CERTIFICATE

of Product Conformity (QAL1)

Certificate No.: 0000051687_03

DAHS:	CEM-DAS
Manufacturer:	ABB AG Stierstädter Str. 5 60488 Frankfurt/Main Germany
Test Institute:	TÜV Rheinland Energy & Environment GmbH

This is to certify that the data acquisition and handling system (DAHS) has been tested and found to comply with the standards EN 17255-1 (2019), EN 17255-2 (2020), EN 17255-3 (2021), BEP (2023)*, EFÜ (2017)*, EN 14181 (2014) as well as EN 15267-1 (2009) and EN 15267-2 (2023).

Certification is awarded in respect of the conditions stated in this certificate (this certificate contains 9 pages).
The present certificate replaces certificate 0000051687_02 dated 3 July 2024.

TÜVRheinland® CERTIFIED
Suitability Tested
EN 15267
QAL1 Certified
Regular Surveillance
www.tuv.com
ID 000005168

Publication in the German Federal Gazette (BAnz.) of 31 October 2025

German Federal Environment Agency (UBA)

Dessau, 23 March 2026

Dr. Marcel Langner
Head of Section II 4

This certificate will expire on:
22 March 2031

TÜV Rheinland
Energy & Environment GmbH
Cologne, 20 March 2026

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Test institute accredited to EN ISO/IEC 17025 by DAkkS (German Accreditation Body).
This accreditation is limited to the accreditation scope defined in the enclosure to the certificate D-PL-11120-02-00.

* BEP (2023) Uniform Practice in monitoring emissions 2023 and
EFÜ (2017) teletransmission definition 2017 (remote emission control)

Test report:	EuL/21265723/B dated 21 February 2025
Initial certification:	1 August 2016
Expiry date:	22 March 2031
Publication:	BAnz AT 31.10.2025 B5, chapter II No. 1.1

Approved application 13
The tested data acquisition and handling system (DAHS) is suitable for the continuous recording and evaluation of emission measurement data at installations in accordance with TA Luft:2021, the 1st BImSchV:2021, the 2nd BImSchV:2020, the 13th BImSchV:2021 (Directive 2010/75/EU, Chapter III), the 17th BImSchV:2024 (Directive 2010/75/EU, Chapter IV), the 27th BImSchV:2013, the 30th BImSchV:2022 and the 31st BImSchV:2024 (Directive 2010/75/EU, Chapter V). The tests were carried out taking into account with the Federal Standard Practice (2023). Data transmission between the AMS and the DAHS is analogue (0 - 20 mA) and digital (VDI 4201 Modbus, 2012).

The system also provides remote emission data transmission via modem and FTPES.

The tests were carried out as a performance test in the laboratory. In the laboratory test, different types of installations were simulated.

The DAHS is approved for the ambient temperature range of +5 °C to +40 °C.

The notification of suitability of the DAHS, performance testing and the uncertainty calculation have been effected on the basis of the regulations applicable at the time of testing. As changes in legal provisions are possible, any potential user should ensure that this DAHS is suitable for monitoring the emission limit values relevant to the application.

Any potential user should ensure, in consultation with the manufacturer, that this DAHS is suitable for the intended purpose.

Note
The legal regulations mentioned correspond to the current state of legislation during certification. Each user should, if necessary, in consultation with the competent authority, ensure that this DAHS meets the legal requirements for the intended use. In addition, it cannot be ruled out that legal regulations governing the use of a measuring device for emission monitoring may change during the lifetime of the certificate.

Basis of the certification
This certification is based on:

- Test report EuL/21265723/B dated 21 February 2025 issued by TÜV Rheinland Energy & Environment GmbH
- Suitability announced by the German Federal Environment Agency (UBA) as the relevant body
- The ongoing surveillance of the product and the manufacturing process

Publication in the German Federal Gazette: BAnz AT 31.10.2025 B5, chapter II No. 1.1, Announcement by UBA dated 27 August 2025:

Data acquisition and handling system:
CEM-DAS

Manufacturer:
ABB AG, Frankfurt

Field of application:
data acquisition and handling and remote control for plants with continuous monitoring according to EN 17255, BEP2023 and plants under the TEHG (Emissions Trading Act) for installations with continuous monitoring.

