TÜVRheinland®
Precisely Right.

CONFIRMATION

of Product Conformity (QAL1)

Approved AMS:	N400 for O_3
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 according to the standards VDI 4202-1 (2018), EN 14625 (2012), as well as EN 15267-1 (2009) and EN 15267-2 (2009).

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

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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.

Confirmation:
15 February 2024

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Test Report:	EuL/21255654/D dated 28 August 2023
Expiry date:	14 August 2024

Approved application
The tested AMS is suitable for continuous ambient air monitoring of O_3 (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 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/21255654/D dated 28 August 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

AMS designation:
N400 for Ozone

Manufacturer:
Teledyne API

Field of application:
For continuous ambient air monitoring of ozone (stationary operation)

Measuring ranges during performance testing:

Component	Certification range	Unit
Ozone	0 – 500	µg/m

Software version:
Rev. 1.11.1

Restrictions:
none

Notes:

1. The test report on the suitability test can be viewed on the Internet at www.qal1.de.
2. The measuring system is approved for an ambient temperature range of 0 - 45 °C.
3. The N400 measuring system can be equipped with a standard Teflon particle filter with a pore size of 5 µm and a diameter of 47 mm as well as with a DFU filter cartridge with a pore size of 0.01 µm.

Test Institute: TÜV Rheinland Energy GmbH, Cologne
Report No.: EuL/21255654/D dated 28 August 2023

Tested product

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

The immission measuring device N400 is a continuous ozone analyzer. The measuring principle is based on ultraviolet absorption. The device is designed for continuous measurement of ozone in ambient air.

The N400 ozone analyzer determines the concentration of ozone (O_3) in an air sample drawn into the measuring device. The N400 measures the intensity of ultraviolet light after it passes through a measuring chamber. In this chamber, the light is absorbed in proportion to the amount of ozone present. Every four seconds, a shuttle valve switches between a gas flow containing ozone and a reference gas flow that has been purified of ozone.

The photometer in the N400 analyzer uses a high-power mercury vapor lamp to generate a beam of UV light. This beam passes through a window that is non-reactive with O_3 and transmissive to UV radiation at 254 nm, and then enters the absorption tube filled with sample gas.

The UV light passes through a similar window at the other end of the absorption tube and is detected by a vacuum diode. This diode only detects radiation at or near a wavelength of 254 nm. The accuracy of the detector is high enough that no additional optical filter for UV light is needed. The detector responds to the UV light and outputs a voltage that is in direct proportion to the light intensity.

Alternative assemblies:
Particle filter

The N400 measuring device has a particle filter directly behind the sample gas inlet. The particle filter is located on a secured flap at the rear of the measuring device.

Alternatively, it is possible to equip the N400 measuring device with a DFU filter cartridge with a pore size of 0.01 µm.

For this filter, the manufacturer specifies a replacement interval of up to 6 months.

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.