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STN	**Bezpečnostné uzatváracie zariadenia plynu na vstupný tlak do 10 MPa (100 bar)**	**STN EN 14382** 38 6419

Gas safety shut-off devices for inlet pressure up to 10 MPa (100 bar)

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

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/20

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EUROPEAN STANDARD
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EN 14382

August 2019

ICS 23.060.40 Supersedes EN 14382:2005+A1:2009

English Version

Gas safety shut-off devices for inlet pressure up to 10 MPa (100 bar)

Clapets de sécurité pour pressions amont jusqu'à 10 MPa (100 bar)

Gas-Sicherheitsabsperreinrichtungen für Eingangsdrücke bis 10 MPa (100 bar)

This European Standard was approved by CEN on 23 April 2019.

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

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European foreword

This document (EN 14382:2019) has been prepared by Technical Committee CEN/TC 235 “Gas pressure regulators and associated safety devices for use in gas transmission and distribution”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by February 2020, and conflicting national standards shall be withdrawn at the latest by February 2020.

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 supersedes EN 14382:2005+A1:2009.

In comparison with the previous edition, the following technical modifications have been made:

— normative references have been updated;

— terms and definitions have been added;

— classification of two in series SSDs as safety accessory to PED;

— full reference to EN 334:2019 for end connections, flange rating, nominal and face to face dimensions, materials (metallic and non-metallic), verification of strength of pressure bearing parts;

— statistical strength test on the basis of PED provisions;

— antistatic characteristics;

— vent limiter as possible fixture to be assembled in the SSDs;

— integration of environmental requirements;

— alignment of normative references (Clause 2), Annex G, Annex ZA and its relevant clauses to CEN rules.

The standard has been editorially revised.

This document can be used as a guideline for gas safety shut off devices outside the ranges specified in this standard.

This edition has introduced the application of statistical strength testing for series produced pressure and safety accessories on the basis of EU Directive 2014/68/EU Annex I article 3.2.2 and Guideline H-14. Safety shut-off devices dealt with in this document are standard safety shut-off devices and, when used in pressure regulating stations complying with EN 12186 or EN 12279, they are considered as standard pressure equipment in accordance with Clause 2 a) of Art. 1 of Pressure Equipment Directive 2014/68/EU (PED).

For standard safety shut-off devices used in pressure regulating stations complying with EN 12186 or EN 12279, Table ZA.1 given in Annex ZA includes all applicable Essential Requirements given in Annex I of PED except external corrosion resistance for applications in corrosive environments.

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(s).

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

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Republic of North Macedonia, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies constructional, functional, testing marking and sizing requirements and documentation of gas safety shut-off devices:

— for inlet pressures up to 100 bar and nominal diameters up to DN 400;

— for an operating temperature range from –20 °C to +60 °C;

which operate with fuel gases of the 1st and 2nd family as defined in EN 437, used in the pressure regulating stations in accordance with EN 12186 or EN 12279, in transmission and distribution networks and also in commercial and industrial installations.

“Gas safety shut-off devices” will hereafter be called “SSDs” except in titles.

For standard safety shut-off devices when used in pressure regulating stations complying with EN 12186 or EN 12279, Annex ZA lists all applicable Essential Safety Requirements of Directive 2014/68/EU (PED).

This document considers the following temperature classes/types of SSDs:

— temperature class 1: operating temperature range from –10 °C to 60 °C;

— temperature class 2: operating temperature range from –20 °C to 60 °C;

— functional class A: SSDs that close when damage to the pressure detecting element occurs or when external power fails and whose re-opening, is possible only manually;

— functional class B: SSDs that do not close when damage to the pressure detecting element occurs but provide suitable and reliable protection and whose re-opening, is possible only manually;

— type IS: (integral strength type);

— type DS: (differential strength type).

SSDs complying with the requirements of this document may be declared as “in conformity with EN 14382“ and bear the mark “EN 14382”.