Tested features during performance testing:
- Analogue data transmission
- Digital data transmission in line with VDI standard 4201, Part 1 and Part 3 (Modbus)
- Remote emission data transmission via modem and FTPES

Software versions:
Data evaluation and parameterisation

CEM-DAS:	1.5.0
Oracle –data base:	12, 18, 19, 21
PostgreSQL:	13, 16

Data acquisition:

DAA	1.5 (0)

Restrictions:
None

Notes:
1. The emission data acquisition and evaluation consists of two parts: the front end system for recording analogous and digital status signal and a PC on which the programme suite CEM-DAS as well as the DAA programme for data acquisition are installed. The following DAA-I/O-Modules are available as frontend systems: IO8/AI, IO8/DI, IO8/AIDI, IO4/AI, IO4/DI, IO4/AIDI, IO4/DIDO.
2. The computer has the digital interface Modbus (serial and TCP/IP) according to VDI 4201 Part 1 (General) and Part 3 (Modbus).
3. The programme is also offered as small edition “CEM-DAS sE” with 12 analogue inputs and without remote emission control.
4. Optionally, the DAA program can also run on another PC for data transfer.
5. Supplementary test (adaptation to EN 17255 and BEP2023) to the notifications of the Federal Environment Agency of 28 June 2019 (BAnz AT 22.07.2019 B8, chapter IV number 1.4) and of 2 April 2025 (BAnz AT 19.05.2025 B3, chapter IV notification 1).

Test Report:
TÜV Rheinland Energy & Environment GmbH, Cologne
Report No.: EuL/21265723/B dated 21 February 2025

Certified product

The certificate applies to DAHS confirming to the following description:

The emission data acquisition and analysis system consists of the CEM-DAS software package and the systems for acquiring analogue and digital signals.

The following systems are used to acquire analogue and status signals:

- DAA-IO modules

DAA-IO modules
The DAA-IO modules feature a 16-bit analogue-to-digital converter. A value is sampled every 25 ms in the IO modules.
The moving AIN value calculated every 25 ms is then transmitted to the DAA every 500 ms and averaged there to form a 5-second FLD. If two AIN values differ by more than 1 mA, the new AIN value is immediately transmitted to the DAA

DAA
The DAA programme handles data acquisition from the input modules, averaging, conversion in accordance with the calibration function, normalisation and validation of the measured values, and forwards the short-term averages to the CEM-DAS software package. In addition, the raw values are also forwarded as 5-second averages for data archiving. The DAA programme can run on the same PC as UmweltOffice, on a standalone PC or on the DAA IOC controller.

The CEM-DAS software, which is connected downstream of the data acquisition units, takes over the data for storage and further processing. The computer carries out classification and evaluation in accordance with the guidelines and generates the required reports and logs.
The PC running the CEM-DAS programme can receive and process data from multiple data acquisition units. To this end, systems are set up in CEM-DAS for each data acquisition unit and assigned to that unit. Data evaluation can be carried out separately for each system or jointly for multiple systems. This also applies to remote data transmission.

Report generation and remote data transmission
DAA-IO modules are used to acquire analogue and status signals; these modules perform the analogue-to-digital conversion, have a sampling rate of 25/sec and utilise 16-bit analogue-to-digital converters. The DAA-IO modules are connected to the computer via TCP/IP Ethernet.

DAA-IO modules versions:

Modul	AI	DI	AO	DO
DAA – IO8/AI	28	1		1
DAA – IO8/DI		29		1
DAA – IO8/AIDI	14	15		1
DAA – IO8/AO		1	14	1
DAA – IO4/AI	12	1		1
DAA – IO4/DI		13		1
DAA – IO4/AIDI	6	7		1
DAA – IO4/DIDO		7		7
DAA – IO4/AO		1	6	1
DAA – IO4/DO		1		13
DAA – IO4/AODO		1	2	9
DAA – IOC+	8	12		4

AI = analogue input; DI = digital input, AO = anologue output, DO = digital output

DAA-IO modules have the following specifications:

- Protection class: IP20
- Ambient temperature: Operating: 0 … 50 °C, Storage: -40 ... +80 °C
- Power supply: via Power over Ethernet (PoE, IEEE802.3af)
- Alternatively: via screw terminals, ex. supply (18–48 V DC)
- Electrical isolation: 1500 volts (isolation distance >= 2 mm)
- Power consumption: maximum 8 watts
- Network: 10BaseT on RJ45
- Measurement data transmission: via UDP/IP, TCP/IP

Analogue inputs

- AD converter: per input
- T – correction: per input
- Resolution: 0.763 µA (15 bits)
- Accuracy: 0.04 % FSR (Full Scale Range: 25 mA)
- Sampling interval: approx. 25 ms
- Measuring range: 0 … > 24 mA
- Terminal resistance: 50 Ω
- Reverse polarity protection, galvanic isolation between inputs and to the module

Digital inputs

- External voltages: 12 … 25 V AC or 12 … 60 V DC
- Potential-free contacts: require a 24 V power supply
- Internal resistance: > 50 kΩ
- Sampling interval: approx. 2 ms
- Reverse polarity protection, galvanic isolation between inputs and from the module

