas
- GAMBICA
- Petrol Pump Manufacturers' Association
- Society of British Gas Industries
- Water Services Association of England and Wales

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- Building Services Research and Information Association
- Combined Heat and Power Association
- Department of the Environment (Building Research Establishment)
- Department of Trade and Industry (National Weights and Measures Laboratory)
- National Engineering Laboratory

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National foreword

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The start and finish of text introduced or altered by CEN amendment A1 is indicated in the text by tags **[A1]** **[A1]**. Tags indicating changes to text carry the number of the amendment. For example, text altered by CEN amendment A1 is indicated in the text by **[A1]** **[A1]**.

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Summary of pages

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(including amendment A1:2002)

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(inclut l'amendement A1:2002)

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Teil 2: Anforderungen an die Konstruktion
(enthält Änderung A1:2002)

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 176, Heat meters, the secretariat of which is held by DS.

The other parts are:

- *Part 1, General requirements;*
- *Part 3, Data exchange and interfaces;*
- *Part 4, Pattern approval tests;*
- *Part 5, Initial verification tests;*
- *Part 6, Heat meter installation, commissioning, operational monitoring and maintenance.*

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of an identical text or by endorsement, at the latest by August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

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

Foreword to amendment A1

This document EN 1434-2:1997/A1:2002 has been prepared by Technical Committee CEN/TC 176, Heat meters, the Secretariat of which is held by DS.

This amendment to the 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 March 2003, and conflicting national standards shall be withdrawn at the latest March 2003.

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

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1 Scope

This European Standard 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 standard.

A1 Pressure safety requirements are not covered by this standard.

Surface mounted sensors are not covered by this standard.

Part 1 specifies general requirements. **A1**

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.

EN 1434-1:1997, *Heat meters — Part 1: General requirements*.

EN 1434-3, *Heat meters — Part 3: Data exchange and interfaces*.

EN 60751:1995, *Industrial platinum resistance thermometer sensors*.
(IEC 751:1983)

ISO 228-1, *Pipe threads where pressure tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*.

ISO 4903, *Information technology — Data communication — 15-pole DTE/DCE interface connector and contact number assignments*.

ISO 7005-1, *Metallic flanges — Part 1: Steel flanges*.

ISO 7005-2, *Metallic flanges — Part 2: Cast iron flanges*.

ISO 7005-3, *Metallic flanges — Part 3: Copper alloy and composite flanges*.

3 Temperature sensors

3.1 General

The temperature sensor sub-assembly shall consist of platinum resistance temperature sensors selected as matched pairs.

Other types of temperature sensor pairs may be used where the sub-assembly consists, inseparably, of temperature sensors and calculator.

The maximum admissible working pressure shall be declared by the supplier.

Where no dimensional tolerance is specified, the values shall be taken from Table 1.

Table 1 — Tolerances

Dimension mm	0,5 up to 3	Over 3 up to 6	Over 6 up to 30	Over 30 up to 120	Over 120 up to 400
Tolerance mm	±0,2	±0,3	±1	±1,5	±2,5

3.2 Mechanical design

For pipe sizes up to and including DN 250, three different temperature sensor types are standardized:

Direct mounted short probes — Type DS;

Direct mounted long probes — Type DL;

Pocket mounted long probes — Type PL.

Types PL and DL can be either head probes or have permanently connected signal leads. Type DS shall have permanently connected signal leads only.

3.2.1 Materials of temperature probe sheath and pocket

The temperature pocket and the protective sheath of direct mounted probes shall be of a material that is adequately strong and resistant to corrosion and has the requisite thermal conductivity.

A suitable material has been shown to be EN 10088-3 — X6 Cr Ni Mo Ti 17 12 2.

3.2.2 Dimensions of direct mounted short probes — Type DS

The dimensions shall be as given in Figure 1.

Further non-normative information is given in Annex A, Figure A.1.

3.2.3 Dimensions of direct mounted long probes — Type DL

The dimensions shall be as given in Figure 2.

Further information is given in Annex A, Figure A.2 and Figure A.3.

3.2.4 Dimensions of pocket mounted long probes — Type PL

The dimensions shall be as given in Figure 3.

Further information is given in Annex A, Figure A.4 and Figure A.5.





