

CONFIRMATION

of Product Conformity (QAL1)

Approved AMS: AR602Z/NNHg for Hg

Manufacturer: Opsis AB
Skytteskogsvägen 16
24402 Furulund
Sweden

Test Institute:: TÜV Rheinland Energy & Environment GmbH

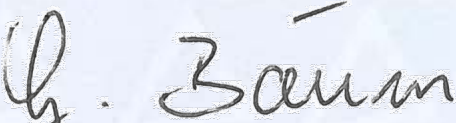
**This is to certify that the AMS has been tested
according to the standards**


**EN 15267-1 (2009), EN 15267-2 (2023), EN 15267-3 (2007)
as well as EN 14181 (2014).**

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: 14 August 2024

TÜV Rheinland Energy & Environment GmbH
Cologne, 15 March 2024


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


i. A. Dipl.-Ing. C. Röllig

www.umwelt-tuv.eu
tre@umwelt-tuv.eu
Tel. +49 221 806-5200

TÜV Rheinland Energy & Environment GmbH
Am Grauen Stein
51105 Köln

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.

Confirmation:
15 February 2024

Test Report: EuL/21255229/B dated 2 June 2023

Expiry date: 14 August 2024

Approved application

The tested AMS is suitable for use at plants according to Directive 2010/75/EC, chapter IV (waste incineration plants / 17th BImSchV:2021). The measured ranges have been selected so as to ensure as broad a field of application as possible.

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a 6 month field test at a waste incineration.

The AMS is approved for an ambient temperature range of +5 °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 emission limit values relevant to the application.

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

Note

The legal regulations mentioned do not correspond to the current state of legislation in every case. Each user should, if necessary, in consultation with the competent authority, ensure that this AMS 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/21255229/B dated 2 June 2023 issued by TÜV Rheinland Energy GmbH
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approval by an independent body

Confirmation:
15 February 2024

AMS designation:

AR602Z/NNHg for Hg

Manufacturer:

Opsis AB

Field of application:

For plants to the 17th BImSchV

Measuring ranges during performance testing:

Component	Certification range	Supplementary measuring ranges		Unit
Hg	0 – 10	0 – 45	0 – 100	µg/m ³

Software version: 7.21

Restrictions: none

Notes:

1. A test gas generator, e.g. HovaCal, must be available for the regular control of the reference point of the Hg component in the maintenance interval.
2. The length of the heated sample gas line was 10 m in the laboratory test and field test.
3. The SO₂ component is determined in the heated measuring cell for cross-sensitivity compensation of the Hg component.
4. The maintenance interval is three months.

Test Institute:

TÜV Rheinland Energy GmbH, Cologne
Report No.: EuL/21255229/B dated 2 June 2023

Confirmation:
15 February 2024

Tested product

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

The measuring device AR602Z/NNHg works according to the principle of UV absorption (DOAS).

The measuring device works extractive and consists of the following components:

- Rack with the heated extractive measuring cell, converter, ejector pump, signal outputs.
- AR602Z/N UV analyzer,
- heated sampling probe type M&C SP2000 (painted yellow)
- fiber optic cable (glass fiber cable)
- a heated sample gas line (length 10 m)

The extractive measuring bench consists of a total of three 2 m measuring cells. The gas to be measured is fed to the measuring cell via a heated sampling probe (M&C SP2000) and a heated sample gas line (length 10 m). The sampling probe has a separate calibration gas connection. This is located in front of filters and is therefore suitable for external test gas application as well as adjustment and calibration.

The gas outlet is located on the opposite side of the measuring cell. To ensure a constant gas flow through the cell, a suction jet pump is mounted at the outlet end of the measuring cell.

The measuring cell, catalyst and suction jet pump are insulated with mineral wool. The measuring cell is heated, as are the sampling probe, the sample gas line and the catalyst.

A light emitter unit is installed at the ends of the measuring bench, as well as the light receiver opposite.

The light emitter emits a light beam that is guided through the measuring cell. The light beam is guided through all 3 measuring cells one after the other by deflection mirrors. This results in an active measuring path length of 6 m in the heated measuring bench.

In the receiver, the emitted light is detected and focused onto an optical waveguide (fiber optic cable).

The analyzer is a grating spectrometer (Czerney-Turner principle with a 0.5 m light path). Approximately 100 sampling signals per second are recorded. The detector current is converted by a 12-bit A/D converter into a digital signal, which is then stored and summed in a multi-channel register.

One measurement cycle for Hg lasts 30 seconds. In addition, after each Hg cycle, the measurement device performs a 10 second SO₂ measurement cycle. The SO₂ value measured, if any, is used to correct for cross-sensitivity effects due to SO₂ present in the measuring cell.