The downstream computer running the CEM-DAS software is a PC with the following minimum specifications:

- Intel Xeon E-2314
- 8 GB
- 2 hard drives □ 500 GB
- Ethernet interface for DAA-IO modules
- serial (RS 232) / USB interface for modem
- USB interfaces
- Operating system Windows 11 (64-bit) or Windows Server 2019 (64-bit) and 2022 (64-bit)
- Radio clocks (e.g. DCF77 receivers), internet or in-house NTP protocols, or GPS receivers.
- External modem (if EFÜ is required)
- CD / DVD-ROM (optional burner)

The DAA programme can run on the same computer as the CEM DAS. Alternatively, the DAA programme can also run on a DAA-IOC controller or a DAA-LPM controller, each acting as a DIN-rail module computer, for data transfer.

For data backup, the PC is equipped with a second hard disk for data mirroring, a backup drive and/or an Ethernet interface for data backup to another PC or network. A printer can be connected to the computer. This is used to print daily logs, messages and limit value exceedances.

General notes

This certificate is based upon the equipment tested. The manufacturer is responsible for ensuring that on-going production complies with the requirements of the EN 15267. The manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management systems shall be subject to regular surveillance.

If a product of the current production does not conform to the certified product, TÜV Rheinland Energy & Environment GmbH must be notified at the address given on page 1.

A certification mark with an ID-Number that is specific to the certified product is presented on page 1 of this certificate. This certification mark may be applied to the product or used in advertising materials for the certified product.

This document as well as the certification mark remains property of TÜV Rheinland Energy & Environment GmbH. With revocation of the publication the certificate loses its validity. After the expiration of the certificate and on request of TÜV Rheinland Energy & Environment GmbH this document shall be returned and the certificate mark must not be employed anymore.

The relevant version of this certificate and its expiration is also accessible on the internet: **qal1.de**.

History of documents
Certification of CEM-DAS / CEM-DAS sE is based on the documents listed below and the regular, continuous monitoring of the Quality Management System of the manufacturer:

Initial certification according to EN 15267
Certificate No. 0000051687_00: 19 August 2016
Expiry date of the certificate: 31 July 2021
Test report: 936/21230570/B dated 26 February 2016
TÜV Rheinland Energie und Umwelt GmbH
Publication: BAnz AT 01.08.2016 B11, chapter II number 1.1
UBA announcement dated 14 July 2016

Notifications
Statement issued by TÜV Rheinland Energy GmbH dated 12 October 2016
Publication: BAnz AT 15.03.2017 B6, chapter V notification 12
UBA announcement dated 22 February 2017
(Software changes, Notice: version 1.2.0 may no longer be used.)

Statement issued by TÜV Rheinland Energy GmbH dated 8 March 2017
Publication: BAnz AT 31.07.2017 B12, chapter II notification 1
UBA announcement dated 13 July 2017
(Software changes)

Statement issued by TÜV Rheinland Energy GmbH dated 2 May 2018
Publication: BAnz AT 17.07.2018 B9, chapter III notification 1
UBA announcement dated 3 July 2018
(Software changes)

Supplementary testing according to EN 15267
Certificate No. 0000051687_01: 5 November 2019
Expiry date of the certificate: 21 July 2024
Test report: 936/21242378/B dated 1 March 2019
TÜV Rheinland Energy GmbH
Publication: BAnz AT 22.07.2019 B8, chapter IV number 1.4
UBA announcement dated 28 June 2019

Notifications
Statement issued by TÜV Rheinland Energy GmbH dated 24 September 2019
Publication: BAnz AT 24.03.2020 B7, chapter IV notification 9
UBA announcement dated 24 February 2020
(Software changes)

Renewal of certificates
Certificate No. 0000051687_02: 3 July 2024
Expiry date of the certificate: 21 July 2029

Notifications
Statement issued by TÜV Rheinland Energy & Environment GmbH dated 4 March 2024
Publication: BAnz AT 31.10.2024 B9, chapter IV notification 1
UBA announcement dated 21 August 2024
(Software changes anf additional functions)

Statement issued by TÜV Rheinland Energy & Environment GmbH dated 20 December 2024
Publication: BAnz AT 19.05.2025 B3, chapter IV notification 1
UBA announcement dated 2 April 2025
(Software changes)

Supplementary testing according to EN 15267
Certificate No. 0000051687_03: 23 March 2026
Expiry date of the certificate: 22 March 2031
Test report: EuL/21265723/B dated 21 February 2025
TÜV Rheinland Energy & Environment GmbH
Publication: BAnz AT 31.10.2025 B5, chapter II number 1.1
UBA announcement dated 27 August 2025