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Stationary source emissions - Quality assurance of automated measuring systems

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

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Stationary source emissions - Quality assurance of automated measuring systems

Émission des sources fixes - Assurance qualité des systèmes automatiques de mesurage

Emissionen aus stationären Quellen - Qualitätssicherung für automatische Messeinrichtungen

This European Standard was approved by CEN on 11 October 2014.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 14181:2014) has been prepared by Technical Committee CEN/TC 264 “Air quality”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2015 and conflicting national standards shall be withdrawn at the latest by May 2015.

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.

This document supersedes EN 14181:2004.

Annex J provides details of significant technical changes between this European Standard and the previous edition.

The first edition of this document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to support requirements in the EU Directives 2000/76/EC [1] and 2001/80/EC [2], which have been replaced by EU Directive 2010/75/EU [3], and may also be applicable for other purposes.

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.

Introduction

This European Standard describes the quality assurance procedures needed to assure that an automated measuring system (AMS) installed to measure emissions to air are capable of meeting the uncertainty requirements on measured values given by legislation, e.g. EU Directives [1], [2], [3] or national legislation, or more generally by competent authorities.

Three different quality assurance levels (QAL1, QAL2, and QAL3) are defined to achieve this objective. These quality assurance levels cover the suitability of an AMS for its measuring task (e.g. before or during the purchase period of the AMS), the validation of the AMS following its installation, and the control of the AMS during its ongoing operation on an industrial plant. An annual surveillance test (AST) is also defined.

The suitability evaluation (QAL1) of the AMS and its measuring procedure are described in EN 15267-3 and EN ISO 14956 where a methodology is given for calculating the total uncertainty of AMS measured values. This total uncertainty is calculated from the evaluation of all the uncertainty components arising from its individual performance characteristics that contribute.

1 Scope

This European Standard specifies procedures for establishing quality assurance levels (QAL) for automated measuring systems (AMS) installed on industrial plants for the determination of the flue gas components and other flue gas parameters.

This European Standard specifies:

— a procedure (QAL2) to calibrate the AMS and determine the variability of the measured values obtained by it, so as to demonstrate the suitability of the AMS for its application, following its installation;

— a procedure (QAL3) to maintain and demonstrate the required quality of the measurement results during the normal operation of an AMS, by checking that the zero and span characteristics are consistent with those determined during QAL1;

— a procedure for the annual surveillance tests (AST) of the AMS in order to evaluate (i) that it functions correctly and its performance remains valid and (ii) that its calibration function and variability remain as previously determined.

This European Standard is designed to be used after the AMS has been certified in accordance with the series of European Standards EN 15267.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15259:2007, *Air quality — Measurement of stationary source emissions — Requirements for measurement sections and sites and for the measurement objective, plan and report*

EN 15267-1, *Air quality — Certification of automated measuring systems — Part 1: General principles*

EN 15267-2, *Air quality — Certification of automated measuring systems — Part 2: Initial assessment of the AMS manufacturer's quality management system and post certification surveillance for the manufacturing process*

EN 15267-3, *Air quality — Certification of automated measuring systems — Part 3: Performance criteria and test procedures for automated measuring systems for monitoring emissions from stationary sources*

EN ISO 14956, *Air quality — Evaluation of the suitability of a measurement procedure by comparison with a required measurement uncertainty (ISO 14956)*