VOOLAVA KESKKONNA VOO MÕÕTMINE KINNISTES TORUSTIKES
Juhised Coriolis-arvestite valikuks, paigalduseks ja kasutamiseks (massivoo, tiheduse ja mahuvoo mõõtmine)

Measurement of fluid flow in closed conduits
Guidance to the selection, installation and use of Coriolis meters (mass flow, density and volume flow measurements)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

Käesolev Eesti standard EVS-ISO 10790:2007 "Voolava keskkonna voo mõõtmine kinnistes torustikes. Juhised Coriolis-arvestite valikuks, paigalduseks ja kasutamiseks (massivoo, tiheduse ja mahuvoo mõõtmine)" sisaldab rahvusvahelise standardi ISO 10790:1999+A1:2003 "Measurement of fluid flow in closed conduits – Guidance to the selection, installation and use of Coriolis meters (mass flow, density and volume flow measurements)" identset ingliskeelset teksti.

Standardi avaldamise korraldas Eesti Standardikeskus.

Standard EVS-ISO 10790:2007 on kinnitatud Eesti Standardikeskuse 13.12.2007 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teataja 2008. aasta jaanuarikuu numbris.

Standard on kättesaadav Eesti Standardikeskusest.

NATIONAL FOREWORD

This Estonian Standard EVS-ISO 10790:2007 consists of the identical English text of the International Standard ISO 10790:1999+A1:2003 "Measurement of fluid flow in closed conduits – Guidance to the selection, installation and use of Coriolis meters (mass flow, density and volume flow measurements)".

Estonian standard is published by the Estonian Centre for Standardisation.

This standard is ratified with the order of Estonian Centre for Standardisation dated 13.12.2007 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian Centre for Standardisation.

Käsitlusala

Käesolev rahvusvaheline standard annab suunised Coriolis-arvestite valikuks, paigalduseks, kalibreerimiseks, toimimiseks ning kasutamiseks voolavate keskkondade massivoo, tiheduse, mahuvoo ning teiste seonduvate parameetrite määramisel, esmalähenduses vedelike ja gaaside jaoks ühtemoodi. Gaaside jaoks annab standard juhised gaasi voo massikulu ja mahukulu määramiseks (kasutades eelnevalt määratud tiheduse väärtust). Standard annab ka asjakohaseid soovitusi mõõdetavate voolavate keskkondade kohta.

Coriolis-arvestite esmane kasutusotstarve on voo massikulu mõõtmine. Siiski on mõningatel arvestitel täiendavad võimalused voolavate keskkondade tiheduse ja temperatuuri määramiseks. Nende kolme suuruse mõõtmise kaudu võib määrata voo mahukulu ning teisi sellega seotud suurusi.

Põhimõtteliselt on gaasi vookulu mõõtmine võimalik mistahes Coriolis-arvestit kasutades. Juhised gaasi vookulu mõõtmisteks on toodud lisas E.

Käesolev standard on rakendatav peamiselt vedelike mõõtmisel ja kus võimalik, ka gaasi mõõtmisel.

ICS 17.120.10 Kulu torustikus

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10790 was prepared by Technical Committee ISO/TC 30, *Measurement of fluid flow in closed conduits*, Subcommittee SC 12, *Mass methods.*

This second edition cancels and replaces the first edition (ISO 10790:1994), which has been extended to include all measured and inferred parameters obtainable from a Coriolis meter including mass flow, density, volume flow and other related parameters.

Annexes A, B, C and D of this International Standard are for information only.

Introduction

This International Standard has been prepared as a guide for those concerned with the selection, testing, inspection, operation and calibration of Coriolis meters (Coriolis meter assemblies) for any kind of fluid.

A list of related standards is given in the bibliography.

Measurement of fluid flow in closed conduits — Guidance to the selection, installation and use of Coriolis meters (mass flow, density and volume flow measurements)

1 Scope

This International Standard gives guidelines for the selection, installation, calibration, performance and operation of Coriolis meters for the determination of mass flow, density, volume flow and other related parameters of fluids. It also gives appropriate considerations regarding the fluids to be measured.

The primary purpose of Coriolis meters is to measure mass flow. However, some of these meters offer additional possibilities for determining the density and temperature of fluids. From the measurement of these three parameters, volume flow and other related parameters can be determined.

The content of this International Standard is primarily applied to the metering of liquids. This International Standard also gives guidance within specified limits, to the metering of other fluids, mixtures of solids or gas in liquids, and mixtures of liquids. Although Coriolis meters may be used for gas measurement, specific guidance for gas measurement is not within the scope of this International Standard.

2 Terms and definitions

For the purpose of this International Standard, the following terms and definitions apply.

2.1
Coriolis meter
device consisting of a flow sensor (primary device) and a transmitter (secondary device) which primarily measures the mass flow by means of the interaction between a flowing fluid and the oscillation of a tube or tubes; it may also provide measurements of the density and the process temperature of the fluid

2.2
flow sensor (primary device)
mechanical assembly consisting of an oscillating tube, drive system, measurement sensor(s), supporting structure and housing

2.2.1
oscillating tube(s)
tube(s) through which the fluid to be measured flows

2.2.2
drive system
means for inducing the oscillation of the tube(s)

2.2.3
sensing device
sensor to detect the effect of the Coriolis force and to measure the frequency of the tube oscillations

2.2.4
supporting structure
support for the oscillating tube(s)