TÜVRheinland®
Precisely Right.

CONFIRMATION

of Product Conformity (QAL1)

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

This is to certify that the AMS has been tested according to 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), EN 15267-2 (2023).

The DAHS underwent independent expert testing and was accepted.
This confirmation is valid up to the publication of the certificate,
but no longer than 6 Months from the date of issue
(this document contains 6 pages).

This confirmation is valid until: 30 April 2026

TÜV Rheinland Energy & Environment GmbH
Cologne, 4 July 2025

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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 certificate D-PL-11120-02-00.

* BEP (2023) Uniform practice in monitoring emissions 2023 and
EFÜ (2017) Tele transmission definition 2017 (remote emission control)

Test Report:	EuL/21265723B vom 21. Februar 2025
Initial certification:	1 August 2016
Expiry date:	30 April 2026

Approved application
The tested data acquisition and handling system (DAHS) is suitable for emission data acquisition and evaluating emission measurements at installations with continuous monitoring. The data transmission between the AMS and the DAHS can carry out analogous (0 - 20 mA) or over a digital interface (VDI 4201 Modbus: EIA-485, seriell, Ethernet).
The system contains also the tele transmission of emission data over modem or FTPS connection.

The tests were carried out as a performance test in the laboratory. All type of plants were simulated in the laboratory test.

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

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

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 confirmation
This confirmation is based on:

- Test report EuL/21265723B vom 21. Februar 2025 issued by TÜV Rheinland Energy & Environment GmbH
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approval by an independent body
- Suitability announced by the relevant body.

AMS designation:
CEM-DAS

Manufacturer:
ABB AG, Frankfurt am Main

Field of application:
Data acquisition, evaluation and remote control for plants with continuous monitoring according to EN 17255, BEP2023 and plants under the Greenhouse Gas Emissions Trading Act .

Measuring ranges during performance testing:
- analogue data transmission
- digital data transmission in line with VDI standard 4201, part 1 (general) and part 3 (Modbus)
- remote emission control via modem and FTPS

Software version:
Data evaluation and parameterisation

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

Data acquisition:

DAA	1.5 (000)

Restrictions:
none

Notes:
1. Emission data acquisition and evaluation consists of the front-end system for recording analogue and status signals and a PC with the CEM-DAS program package and the DAA program for data transfer. The DAA IO modules are available as front-end systems: IO8/AI, IO8/DI, IO8/AIDI, IO4/AI, IO4/DI, IO4/AIDI, IO4/DIDO are available as front-end systems.
2. The computer has the digital Modbus interface (serial and TCP/IP) in accordance with VDI 4201 Sheet 1 (General) and Sheet 3 (Modbus).
3. The program is also available as a small edition "CEM-DAS sE" with 12 analogue inputs and without EFÜ.
4. Optionally, the DAA programme can also be run on another PC for data transfer.
5. Supplementary test (test according 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 1.3) and of 31 August 2024 (BAnz AT 31.10.2024 B9, chapter IV 2. notification)

Test Institute:
TÜV Rheinland Energy & Environment GmbH, Cologne
Report No.: EuL/21265723B vom 21. Februar 2025

Tested product

This confirmation applies to automated measurement systems conforming to the following description:

The CEM-DAS DAHS comprises the following parts:

- TALAS/7 IO modules for analogue and digital data transmission,
- digital data transmission according to VDI 4201 parts 1 and 3,
- one or more PCs
- DAA software
    - for connecting the TALAS/7 I/O modules and
    - the digital interface as defined in VDI 4201 and
    - for data evaluation,
- CEM-DAS software package for data transfer from DAA, classification,

Report creation and data transmission

TALAS/7 IO modules are used to receive analogue and status signals; the modules perform analog-to-digital conversion and have a sampling rate of 40/sec and use 16-bit analog-to-digital converters. The TALAS/7 IO modules are connected to the computer via TCP/IP Ethernet. These TALAS/7 IO modules keep being purchased from Siempelkamp NIS Ingenieurgesellschaft mbH.

