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Hydrometry - Minimum performance requirements and test procedures for water monitoring equipment - Devices for the determination of flow - Part 2: Closed conduit instrumentation

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

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Hydrometry - Minimum performance requirements and test procedures for water monitoring equipment - Devices for the determination of flow - Part 2: Closed conduit instrumentation

Hydrométrie - Exigences minimales de performance et modes opératoires d'essai pour les équipements de surveillance de l'eau - Dispositifs de mesure de l'écoulement - Partie 2 : Instruments de mesure pour écoulements en conduite fermée

Hydrometrie - Leistungsanforderungen und Prüfverfahren für Wasserüberwachungsgeräte - Geräte zur Bestimmung des Durchflusses - Teil 2: Messgeräte für geschlossene Rohrleitungen

This European Standard was approved by CEN on 13 February 2023.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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Contents

Page

European foreword

This document (EN 17694-2:2023) has been prepared by Technical Committee CEN/TC 318 “Hydrometry”, 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of an identical text or by endorsement, at the latest by November 2023, and conflicting national standards shall be withdrawn at the latest by November 2023.

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 standard is published in two parts:

— EN 17694-1, *Hydrometry — Minimum performance requirements and test procedures for water monitoring equipment — Devices for the determination of flow — Part 1: Open channel instrumentation*

— EN 17694-2, *Hydrometry — Minimum performance requirements and test procedures for water monitoring equipment — Devices for the determination of flow — Part 2: Closed conduit instrumentation*

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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Introduction

This document is a product standard for instrumentation for the determination of the flow of waters in closed conduits (e.g. effluent discharges from industrial installations, and wastewaters from sewage treatment works, water irrigation channels and water transfer channels). A closed conduit instrument (CCI) is a device that is normally fixed in position and used mainly to measure either volumetric flow-rate and/or total volume passed. Certain CCI, e.g. Coriolis devices measure mass flow-rate and/or total mass passed, from which volumetric flow may be derived, using the density of the water. This document defines general requirements, minimum performance requirements, and test procedures. A CCI that is shown, by means of the tests, to conform with the general requirements and performance requirements is considered to be fit for purpose. However, this document does not cover the installation and on-going use of a CCI, and also excludes instrumentation that is subject to separate legal control, for example, the Measuring Instruments Directive.

The acronym “CCI” is used throughout this document except where it is necessary to be specific about the particular type or component (e.g. sensor) of a device.

The general requirements and performance requirements specified in this document are intended to be independent of measurement technology and applicable to all CCIs. The general requirements include several features that are necessary to meet users’ applications and information that should be included in associated documents.

The performance tests comprise testing carried out under laboratory and field conditions. They are designed to determine, in a systematic and consistent way, the capability of CCI to make reliable measurements. The testing focuses on key performance characteristics. Statistical procedures are defined for evaluation of the test data.

Measurement ranges are not specified as part of the performance requirements though a minimum ratio (maximum measured value: minimum measured value) is specified. It is for the manufacturer of the CCI to decide on the measurement range over which the performance requirements are shown to be met by the specified test procedures. Similarly, it is for the CCI manufacturer to decide on the intended uses (applications) which will inform the design of the field trial.

Water monitoring equipment is widely used for compliance monitoring purposes under national and European regulations.

1 Scope

This document specifies general requirements, minimum performance requirements and test procedures for instrumentation used to measure either volumetric flow-rate and/or total volume passed of water in closed conduits. It covers all closed conduit instrument (CCI) technologies intended to operate in closed pressurized pipes and partially filled pipes. Requirements are expressed in volumetric units which may be converted to mass using the density of the water.

It is recognized that for some CCIs certain tests cannot be carried out.

The data obtained from the testing of CCIs in accordance with the requirements of the Measuring Instruments Directive [1] or EN ISO 4064-1 [2] can be used to meet, in part, the requirements specified in this document. However, for the avoidance of doubt, compliance with the requirements of this document does not equate to compliance with the requirements of the Measuring Instruments Directive or EN ISO 4064-1.

2 Normative references

There are no normative references in this document.