



Industrie Service

Confirmation

of Product Conformity (QAL 1)

Approved AMS: MGA 20 for CO, NO, SO₂, NO₂, NO_x, N₂O, CH₄ and CO₂

Manufacturer: Dr. Födisch Umweltmesstechnik AG
Zwenkauer Straße 159
04420 Markranstädt
Germany

Test institute: TÜV SÜD Industrie Service GmbH

**This is to certify that the AMS has been tested according to
DIN EN 15267-1 (2009), DIN EN 15267-2 (2023), DIN EN 15267-3 (2008) as well as
DIN EN 14181 (2015)
standards.**

This confirmation is valid for the conditions listed below and consists of 6 pages

The tested was presented to the responsible body and assessed positively.
This confirmation applies until publication of the certificate, however for a maximum period of 6
months.

Validity of confirmation

until 08 January 2025

TÜV SÜD Industrie Service GmbH
Testing laboratory Emission measurement/
calibration
Munich, 09 July 2024

Dipl.-Ing. Hans-Jörg Eisenberger

M. Sc. Simon Geisler

Test report 3610686_V2 from 01 March 2024

Validity of confirmation until 08 January 2025 (6 month)

Approved application

The AMS tested is suitable for plants in compliance with 13th BImSchV:2021, 17th BImSchV:2021, 30th BImSchV:2019 and TA-Luft:2021 as well as plants according to 27th BImSchV:2013 and 44th BImSchV:2021. The suitability of the AMS for this application was assessed on the basis of a laboratory test and a field test of the measuring system lasting over three months at a plant in compliance with the 17th BImSchV:2021. The measuring system is authorized for the ambient temperature range from +5 °C to +40 °C

The suitability test and the performance of the uncertainty calculations were conducted based on the provisions valid at the time of testing.. Due to possible amendments to legal foundations, every user should ensure before use of the AMS that it is suitable for monitoring the applicable values.

The operator should consult the manufacturer to ensure that the AMS is suitable for the plant where it is being installed.

Note

The legal regulations mentioned do not always have to correspond to the current state of legislation. Each user should ensure, if necessary in consultation with the competent authority, that this AMS fulfils the legal requirements for the intended use. Furthermore, it cannot be ruled out that legal regulations on the use of a measuring system for emission monitoring may change during the term of the certificate.

Basis of the confirmation

- TÜV SÜD Industrie Service GmbH test report 3610686 V2 from 01 March 2024
- The ongoing surveillance of the product and the manufacturing process
- Testing and positive assessment by the responsible body

AMS tested: MGA 20 for CO, NO, SO₂, NO₂, NO_x, N₂O, CH₄ and CO₂

Manufacturer: Dr. Födisch Umweltmesstechnik AG
Markranstädt

Field of application: For plants requiring approval to the 13th BImSchV, 17th BImSchV, 30th BImSchV and TA-Luft as well as plants according to 27th BImSchV and 44th BImSchV.

Measurement ranges for the suitability test:

Component	Certification range	Additional measurement ranges		Unit
CO	0 - 75	0 - 5000	-	mg/m ³
NO	0 - 50	0 - 80	0 - 3000	mg/m ³
NO ₂	0 - 50	0 - 1000	-	mg/m ³
NO _x als NO ₂ [virtual]	0 - 80	0 - 3000	-	mg/m ³
N ₂ O	0 - 50	0 - 2000	-	mg/m ³
SO ₂	0 - 45	0 - 75	0 - 2000	mg/m ³
CH ₄	0 - 50	0 - 1500	-	mg/m ³
CO ₂	0 - 25	0 - 50		Vol. %

Note NO_x [virtual]: The virtual measuring component is calculated from the measured components NO and NO₂ according to the formula

$$\text{NO}_x = \text{NO} * 1.53 + \text{NO}_2$$

Software versions:

MGA 20 (Mainboard | Display): V 3.30|2.40

Restrictions:

None

Notes:

- The analyser should be operated with the active Thermo-AUTOCAL function.
- The AMS should be operated with an interval of 12 h for automatic zero point adjustment or O₂ span point adjustment.
- To adhere to the required CO total measurement uncertainty at a limit value of 50 mg/m³ the alignment should be conducted using a test gas with a tolerance of 1%.
- When checking and adjusting span points for CO, NO, NO₂, SO₂, NO₂, N₂O, CH₄ and CO₂ the addition of test gas with moisture is conducted locally on the 3-way valve in front of the measurement gas cooler or via the test gas entry on the sample probe.



