

# CERTIFICATE

## of Product Conformity (QAL1)

Certificate No.: 0000081149\_00

**Certified AMS:** Dust Monitor S305QAL/N for dust

**Manufacturer:** Opsis AB  
Skytteskogsvägen 16  
24402 Furulund  
Sweden

**Test Institute:** TÜV Rheinland Energy GmbH

**This is to certify that the AMS has been tested  
and found to comply with the standards  
EN 15267-1 (2009), EN 15267-2 (2009), EN 15267-3 (2007)  
and EN 14181 (2014).**

Certification is awarded in respect of the conditions stated in this certificate  
(this certificate contains 6 pages).



Suitability Tested  
EN 15267  
QAL1 Certified  
Regular  
Surveillance

www.tuv.com  
ID 0000081149

Publication in the German Federal Gazette  
(BAnz) of 28 July 2022

German Environment Agency  
Dessau, 09 August 2022

This certificate will expire on:  
27 July 2027

TÜV Rheinland Energy GmbH  
Cologne, 08 August 2022



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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.

**Test report:** 936/21254752/A dated 12 January 2022  
**Initial certification:** 28 July 2022  
**Expiry date:** 27 July 2027  
**Publication:** BAnz AT 28.07.2022 B4, chapter I No. 1.1

### Approved application

The tested AMS is suitable for use at plants according to Directive 2010/75/EC, chapter III (13th BImSchV:2021), chapter IV (17th BImSchV:2021), Directive 2015/2193/EC (44th BImSchV:2021), 30th BImSchV:2019, TA-Luft:2021 and 27th BImSchV:2013. 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 7 month field test at a power plant.

The AMS is approved for an ambient temperature range of -20° to +50°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 installation at which it will be installed.

### Note:

The legal regulations mentioned do correspond to the current state of. 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 certification

This certification is based on:

- Test report 936/21254752/A dated 12 January 2022 of TÜV Rheinland Energy 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 28.07.2022 B4, chapter I No. 1.1,  
Announcement by UBA dated 28 June 2022:

**AMS designation:**

Dust Monitor S305QAL/N for dust

**Manufacturer:**

OPSIS AB, Furulund, Schweden

**Field of application:**

For plants requiring approval and plants according to the 27th BImSchV, 30th BImSchV and 44th BImSchV.

**Measuring ranges during the performance test:**

Component	Certification range	additional range		Unit
Dust	0 - 7.5	0 - 15	0 - 100	mg/m <sup>3</sup>

**Software version:** 3.2.4

**Restrictions:**

1. Use in exhaust gases saturated with water vapor is not possible. Similarly, droplet emissions lead to an influence on the measured dust concentration.
2. Use directly after electrostatic precipitators is not possible.
3. Use is possible at exhaust gas velocities in the range of 3 to 40 m/s.

**Notes:**

1. The maintenance interval is three months.
2. The measuring device can only be adjusted by the automatic adjustment function at zero and reference point.
3. For exhaust gas velocities in the range of 3 to 40 m/s, the dependence on the exhaust gas velocity is eliminated by the integrated velocity compensation. For this purpose, the analog input 4 to 20 mA must be assigned a signal to represent the exhaust gas velocity.
4. For constant exhaust gas velocities, a fixed value for the exhaust gas velocity can also be entered.
5. If a purge air device is used, compliance with the specified purge air quantity must be checked.
6. The measuring device shall be operated with an interval of 24 h for the automatic control cycle.
7. The manufacturer's recommendations for the probe length shall be followed. Probe lengths from 250 mm to 1000 mm can be used.
8. The power supply can be 230 V AC or 24 V DC.
9. The measuring system has a digital Modbus interface (serial RS 485), according to VDI 4201 sheet 1 (2010) and 3 (2012).

**Test institute:** TÜV Rheinland Energy GmbH, Cologne  
Report No.: 936/21254752/A dated 12 January 2022

### Certified product

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

The entire tested measuring device Dust Monitor S305QAL/N is composed of the probe, the probe extension, the purge air adapter and the electronic unit attached to the probe.

