



SLOVENSKI STANDARD SIST EN ISO 5167-5:2016

01-junij-2016

Merjenje pretoka fluida na osnovi tlačne razlike, povzročene z napravo, vstavljeno v polno zapolnjen vod s krožnim prerezom - 5. del: Stožčasta merila (ISO 5167-5:2016)

Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 5: Cone meters (ISO 5167-5:2016)

Durchflussmessung von Fluiden mit Drosselgeräten in voll durchströmten Leitungen mit Kreisquerschnitt - Teil 5: Konus-Durchflussmesser (ISO 5167-5:2016)

Mesure de débit des fluides au moyen d'appareils déprimogènes insérés dans des conduites en charge de section circulaire - Partie 5: Dispositifs de mesure avec cône de mesure (ISO 5167-5:2016)

Ta slovenski standard je istoveten z: EN ISO 5167-5:2016

ICS:

17.120.10 Pretok v zaprtih vodih Flow in closed conduits

SIST EN ISO 5167-5:2016

en,fr,de

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EUROPEAN STANDARD

EN ISO 5167-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 17.120.10

English Version

Measurement of fluid flow by means of pressure
differential devices inserted in circular cross-section
conduits running full - Part 5: Cone meters (ISO 5167-
5:2016)

Mesure de débit des fluides au moyen d'appareils
déprimogènes insérés dans des conduites en charge de
section circulaire - Partie 5: Cônes de mesure (ISO
5167-5:2016)

Durchflussmessung von Fluiden mit Drosselgeräten in
voll durchströmten Leitungen mit Kreisquerschnitt -
Teil 5: Konus-Durchflussmesser (ISO 5167-5:2016)

This European Standard was approved by CEN on 4 February 2016.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 5167-5:2016) has been prepared by Technical Committee ISO/TC 30 "Measurement of fluid flow in closed conduits".

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 September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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INTERNATIONAL
STANDARD

ISO
5167-5

First edition
2016-03-01

**Measurement of fluid flow by means of
pressure differential devices inserted
in circular cross-section conduits
running full —**

Part 5:
Cone meters

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*Mesure de débit des fluides au moyen d'appareils déprimogènes
insérés dans des conduites en charge de section circulaire —*

Partie 5: Cônes de mesure

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Reference number
ISO 5167-5:2016(E)

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ISO 5167-5:2016(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 30, *Measurement of fluid flow in closed conduits*, Subcommittee SC 2, *Pressure differential devices*.

The first edition of ISO 5167-5 is complementary to ISO 5167-1, ISO 5167-2, ISO 5167-3, and ISO 5167-4.

ISO 5167 consists of the following parts, under the general title *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full*:

- *Part 1: General principles and requirements*
- *Part 2: Orifice plates*
- *Part 3: Nozzles and Venturi nozzles*
- *Part 4: Venturi tubes*
- *Part 5: Cone meters*

Introduction

This International Standard, divided into five parts, covers the geometry and method of use (installation and operating conditions) of orifice plates, nozzles, Venturi tubes, and cone meters when they are inserted in a conduit running full to determine the flow rate of the fluid in the conduit. It also gives necessary information for calculating the flow rate and its associated uncertainty.

This International Standard is applicable only to pressure differential devices in which the flow remains subsonic throughout the measuring section and where the fluid can be considered as single-phase, but it is not applicable to the measurement of pulsating flow. Furthermore, each of these devices can only be used within specified limits of pipe size and Reynolds number.

This International Standard deals with devices for which direct calibration experiments have been made sufficient in number, spread, and quality to enable coherent systems of application to be based on their results and coefficients to be given with certain predictable limits of uncertainty. However, for cone meters calibrated in accordance with [Clause 7](#), a wider range of pipe size, β , and Reynolds number may be considered.

The devices introduced into the pipe are called “primary devices”. The term primary device also includes the pressure tapplings. All other instruments or devices required for the measurement are known as “secondary devices”. This International Standard covers primary devices; secondary devices^{[1][5]} will be mentioned only occasionally.

This International Standard is divided into the following five parts:

- a) ISO 5167-1 gives general terms and definitions, symbols, principles, and requirements as well as methods of measurement and uncertainty that are to be used in conjunction with ISO 5167-1, ISO 5167-2, ISO 5167-3, ISO 5167-4, and ISO 5167-5.
- b) ISO 5167-2 specifies requirements for orifice plates, which can be used with corner pressure tapplings, D and $D/2$ pressure tapplings¹⁾, and flange pressure tapplings²⁾.
- c) ISO 5167-3 specifies requirements for ISA 1932 nozzles²⁾, long radius nozzles, and Venturi nozzles, which differ in shape and in the position of the pressure tapplings.
- d) ISO 5167-4 specifies requirements for classical Venturi tubes³⁾.
- e) This part of ISO 5167 specifies requirements for cone meters and includes a section on calibration.

Aspects of safety are not dealt with in ISO 5167 (all parts). It is the responsibility of the user to ensure that the system meets applicable safety regulations.

1) Orifice plates with ‘vena contracta’ pressure tapplings are not considered in ISO 5167 (all parts).

2) ISA is the abbreviation for the International Federation of the National Standardizing Associations, which was succeeded by ISO in 1946.

3) In the USA, the classical Venturi tube is sometimes called the Herschel Venturi tube.