
**Emisije nepremičnih virov - Sistemi za zajem in vrednotenje podatkov (DAHS) - 3.
del: Specifikacija zahtev za preskus lastnosti sistemov za zajem in vrednotenje
podatkov**

Stationary source emissions - Data acquisition and handling systems - Part 3:
Specification of requirements for the performance test of data acquisition and handling
systems

Emissionen aus stationären Quellen - Datenerfassungs- und Auswerteeinrichtungen -
Teil 3: Festlegung von Anforderungen an die Eignungsprüfung von Datenerfassungs-
und Auswerteeinrichtungen

Émissions de sources fixes - Systèmes d'acquisition et de traitement de données - Partie
3 : Spécification des exigences relatives aux essais de performance des systèmes
d'acquisition et de traitement de données

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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European foreword

This document (EN 17255-3:2021) 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of an identical text or by endorsement, at the latest by April 2022, and conflicting national standards shall be withdrawn at the latest by April 2022.

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 is Part 3 of the EN 17255 series.

The EN 17255 series, published under the general title “Stationary source emissions — Data acquisition and handling systems”, specifies:

- requirements for the handling and reporting of data;
- requirements on data acquisition and handling systems;
- requirements for the performance test of data acquisition and handling systems;
- requirements for the installation and on-going quality assurance and quality control of data acquisition and handling systems.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

EN 17255-3:2021 (E)**Introduction**

This document forms part of a series of standards which, between them, govern the process for the quality assurance of data received by a data acquisition and handling system (DAHS) from automated measuring systems (AMS), being used for monitoring emissions from stationary sources and quality ensured to EN 14181.

The input data can be either in analogue representation or in digital form directly from an AMS or via a digital bus system. Inputs can include the data from the AMS, peripheral data needed for calculation of reported data and information on plant conditions needed to apply data selection criteria.

The data acquisition and handling system (DAHS) receives the raw data, as they are measured, averaged and presented by the AMS, and converts, averages, stores and reports data as required by legislation.

This series of standards suggests that the process of data handling is best performed in a dedicated DAHS. It does not preclude the use of other options for all or part of the process provided that it can be shown that they meet all of the requirements of the standard, particularly in relation to speed, accuracy, access, security and validation.

This series of standards applies to DAHS installed after the date of implementation.

EN 17255-3 specifies the performance test of DAHS.

NOTE 1 The certification of DAHS will be covered by the revised version of EN 15267-1 [5], which is currently in preparation.

NOTE 2 The manufacturing quality control of DAHS will be covered by the revised version of EN 15267-2 [6], which is currently in preparation.

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1 Scope

This document specifies the performance test of data acquisition and handling systems (DAHS). This includes:

- specification of test procedures;
- description of laboratory tests;
- requirements on the testing laboratory.

This document supports the requirements of EN 14181 and legislation such as the IED, MCPD and E-PRTR. It does not preclude the use of additional features and functions provided the minimum requirements of this document are met and that these features do not adversely affect data quality, clarity or access.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 17255-1:2019, *Stationary source emissions - Data acquisition and handling systems - Part 1: Specification of requirements for the handling and reporting of data*

EN 17255-2:2020, *Stationary source emissions - Data acquisition and handling systems - Part 2: Specification of requirements on data acquisition and handling systems*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 17255-1 and EN 17255-2 and the following apply.

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

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

3.1

testing laboratory

laboratory carrying out the performance test

3.2

documentation test

DT

verification of the correct DAHS documentation for a characteristic in accordance with the specified performance criterion

3.3

generic test

GT

demonstration of the capability of the DAHS to handle a characteristic in line with the specified performance criterion without use of specific test equipment and test procedures

EN 17255-3:2021 (E)**3.4
specific test
ST**

test of a characteristic of the DAHS by use of specific test equipment and test procedures to achieve a test result for comparison with the specified performance criterion

**3.5
remote data logger unit**

part of the DAHS that can be used to temporarily store raw data to avoid loss of data if the DAHS processing unit is offline

4 Symbols and abbreviations

AMS	automated measuring system
DAHS	data acquisition and handling system
DT	documentation test
ELV	emission limit value
E-PRTR	European pollutant release and transfer register
FLD	first level data
GT	generic test
IED	Industrial Emissions Directive
LTA	long-term average
MCPD	Medium Combustion Plant Directive
OPC	open platform communication
QAL2	second quality assurance level
QAL3	third quality assurance level
SSTA	standardized short-term average
ST	specific test
STA	short-term average
VSTA	validated short-term average

5 Performance testing process

The performance test shall be based on the scope of the intended applications of the DAHS specified by the manufacturer on the basis of the corresponding legislation, e.g. large combustion plants or waste incinerators under the IED. The test range shall cover the intended applications. Tests may be combined for different applications sharing the same performance criteria.

The performance test of DAHS shall be based on the performance criteria specified in EN 17255-1 and EN 17255-2. It consists of the following levels of testing:

- documentation test*: verification of the correct DAHS documentation for a characteristic in accordance with the specified performance criterion;
- generic test*: demonstration of the capability of the DAHS to handle a characteristic in accordance with the specified performance criterion without use of specific test equipment and test procedures;
- specific test*: test of a characteristic of the DAHS by use of specific test equipment and test procedures to achieve a test result for comparison with the specified performance criterion.

The testing shall be carried out by a testing laboratory having the competence to perform the test procedures specified in this document.

Table 1 gives an overview of the characteristics, the applicable performance criteria and the corresponding type of testing.