The TALAS/7 IO modules are available in the following versions:

Module	AI	DI	AO	DO
TALAS/7 – IO8/AI	28	1		1
TALAS/7 – IO8/DI		29		1
TALAS/7 – IO8/AIDI	14	15		1
TALAS/7 – IO8/AO		1	14	1
TALAS/7 – IO4/AI	12	1		1
TALAS/7 – IO4/DI		13		1
TALAS/7 – IO4/AIDI	6	7		1
TALAS/7 – IO4/DIDO		7		7
TALAS/7 – IO4/AO		1	6	1
TALAS/7 – IO4/DO		1		13

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

The TALAS/7 IO modules have the following technical specifications:

- Degree of protection: IP20
- Galvanic isolation: 1500 Volt (air break >= 2 mm)
- Network: 10BaseT on RJ45

Analogue inputs

- A/D converter: per input with T correction
- Resolution: 0.763 µA (15 Bit)
- Accuracy: 0.04 % FSR (Full Scale Range: 25 mA)
- Scan rate: ~ 25 ms
- Measured range: 0 … > 24 mA
- Load: 50 Ohm
- Protected against polarity reversal, galvanic isolation between pins and from the module

Digital inputs

- External voltages: 12 … 230 V AC/DC
- Potential-free contacts: require a 24V power supply
- Internal resistance: > 50 kOhm
- Scan rate: ~ 2 ms
- Protected against polarity reversal, galvanic isolation between pins and from the module

Measured values and status signals can also be transferred via a digital interface which works with the Modbus protocol according to VDI 4201 parts 1 and 3. The data transfer takes place via TCP/IP directly to the computer operating the DAA software. A Modbus protocol converter is used for digital data transmission according to EIA-485 serial, which converts “serial to TCP/IP”.

The DAA program carries out the data transfer (from the IO modules and the digital interface), the averaging, the conversion according to the calibration function, the standardization and the validation of the measured values for both the analogue input modules and the digital interface and forwards these to the CEM-DAS program package. Moreover, raw signals are transferred as 5 sec-averages for the purpose of documenting data. The DAA program can run on the same computer as the CEM-DAS as well as on a stand-alone computer.

The computer with the CEM-DAS program suite takes over the data for storage and further processing. The computer classifies and evaluates data in accordance with the applicable provisions and generates the required messages and protocols.

The PC operating CEM-DAS is able to receive and process data from several data recording units. For this purpose, clusters are set up in the programme for each and assigned to a data acquisition unit. Data evaluation can thus be performed for each cluster individually or for several clusters combined. This also applies to remote emission control.

The following minimum configuration of the computers with the programs DAA and the CEM-DAS suite are required:

- Intel Dual Core 2 or equivalent processor
- 2 GB for 32bit Windows 7 or 4 GB for 64bit Windows 7/Server 2008
- 2 hard drives >= 500 GB
- Ethernet interface for TALAS/7 IO modules and digital interfaces
- serial (RS232)/USB port for modem
- Parallel interface/USB interface for printer
- Windows 7 or Windows Server 2008 operating system
- DCF77 receiver
- External modem
- CD/DVD ROM (optional writer)

For backup purposes, the PC has been equipped with a second hard drive for data mirroring, a backup drive (e.g. CD writer) and/or an Ethernet interface to backup data on a separate PC.

The evaluation system was tested on the basis of the following requirements:

- EN 17255 - Stationary source emissions - Data acquisition and handling systems
  Part 1: (2019) Specification of requirements for the handling and reporting of data
  Part 2: (2020) Specification of requirements on data acquisition and handling systems
  Part 3: (2021) Specification of requirements for the performance test of data acquisition and handling systems.
- Uniform Practice in monitoring emissions,
  Circular from Federal Environment Ministry of 2023-07-31 – AG C I 2 – 5025/001
- Remote emission control (EFÜ) / interface definition
  revised edition dated April 2017
- Technical guideline VDI 4204-01 (2022) - Evaluation of emission measurements - Determination of characteristic quantities for continuous emission monitoring
- Technical guideline VDI 4201
  Performance criteria on automated measuring and electronic data evaluation systems for monitoring emissions - Digital interface -
  part 1 - General requirements (2010)
  part 3 - Specific requirements for Modbus (serial and TCP/IP) (2012)
- EN 14181 2014 (Stationary source emissions
  - Quality assurance of automated measuring systems)
  Use of this regulation with regard to the data evaluating of emission measuring systems
- Directive 2010/75/EU on industrial emissions (IED) of 24 November 2010
  (integrated pollution prevention and control)
- Directive 2015/2193/EC for medium combustion plants of 25 November 2015
  (on the limitation of emissions of certain pollutants into the air from medium combustion plants)
- 13th BImSchV of 2021-07-06
  Ordinance on large firing, gas turbine and combustion engine installations
- 17th BImSchV of 2013-05-02 changed 2024-02-13
  Ordinance on the Incineration and Co-Incineration of Waste
- 44th BImSchV of 2019-06-13 changed 2022-10-12
  Ordinance on medium-sized firing, gas turbine and combustion engine plants