

CONFIRMATION

of Product Conformity (QAL1)

Certified AMS: AF22e for SO₂

Manufacturer: ENVEA
111, Boulevard Robespierre
78304 Poissy Cedex
France

Test Institute: TÜV Rheinland Energy & Environment GmbH

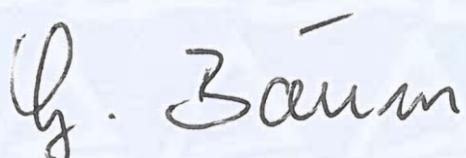
**This is to certify that the AMS has been tested
and found to comply with the standards
VDI 4202-1 (2018), EN 14212 (2012), EN 14212 (2024)
EN 15267-1 (2009) and EN 15267-2 (2023).**

The AMS underwent independent expert testing and was accepted.

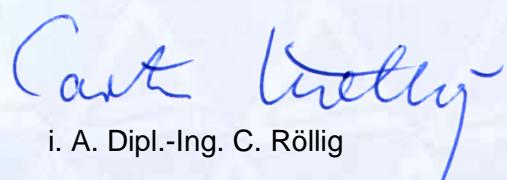
This confirmation is valid up to the publication of the certificate,
but no longer than 6 months from the date of issue
(this document contains 4 pages).

This confirmation is valid until: 30 April 2026

TÜV Rheinland Energy & Environment GmbH
Cologne, 4 July 2025



i. V. Dipl.-Ing. G. Baum



i. A. Dipl.-Ing. C. Röllig

confirmation:

4 July 2025

Test report: 936/21228317/C dated 18 December 2015 and Addendum EuL/21264142/A of 7. February 2025

Expiry date: 30 April 2025

Approved application

The tested AMS is suitable for continuous ambient air monitoring of SO₂ (stationary operation).

The suitability of the AMS for these applications was assessed based on a laboratory test and a 3-month field test.

The AMS is approved for an ambient temperature range of +0°C to 40°C.

The notification of suitability of the AMS, 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 AMS is suitable for monitoring the measured values relevant to the application.

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

Basis of the confirmation

This confirmation is based on:

- Test report 936/21228317/C dated 18 December 2015 of TÜV Rheinland Energie und Umwelt GmbH and Addendum EuL/21264142/A of 7. 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

confirmation:

4 July 2025

Notification of the Federal Environment Agency of 14 July 2016 (BAnz AT 01.08.2016 B11, Chapter III Number 2.1) and of 02 April 2025 (Banz AT 19.05.2025 B3, Chapter IV, 90th notification).

The current software version for the AF22e*/AF22e measuring system for SO2 from ENVEA is

v1.3.a

From software version v1.3.a, the measuring system fulfils the requirements of EN 14212 (edition 2024). An addendum to the test report with the report number EuL/21264142/A can be viewed on the Internet at www.qal1.de.

confirmation:

4 July 2025

Tested product

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

The measuring principle of the AF 22e is based on the principle of UV fluorescence. Sampling is done by a pump at the end of the circuit via a Teflon tube attached to the back of the unit. A Teflon filter provides protection from dust.

The sample to be analysed is first passed through a carbon kicker, which removes the aromatic hydrocarbons it contains. The carbon kicker consists of two concentric tubes with the inner tube made of a special polymer.

The sample to be analysed, which contains aromatic hydrocarbons, is fed in via the inner tube. The aromatic hydrocarbon molecules reach the external tube, which is flushed with a zero air, by permeation. The hydrocarbon-free sample is then passed into a reaction chamber where it is irradiated with ultraviolet light (centred on 214 nm). The wavelength of 214 nm corresponds to the absorption wavelength of SO₂ molecules.

A photodiode measures the ultraviolet radiation generated by the UV lamp. This measurement is taken into account during signal processing to compensate for any fluctuations in UV energy.

The molecules emit a specific fluorescence in ultraviolet light, which is optically filtered between 300 and 400 nm at the output. This fluorescence is visualized by the PM tube placed near the reaction chamber.

The main switch of the measuring system and a TFT-LCD colour display with background lighting and touch screen is located at the front of the instrument. The SO₂ analyser AF 22e is operated via this touch-screen display. The AF 22e* version is identical to the AF 22e unit version (except for the front), but does not have its own display. The AF 22e* version of the unit is operated exclusively via Ethernet on an externally connected PC.

Fluid inputs and outputs as well as electrical connections are located on the rear side of the AMS.