TÜVRheinland®
Precisely Right.

CONFIRMATION

of Product Conformity (QAL1)

Certified AMS:	N100 for SO_2
Manufacturer:	Teledyne API 9970 Carroll Canyon Road San Diego, CA, 92131 USA
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 9 months from the date of issue
(this document contains 4 pages).

This confirmation is valid until: 31 December 2026

TÜV Rheinland Energy & Environment GmbH
Cologne, 10 April 2026

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TÜV Rheinland Energy & Environment GmbH
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confirmation:
10 April 2026

Test report:	936/21255654/C dated 28 August 2023 and Addendum EuL/21272240/C of 15. July 2025
Expiry date:	31 December 2026

Approved application
The tested AMS is suitable for continuous ambient air monitoring of SO_2 (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 45 °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 936/21255654/C dated 28 August 2023 of TÜV Rheinland Energy GmbH and Addendum EuL/21272240/C of 15. July 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

Notification on the announcements of the Federal Environment Agency of 19th March 2024 (BAnz AT 10.05.2024 B7, Chapter III number 1.1) and of 2nd April 2025 (Banz AT 19.05.2025 B3, Chapter IV, 66th notification).

The measurement system N100 for SO_2 from Teledyne API fulfils the requirements of EN 14212 (edition 2024). An addendum to the test report with the report number EuL/21272240/C can be viewed online at www.qal1.de.

The hydrocarbon kicker of the measuring device can alternatively be made with the plated silicone tubing P00430764 Bisco Helixmark manufacturer pn: 60-795-06 (Nusil) or P00429913 Bisco, Helixmark manufacturer pn: 60-011-06 (Dow Corning).

Statement by TÜV Rheinland Energy & Environment GmbH dated 15 July 2025

Tested product

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

The immission measuring device N100 is a continuous sulfur dioxide analyzer. The measuring principle is based on UV fluorescence. The device was developed for continuous measurement of sulfur dioxide in ambient air.

The measurement method is based on the physical principle that fluorescence occurs when sulfur dioxide (SO_2) is excited to an excited state by UV light with wavelengths in the range of 190 nm - 230 nm (SO_2*).

The optical design of the measurement chamber optimizes the fluorescence reaction between SO_2 and UV light, ensuring that only the UV light produced by the decay of SO_2* to SO_2 is detected by the instrument's fluorescence detector.

The N100 Sulfur Dioxide Analyzer determines the concentration of sulfur dioxide (SO_2) in the sample air drawn into the instrument. In doing so, the measurement and also calibration gases must be supplied at atmospheric pressure.

UV radiation is generated by a low pressure zinc vapor lamp.

A reference detector converts UV light to a DC current that is used to measure the intensity of the UV excitation source. It is located directly opposite the UV lamp at the end of a narrow tubular light trap, and is thus directly in the path of the UV excitation light.

A window that is transparent to UV light forms an airtight seal to prevent ambient air from contaminating the measurement chamber. Due to the shape of the light trap, and because the detector only detects UV wavelengths, no further optical filtering is necessary.

Multiple focusing lenses and optical filters ensure that both detectors are exposed to the optimal amount of light at only the correct wavelength of UV. To ensure that the PMT detects only the light emitted by the decaying SO_2*, the path of the UV excitation light and the field of view of the PMT are perpendicular to each other. Furthermore, the inner surfaces of the measuring chamber are coated with a layer of black Teflon, which absorbs stray light.

The N100 measuring device has a particle filter directly behind the sample gas inlet. The particle filter is located on a flap secured with two screws on the back of the measuring device. The manufacturer offers the measuring device with two different filter types.

Alternatively, it is possible to equip the N100 measuring device with a DFU filter cartridge with a pore size of 0.01 µm (a so-called long-life filter). The manufacturer specifies a replacement interval of up to 6 months for this filter. The replacement interval of the particle filter depends, of course, on the dust load at the installation site and must be determined individually for each measuring point.