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5. The transfer of analogue and digital signals can alternatively be conducted using the digital interface Modbus TCP/IP according to VDI 4201 pages 1 and 3.
6. The service life of the NH₃ filter specified by the manufacturer should be observed.
7. The maintenance interval is four weeks.
8. If the measuring system is exposed to NH₃ concentrations greater than 10 mg/m³ for longer than 4 days, the gas sampling probe and heating line must be cleaned with demineralised water. Cleaning the system is necessary in order to be able to comply with the required response time for the SO₂ component.

Test report:

TÜV SÜD Industrie Service GmbH, Munich
Report-No.: 3610686_V2 from 1 March 2024

Tested product

The confirmation applies to AMS that comply with the following description:

The entire tested multi-component AMS MGA 20 consists of a sampling probe, a heated sample gas line and the measuring cabinet with NH₃-adsorber, gas cooler and the analyser. The measuring cabinet is equipped with a cabinet ventilator and an additional enclosure heating. The main components of the measuring cabinet are:

- Multi-component analyser MGA 20
- NH₃-adsorber Bühler ADF – 300 KG
- Measurement gas cooler JCS 101.303A50XY
- Measurement gas pump MGP 12

The multi-component AMS MGA 20 is suitable for measuring emissions of CO, NO, SO₂, NO₂, NO_x, N₂O, CH₄ and CO₂ in flue gases. This is a cold measuring extractiv system.

The following measurement principles are used:

Dual frequency measurement procedure
Gas filter correlation

The sample gas extraction consists of a self regulating stainless steel probe with heated ceramic filter. The sample gas probe is conducted with a sample gas line, heated at 190 °C and equipped with a PTFE seal (internal diameter 4 mm). The line is max. 50 m long.



The entire system consists of the following components:

Analyser systems

Manufacturer: Dr. Födisch UAVeltesstechnik AG
System type: MGA 20
Software: V 3.30|2.40 (Mainboard | Display)
Measurement principle: CO, NO, NO₂, N₂O, NO_x, SO₂, CH₄, CO₂
extractive cold measuring infrared spectroscopy system

Probe

Manufacturer: Dr. Födisch UAVeltesstechnik AG
Type: HSP 12
Probe heating: self-regulating, heated to maximum 200 °C
Temperature monitoring via alarm contact < 140 °C
Probe length: 100 cm
Filter: Ceramic filter 3 µm

Heated pipe

Manufacturer: Winkler GmbH, D-69126 Heidelberg
Type: Standard, 100 W/m DN4/6
Heated temperature: 190 °C
Length: 10 m (PTFE pipes) Laboratory
50 m (PTFE pipes) Field test
Diameter: 4 mm ID
Regulator: in the MGA 20 analysis cabinet

Heating regulator measurement gas pipe

Manufacturer: JUMO GmbH & Co. KG, D-36039 Fulda
Type: JUMO eTRON PT100
Nominal value: 190 °C

A 3-Phase power relays, combined with a heating regulator was necessary for the 50 m pipe in the field test:

Manufacturer: JUMO GmbH & Co. KG, D-36039 Fulda
Type: 3-Phase thyristor circuit breaker

NH₃ adsorber

Manufacturer: Bühler Technologies GmbH, D-40880 Ratingen
Type: ADF – 300 KG; Adsorption filter with NH₃ adsorber material / 300mm
Note: Adsorber material refillable “NH₃ ceramic granulate“

Measurement gas cooler

Manufacturer: JCT Analysentechnik GmbH, A - 2700 Wiener Neustadt
Type: JCS 101.303A50XY / 345 VA
Number of col units: 1-unit
Flow: max. 250 l/h
Condensate: using measurement gas pump

Measurement gas pump

Manufacturer: Dr. Födisch UAVeltesstechnik AG
Type: MGP 12
Power: 280 l/h

Moisture block filter

Manufacturer: Sun Control
Type: Hydrophobe Filter Midiart 2000



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Analysis cabinet ventilator

Manufacturer: Rittal GmbH & CO. KG, Herbron
Type: SK 3243.100
Regulator: integrated in the MGA 20

Analysis cabinet heating

Manufacturer: Rittal GmbH & CO. KG, Herbron
Type: SK 3105.900 / Schaltschrankheizung mit Lüfter / 800 W
Regulator: integrated in the MGA 20

Instruction manuals and technical documentation

MGA 20 Instruction manual for the multi gas analyser MGA 20 (Version 1.4)
Probe Gas sampling probe HSP 12 (Version 1.0)
Measurement gas pump Instruction manual for the MGP 12 (Version 1.0)