Table 1 — DAHS characteristics, performance criteria and type of testing
(DT: documentation test; GT: generic test; ST: specific test)

Subclause	Characteristic	Performance criteria	DT	GT	ST
6.2.1	Input data	EN 17255-1:2019, Clause 6	×		
6.2.2.1	Communication interfaces	EN 17255-2:2020, 6.2.2.1	×		
6.2.2.2	Analog communication	EN 17255-2:2020, 6.2.2.2			×
6.2.2.3	Digital communication	EN 17255-2:2020, 6.2.2.3			×
6.2.2.4	Sampling rate	EN 17255-2:2020, 6.2.2.4			×
6.2.3	Manual data input	EN 17255-2:2020, 6.2.3		×	
6.2.4	Remote data logger unit	EN 17255-2:2020, 6.2.4	×	×	
6.3.1	Validity of input data	EN 17255-2:2020, 6.3.1			×
6.3.2	First level data (FLD)	EN 17255-1:2019, Clause 7			×
6.3.3	Implementation of QAL3	EN 17255-1:2019, 7.6			×
6.4.1	Calculation procedures	EN 17255-1:2019, Clause 8	×	×	×
6.4.2	Warnings, alarms and violations	EN 17255-2:2020, 6.4.2	×		×
6.5.1	Output of reports	EN 17255-2:2020, 6.5.1	×		
6.5.2	Emission reports	EN 17255-1:2019, Table 3		×	
6.5.3	System reports	EN 17255-2:2020, 6.5.3		×	
6.6.1	Data storage capacity	EN 17255-2:2020, 6.6.1	×		
6.6.2	Time stamping	EN 17255-2:2020, 6.6.2	×	×	
6.6.3	Storage of FLD	EN 17255-2:2020, 6.6.3		×	
6.6.4	Storage of STA	EN 17255-2:2020, 6.6.4		×	
6.6.5	Storage of SSTA	EN 17255-2:2020, 6.6.5		×	
6.6.6	Storage of VSTA	EN 17255-2:2020, 6.6.6		×	
6.6.7	Storage of QAL3 data	EN 17255-2:2020, 6.6.7		×	
6.6.8	Storage of warnings, alarms and violations	EN 17255-2:2020, 6.6.8		×	
6.6.9	Storage of the event-log and configuration parameters	EN 17255-2:2020, 6.6.9		×	
6.7.1	Event log	EN 17255-2:2020, 6.7.1	×	×	
6.7.2	Configuration	EN 17255-2:2020, 6.7.2		×	
6.7.3	Export of data	EN 17255-2:2020, 6.7.3		×	
6.7.4	Test mode	EN 17255-2:2020, 6.7.4		×	
6.8.1	DAHS availability	EN 17255-2:2020, 6.8.1	×	×	
6.8.2	Tamper-proof data transfer and handling	EN 17255-2:2020, 6.8.2	×	×	
6.8.3	Preventing loss of data	EN 17255-2:2020, 6.8.3	×	×	
6.8.4	Data back-up	EN 17255-2:2020, 6.8.4	×	×	
6.8.5	DAHS identification	EN 17255-2:2020, 6.8.5	×	×	
6.8.6	Time management	EN 17255-2:2020, 6.8.6	×	×	
6.9	Documentation	EN 17255-2:2020, 6.9	×		

6 Test procedures

6.1 General

Clause 6 of this document specifies the test procedures for testing that the performance criteria specified in EN 17255-1 and in EN 17255-2:2020, Clause 6, are fulfilled.

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The numbers of the subclauses of [Clause 6](#) of this document are identical to EN 17255-2:2020, Clause 6.

All relevant tests shall be performed on one DAHS in the laboratory within the environmental condition limits specified by the manufacturer.

The testing laboratory shall select an appropriate number of significant digits when testing a calculation process to avoid that the test has a negative effect on the test results.

Tests can be performed in any order, unless otherwise specified.

The testing laboratory shall document for each test procedure whether the DAHS meets the relevant performance criteria. The environmental conditions pertaining during testing shall be recorded.

6.2 Data acquisition**6.2.1 Input data**

The testing laboratory shall demonstrate by a documentation test that the DAHS is designed to acquire the following input data for the intended applications:

- emission data;
- peripheral data;
- flow data;
- plant process data;
- manually entered data.

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6.2.2 Interfaces**6.2.2.1 General**

[SIST EN 17255-3:2022](https://standards.iteh.ai/catalog/standards/sist/abd6000f-f467-4848-bf25-734a1309e43c/sist-en-17255-3-2022)
<https://standards.iteh.ai/catalog/standards/sist/abd6000f-f467-4848-bf25-734a1309e43c/sist-en-17255-3-2022>

The testing laboratory shall verify by a documentation test that the DAHS provides analogue and/or digital communication interfaces.

6.2.2.2 Analog communication

Testing of the analog communication is a specific test.

The testing laboratory shall determine the resolution, the relative accuracy and the input range of the A/D converters according to the following procedure:

- a) The test for accuracy shall be performed for each channel at five equidistant signal levels spanning the complete input range.
- b) For each level the test shall be repeated three times.
- c) The difference between the mean value and the expected value at each signal level shall meet the performance criterion specified for accuracy in EN 17255-2:2020, 6.2.2.2.

The ability to handle live zero signals shall be tested by varying the input signal about zero point, e.g. about 4 mA or 2 V.

The testing laboratory shall check that the DAHS is able to receive hard-wired status signals and to handle these binary signals correctly.

The parameters determined shall meet the requirements specified in EN 17255-2:2020, 6.2.2.2.

6.2.2.3 Digital communication

Testing of the digital communication is a specific test.