Gasmålere – Gasmålere baseret på termisk masseflow

Gas meter – Thermal-mass flow-meter based gas meter

DANSK STANDARD
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EUROPEAN STANDARD **EN 17526**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 91.140.40

English Version

Gas meter - Thermal-mass flow-meter based gas meter

Compteurs de gaz - Compteur de gaz basé sur un débitmètre massique par effet thermique

Gaszähler - Thermische Massendurchflussgaszähler

This European Standard was approved by CEN on 11 July 2021.

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European foreword

This document (EN 17526:2021) has been prepared by Technical Committee CEN/TC 237 “Gas meters”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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 has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

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.

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1 Scope

This document specifies requirements and tests for the construction, performance, safety and production of battery powered class 1,5 Capillary Thermal-Mass Flow sensor gas meters (hereinafter referred to as meter(s)). This applies to meters having co-axial single pipe, or two pipe connections, which are used to measure volumes of fuel gases of the 2nd and/or 3rd family, as given in EN 437:2018.

In general, the term “thermal mass flow meters” applies to a flow-measuring device using heat transfer to measure and indicate gas flowrate, as defined in ISO 14511.

NOTE 1 Although the word “mass” is present in the definition of the measurement principle, gas meters covered by this document provide measurement of gas at base conditions of temperature and pressure.

These meters have a maximum working pressure not exceeding 0,5 bar and a maximum flowrate not exceeding 160 m^3/h over a minimum ambient temperature range of −10 °C to +40 °C and a gas temperature range as specified by the manufacturer with a minimum range of 40 °C.

This document applies to meters indicating volume at base conditions, which are installed in locations with vibration and shocks of low significance. It applies to meters in:

— closed locations (indoor or outdoor with protection, as specified by the manufacturer) with condensing humidity or with non-condensing humidity;

or, if specified by the manufacturer:

— open locations (outdoor without any covering) both with condensing humidity or with non-condensing humidity;

and in locations with electromagnetic disturbances likely to be found in residential, commercial and light industrial use.

For meters which indicate unconverted volume, reference can be made to Annex C.

Unless otherwise stated, all pressures given in this document are gauge pressures.

Requirements for electronic indexes, valves and additional requirements for batteries incorporated in the meter and any other additional functionalities are given in EN 16314:2013.

Unless otherwise stated in a particular test, the tests are carried out on meters that include additional functionality devices intended by the manufacturer.

Clauses 1 to 13 are for design and type testing only.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

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EN 549:2019, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

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EN 16314:2013, *Gas meters — Additional functionalities*

EN ISO 228-1:2003, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1:2000)*

EN ISO 1518-1:2019, *Paints and varnishes — Determination of scratch resistance — Part 1: Constant-loading method (ISO 1518-1:2019)*

EN ISO 2409:2020, *Paints and varnishes — Cross-cut test (ISO 2409:2020)*

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EN 60695-11-5:2017, *Fire hazard testing — Part 11-5: Test flames — Needle-flame test method - Apparatus, confirmatory test arrangement and guidance (IEC 60695-11-5:2016)*

EN 60695-11-10:2013[3)], *Fire hazard testing — Part 11-10: Test flames — 50 W horizontal and vertical flame test methods (IEC 60695-11-10:2013)*

EN 60730-1:2016[4)], *Automatic electrical controls — Part 1: General requirements (IEC 60730-1:2013 , modified + COR1:2014)*

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ISO 12213-2:2006, *Natural gas — Calculation of compression factor — Part 2: Calculation using molar-composition analysis*

ASTM D 1003-13, *Standard Test Method for Haze and Luminous Transmittance of transparent plastics*

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2) As impacted by EN 60529:1991/AC:2006-12, EN 60529:1991/A1:2000, EN 60529:1991/A2:2013 and EN 60529:1991/A2:2013/AC:2019-02.

3) As impacted by EN 60695-11-10:2013/AC:2014.

4) As impacted by EN 60730-1:2016/A1:2019.

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