The Dust Monitor S305QAL/N measuring device is used to detect the dust concentration in flue and process gases. The measuring device operates according to the principle of the triboelectric effect, in which an insulated probe is electrically charged by dust particles that hit it or flow past it in the vicinity, and this charge is detected. The measuring device also has a digital interface of the Modbus type, which is implemented serially as EIA-485.

The complete system consists of the following components:

#### Complete system

Manufacturer: Sintrol Oy  
Type: Dust Monitor S305QAL

Measuring principle: triboelectric  
Accessories: Welding adapter MC900229  
Blanking cap MC900033  
Tri-Clamp clamp MC900034  
Tri-Clamp teflon gasket MC900007  
Purge air adapter MC900203  
Probe extension 250, 500 mm  
Dust Tool operator software

Optional accessories: Interface adapter RS 485 USB EC900041  
Sintrol reference signal generator



### 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 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 GmbH. With revocation of the publication the certificate loses its validity. After the expiration of the certificate and on requests of the TÜV Rheinland Energy 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: [gal1.de](http://gal1.de).

### History of documents

Certification of Dust Monitor S305QAL/N 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. 0000081149\_00: 09 August 2022  
Expiry date of the certificate: 27 July 2027  
Test report 936/21254752/A dated 12 January 2022  
TÜV Rheinland Energy GmbH  
Publication BAnz AT 28.07.2022 B4, chapter I number 1.1  
UBA announcement dated 28 June 2022

**Calculation of overall uncertainty according to EN 14181 and EN 15267-3**

**Measuring system**

Manufacturer	Opsis AB
AMS designation	S305QAL/N
Serial number of units under test	P500-621-252 / P600-621-367/P900-547-857 / P300-5
Measuring principle	triboelectric

**Test report**

Test laboratory	936/21254752/A TÜV Rheinland
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**Measured component**

Certification range	Dust 0 - 7.5 mg/m <sup>3</sup>
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**Calculation of the combined standard uncertainty**

**Tested parameter**

		$u^2$	
Lack of fit	$u_D$ 0.042 mg/m <sup>3</sup>	0.002	(mg/m <sup>3</sup> ) <sup>2</sup>
Zero drift from field test	$u_{lof}$ -0.046 mg/m <sup>3</sup>	0.002	(mg/m <sup>3</sup> ) <sup>2</sup>
Span drift from field test	$u_{d,z}$ -0.003 mg/m <sup>3</sup>	0.000	(mg/m <sup>3</sup> ) <sup>2</sup>
Influence of ambient temperature at span	$u_{d,s}$ -0.027 mg/m <sup>3</sup>	0.001	(mg/m <sup>3</sup> ) <sup>2</sup>
Influence of supply voltage	$u_t$ 0.047 mg/m <sup>3</sup>	0.002	(mg/m <sup>3</sup> ) <sup>2</sup>
Uncertainty of reference material at 80% of certification range	$u_v$ 0.019 mg/m <sup>3</sup>	0.000	(mg/m <sup>3</sup> ) <sup>2</sup>
	$u_{rm}$ 0.104 mg/m <sup>3</sup>	0.011	(mg/m <sup>3</sup> ) <sup>2</sup>

\* The larger value is used :  
"Repeatability standard deviation at set point" or  
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty ( $u_c$ )	$u_c = \sqrt{\sum (u_{max, i})^2}$	0.13	mg/m <sup>3</sup>
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	0.26	mg/m <sup>3</sup>

**Relative total expanded uncertainty**

Requirement of 2010/75/EU	<b>U in % of the ELV 5 mg/m<sup>3</sup></b>	<b>5.3</b>
Requirement of EN 15267-3	<b>U in % of the ELV 5 mg/m<sup>3</sup></b>	<b>30.0</b>
	<b>U in % of the ELV 5 mg/m<sup>3</sup></b>	<b>22.5</b>

The data for the QAL1 calculation is taken from the Sintrol certificate.