The material and functional requirements specified in this document may be applied to SSDs which use thermal energy or the effects of electrical energy to trip the operation of the closing member. For these SSDs the operational parameters are not specified in this document.

The SSD may incorporate a vent limiter, complying with the requirements in Annex J.

This standard for some paragraphs and sub clauses makes full reference to EN 334:2019.

This document does not apply to:

— SSDs upstream from/on/in domestic gas-consuming appliances which are installed downstream of domestic gas meters;

— SSDs designed to be incorporated into pressure-regulating devices used in service lines[1] with volumetric flow rate ≤ 200 m^3/h at normal conditions and inlet pressure ≤ 5 bar.

[1] The service lines are those defined in EN 12279

Continued integrity of safety shut-off devices is ensured by periodic functional checks. For periodic functional checks it is common to refer to national regulations/standards where existing or users/manufacturers practices.

This document considers the reaction of the SSDs functional class A to the specified reasonable expected failures in terms of “fail close” behaviour, but it should be consider that there are other types of failures whose consequences cannot bring to the same reactions (these risks are covered via redundancy as per EN 12186) and that residual hazards should be reduced by a suitable surveillance in use / maintenance.

In this document, both safety shut-off devices that can be classified as “safety accessories” by themselves according the Pressure Equipment Directive (2014/68/EU) as well as safety shut-off devices that can be used to provide the necessary pressure protection through redundancy (e.g. shutoff device integrated in a pressure regulator, shut-off device with a second shut-off device) are considered. Addition of environmental considerations;

The provisions in this document are in line with the state of art at the moment of writing.

This document does not intend to limit the improvement of actual provisions (materials, requirements, test methods, acceptance criteria, etc.) or the developing of new provisions for SSDs where they are suitable to ensure an equivalent level of reliability.

Some clauses of this standard should be re-considered at the time when characteristics for non-conventional gases will be available.

Gas safety shut-off devices according to this European standard do not have their own source of ignition and therefore are not within the scope of European Directive 2014/34/EU. Any additional component (e.g. proximity switch, travel transducer etc.) should be independently considered in the framework of assemblies per ATEX Guideline to the application of Directive 2014/34/EU of the European Parliament and of the Council of 26nd February 2014, edition December 2017, §§42 and 43.

The document includes also environmental considerations.

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.

EN 334:2019, *Gas pressure regulators for inlet pressures up to 100 bar*

EN 1092-1:2007+A1:2013, *Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 1: Steel flanges*

EN 1092-2:1997, *Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 2: Cast iron flanges*

EN 1092-3:2003, *Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 3: Copper alloy flanges*

EN 1092-4:2002, *Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 4: Aluminium alloy flanges*

EN 1349:2009, *Industrial process control valves*

EN 1759-1:2004, *Flanges and their joint - Circular flanges for pipes, valves, fittings and accessories, Class designated - Part 1: Steel flanges, NPS 1/2 to 24*

EN 1759-3:2003, *Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, Class designated - Part 3: Copper alloy flanges*

EN 1759-4:2003, *Flanges and their joint - Circular flanges for pipes, valves, fittings and accessories, class designated - Part 4: Aluminium alloy flanges*

EN 10204:2004, *Metallic products - Types of inspection documents*

EN 12186:2014, *Gas infrastructure - Gas pressure regulating stations for transmission and distribution - Functional requirements*

EN 12279:2000, *Gas supply systems - Gas pressure regulating installations on service lines - Functional requirements*

EN 13906-1:2013, *Cylindrical helical springs made from round wire and bar - Calculation and design - Part 1 : Compression springs*

EN 13906-2:2013, *Cylindrical helical springs made from round wire and bar - Calculation and design - Part 2: Extension springs*

EN 13906-3:2014, *Cylindrical helical springs made from round wire and bar - Calculation and design - Part 3: Torsion springs*

EN 60534-1:2005, *Industrial-process control valves - Part 1: Control valve terminology and general considerations*

ISO 7005-2:1998, *Metallic flanges — Part 2: Cast iron flanges*