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Gas meters - Additional functionalities

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Obsahuje: EN 16314:2013

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 16314

July 2013

ICS 91.140.40

English Version

Gas meters - Additional functionalities

Compteurs à gaz - Fonctionnalités supplémentaires

Gaszähler - Zusatzfunktionen

This European Standard was approved by CEN on 18 April 2013.

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Foreword

This document (EN 16314:2013) 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of an identical text or by endorsement, at the latest by January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

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Introduction

This European Standard has been drafted as part of the work being undertaken by the European Standards Organisations (CEN/CENELEC/ETSI) under the Commission Mandate M/441. This standard utilises the six functionalities agreed by the Smart Meters Coordination Group (SM-CG) (see Annex C) as the basis for its additional functionalities. It is not necessary for the Additional Functionality Device (AFD) to incorporate all functions. This standard builds on CEN/TR 16061 by providing specific requirements for the additional functionality that can be fitted to a gas meter.

This standard contains requirements for gas valves integral within the meters and controlled by an AFD where the capacity of the gas meter does not exceed 10 m^3/h. Such gas valves are intended for interruption of the gas supply but do not replace any valve intended to isolate the gas supply.

Communications for gas meters are outside the scope of this standard and are covered by the appropriate parts of EN 13757, which provide a number of protocols and transport layers for meter communications for Gas, Water and Heat meters.

A number of methods can provide the additional functionality for gas meters: these are illustrated below, see Figure 1, and described in detail within this standard. The AFD can be integral to the gas meter, attached to the meter or remote from the meter.

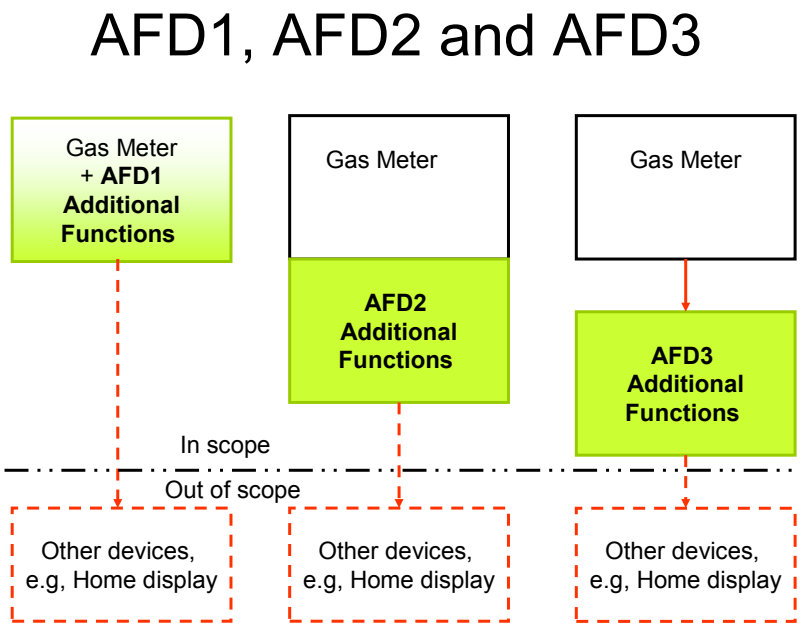

Figure 1 — Additional functionality device

1 Scope

This European Standard specifies the additional requirements and tests for gas meters with a maximum capacity of 40 m^3/h and a maximum operating pressure of not exceeding 500 mbar, conforming to EN 1359, EN 12261, EN 12480, EN 12405 and EN 14236, which have battery powered devices providing additional functionalities that form part of the gas meter (hereafter referred to as meter) or contained in an Additional Functionality Device (AFD). It also covers the additional requirements when an electronic index is used rather that a mechanical one. Where the option of an integral valve to the meter is specified, this standard only gives requirements for meters having a maximum capacity not exceeding 10 m^3/h.

This European Standard is applicable to first, second and third family gases according to EN 437.

