



SLOVENSKI STANDARD SIST EN ISO 20456:2019

01-december-2019

Nadomešča:

SIST EN 29104:2001

SIST EN ISO 6817:1997

Merjenje pretoka fluida v zaprtih vodih - Navodilo za uporabo elektromagnetnih pretočnih meril za prevodne tekočine (ISO 20456:2017)

Measurement of fluid flow in closed conduits - Guidance for the use of electromagnetic flowmeters for conductive liquids (ISO 20456:2017)

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Messung des Durchflusses in geschlossenen Leitungen - Richtlinie für den Einsatz von elektromagnetischen Durchflussmessgeräten für konduktive Fluide (ISO 20456:2017)

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Mesurage du débit des fluides dans les conduites fermées - Lignes directrices pour l'utilisation des débitmètres électromagnétiques dans les liquides conducteurs (ISO 20456:2017)

Ta slovenski standard je istoveten z: EN ISO 20456:2019

ICS:

17.120.10 Pretok v zaprtih vodih Flow in closed conduits

SIST EN ISO 20456:2019

en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 20456

October 2019

ICS 17.120.10

Supersedes EN 29104:1993, EN ISO 6817:1995

English Version

Measurement of fluid flow in closed conduits - Guidance for the use of electromagnetic flowmeters for conductive liquids (ISO 20456:2017)

Mesurage du débit des fluides dans les conduites
fermées - Lignes directrices pour l'utilisation des
débitmètres électromagnétiques dans les liquides
conducteurs (ISO 20456:2017)

Messung des Durchflusses in geschlossenen Leitungen
- Richtlinie für den Einsatz von elektromagnetischen
Durchflussmessgeräten für konduktive Fluide (ISO
20456:2017)

This European Standard was approved by CEN on 26 August 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

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COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of ISO 20456:2017 has been prepared by Technical Committee ISO/TC 30 "Measurement of fluid flow in closed conduits" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 20456:2019 by CCMC.

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 April 2020, and conflicting national standards shall be withdrawn at the latest by April 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 29104:1993 and EN ISO 6817:1995.

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

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Endorsement notice
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INTERNATIONAL
STANDARD

ISO
20456

First edition
2017-09

**Measurement of fluid flow in closed
conduits — Guidance for the use
of electromagnetic flowmeters for
conductive liquids**

*Mesurage du débit des fluides dans les conduites fermées — Lignes
directrices pour l'utilisation des débitmètres électromagnétiques dans
les liquides conducteurs*

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Reference number
ISO 20456:2017(E)

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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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html. (standards.iteh.ai)

This document was prepared by Technical Committee ISO/TC 30, *Measurement of fluid flow in closed conduits*, Subcommittee SC 5, *Velocity and mass methods*.

This first edition of ISO 20456 cancels and replaces ISO 6817:1992, ISO 9104:1991 and ISO 13359:1998, which has been technically revised.

Introduction

[Clauses 3](#) to [7](#) cover the definitions, symbols and basic theory of electromagnetic flowmeters. This document does not cover insertion type meters, partially filled meters or meters for non-conductive and highly conductive fluids.

[Clause 8](#) covers installation types and practice, the different types of meter construction, transmitters, lay lengths and sizing, in order to achieve the best performance of the electromagnetic flowmeter in the field.

[Clauses 9](#) to [11](#) cover some methods of calibration, verification, evaluation, and uncertainty analysis, which can be useful for users or independent testing establishments to verify manufacturer's relative performance and to demonstrate suitability of application

The tests specified in this document are not necessarily sufficient for instruments specifically designed for unusually difficult duties. Conversely, a restricted series of tests may be suitable for instruments designed to perform within a limited range of conditions.

This document is for users and manufacturers.

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Measurement of fluid flow in closed conduits — Guidance for the use of electromagnetic flowmeters for conductive liquids

1 Scope

This document applies to industrial electromagnetic flowmeters used for the measurement of flowrate of a conductive liquid in a closed conduit running full. It covers flowmeter types utilizing both alternating current (AC) and pulsed direct current (DC) circuits to drive the field coils and meters running from a mains power supply and those operating from batteries or other sources of power.

This document is not applicable to insertion-type flowmeters or electromagnetic flowmeters designed to work in open channels or pipes running partially full, nor does it apply to the measurement of magnetically permeable slurries or liquid metal applications.

This document does not specify safety requirements in relation to hazardous environmental usage of the flowmeter.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

electromagnetic flowmeter

flowmeter which creates a magnetic field perpendicular to the direction of flow, so enabling the flowrate to be deduced from the induced voltage, U_v , produced by the motion of a conducting fluid through the magnetic field

Note 1 to entry: The electromagnetic flowmeter consists of a *sensor* (3.2) and a *transmitter* (3.3).

3.2

sensor

device containing at least the following elements:

- an electrically insulating meter tube through which the conductive fluid to be measured flows;
- one pair of electrodes across which the signal generated in the fluid is measured;
- an electromagnet for producing a magnetic field in the *meter tube* (3.4)

Note 1 to entry: The sensor produces a signal proportional to the flowrate and, in some cases, a *reference signal* (3.9). See 6.2.

Note 2 to entry: For a sensor, the wording primary device or flowtube has previously been used.