This European Standard specifies the construction requirements for electronic components but communication protocols are dealt within other European Standards, e.g. appropriate parts of EN 13757.

NOTE This European Standard covers connections to auxiliary devices but not the requirements for these devices.

This European Standard applies to AFDs that are installed in locations with vibration and shocks of low significance and in:

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

or, if specified by the manufacturer:

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

— locations liable to temporary saturation,

and in locations with electromagnetic disturbances corresponding to those likely to be found in residential, commercial buildings or similar buildings.

This European Standard does not cover the changing of metrological software within the meter or the upload/download of metrological software.

This European Standard only covers valves integral to the meter.

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.

EN 1359, *Gas meters — Diaphragm gas meters*

EN 12261, *Gas meters — Turbine gas meters*

EN 12405-2, *Gas meters — Conversion devices — Part 2: Energy conversion*

EN 12480, *Gas meters — Rotary displacement gas meters*

EN 13611, *Safety and control devices for gas burners and gas-burning appliances — General appliances*

EN 13757-1, *Communication system for meters and remote reading of meters — Part 1: Data exchange*

EN 13757-2, *Communication systems for remote reading of meters — Part 2: Physical and link layer*

EN 13757-3, *Communications systems for and remote reading of meters — Part 3: Dedicated application layer*

EN 13757-4, *Communication systems for meters and remote reading of meters — Part 4: Wireless meter readout (radio meter reading for operation in the 868 MHz to 870 MHz SRD band)*

EN 13757-5, *Communications systems for and remote reading of meters — Part 5: Wireless relaying*

EN 13757-6, *Communications systems for and remote reading of meters — Part 6: Local bus*

EN 14236, *Ultrasonic domestic gas meters*

EN 55022, *Information Technology Equipment — Radio disturbance characteristics — Limits and methods of measurement*

EN 60079 (all parts), *Explosive atmospheres*

EN 60086-1, *Primary batteries — Part 1: General*

EN 60086-4, *Primary batteries — Part 4: Safety of lithium batteries*

EN 60529, *Degrees of protection provided by enclosures (IP code)*

EN 60950-1, *Information technology equipment — Safety — Part 1: General requirements*

EN 61000-4-2, *Electromagnetic compatibility (EMC) — Part 4-2: Testing and measurement techniques — Electrostatic discharge immunity test*

EN 61000-4-3, *Electromagnetic compatibility (EMC) — Part 4-3: Testing and measurement techniques — Radiated, radio-frequency, electromagnetic field immunity test*

EN 61000-4-4, *Electromagnetic compatibility (EMC) — Part 4-4: Testing and measurement techniques — Electrical fast transient/burst immunity test*

EN 61000-4-5, *Electromagnetic compatibility (EMC) — Part 4-5: Testing and measurement techniques — Surge immunity test*

EN 61000-4-6, *Electromagnetic compatibility (EMC) — Part 4-6: Testing and measurement techniques — Immunity to conducted disturbances, induced by radio-frequency fields*

EN 61000-4-8, *Electromagnetic compatibility (EMC) — Part 4-8: Testing and measurement techniques — Power frequency magnetic field immunity test*

EN 61000-4-9, *Electromagnetic compatibility (EMC) — Part 4-9: Testing and measurement techniques — Pulse magnetic field immunity test*

EN 61000-6-1, *Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity for residential, commercial and light-industrial environments*

EN 61000-6-2, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments*

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

EN 62056-21, *Electricity metering — Data exchange for meter reading, tariff and load control — Part 21: Direct local data exchange*

EN ISO 4892-3, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps (ISO 4892-3)*

EN ISO 6270-1, *Paints and Varnishes — Determination of resistance to humidity — Part 1: Continuous condensation (ISO 6270-1)*

EN ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1)*

IEC 61508-1, *Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 1: General Requirements*

ISO 7724-3, *Paints and Varnishes — Colorimetry — Part 3: Calculation of colour differences*

ASTM D1003, *Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics (edition 11)*