

CONFIRMATION

of Product Conformity (QAL1)

Approved AMS: MGAprime Q for CO, NO, O₂, CO₂, NO₂, N₂O and SO₂

Manufacturer: MRU GmbH
Fuchshalde 8
74172 Neckarsulm
Deutschland

Test Institute: TÜV Rheinland Energy GmbH

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

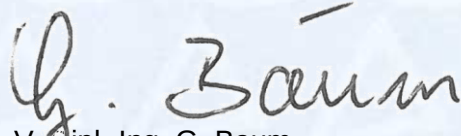
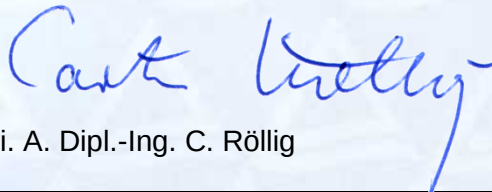
**EN 15267-1 (2009), EN 15267-2 (2009), EN 15267-4 (2017),
EN 14793 (2017) and EN 14181 (2014).**

The approval of the measuring equipment subject to the above mentioned conditions
was authorized by the German relevant body.

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).

The confirmation is valid until: 11 August 2021

TÜV Rheinland Energy GmbH
Cologne, 12 February 2021


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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.

Confirmation:
12 February 2021

Test report: 936/21245785/C of 07 September 2020
First certification: 31 Juli 2020
Expiry date: 11 August 2021

Tested application

The tested AMS is suitable for use at combustion plants according to Directive 2010/75/EU, chapter III (13th BImSchV), , 44th BImSchV and TA Luft. As well it is suitable as an alternative method for the standard reference method for calibrating and validating stationary AMS in the context of QAL2 and AST in accordance with EN 14181. The measured ranges have been selected so as to ensure as broad a field of application as possible.

The suitability of the P-AMS for this application was assessed on the basis of a laboratory test and seven field tests at different industrial plants. The plants were two municipal waste incinerators, a lignite-fired power plant, a sewage incinerator. a biomass heating plant, a hot water burner test stand and an engine test stand.

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 limit values and oxygen concentrations 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.

Basis of the confirmation

This certification is based on:

- Test report 936/21245785/C of 07 September 2020 of TÜV Rheinland Energy GmbH
- Notice of suitability as given by the competent body
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approved by an independent body

Confirmation:
12 February 2021

AMS designation:

MGAprime Q for CO, NO, O₂, CO₂, NO₂, N₂O and SO₂

Manufacturer:

MRU GmbH, Neckarsulm

Field of application:

Portable AMS for periodic measurements of emissions from stationary sources in accordance with the 13th and 44th BImSchV, TA Luft and as an alternative method for the standard reference method for calibrating and validating stationary AMS in the context of QAL2 and AST in accordance with EN 14181

Measuring ranges during performance testing:

Component	Certification range	supplementary range	Unit
CO	0 – 220	0 – 3.750	mg/m ³
NO	0 – 270	0 – 2.680	mg/m ³
NO ₂	0 – 308	0 – 1.025	mg/m ³
CO ₂	0 – 20	-	Vol.-%
N ₂ O	0 – 196	0 – 490	mg/m ³
SO ₂	0 – 429	0 – 8.571	mg/m ³
O ₂	0 – 25	-	Vol.-%

Software version:

V1.001.029

Restrictions:

None

Notes:

1. Operation of the P-AMS requires that the pump provided by the manufacturer inject a 10 % phosphoric acid be injected into the instrument's cooler.
2. In the event of temperature changes of more than 6°C, it must be checked on-site whether the measurement uncertainty is still within the permissible limits.
3. Supplementary testing (additional components NO₂, SO₂ and N₂O) as regards Federal Environment Agency (UBA) notice of 27 May 2020 (BAnz AT 31.07.2020 B10, chapter I number 4.2)

Test report:

TÜV Rheinland Energy GmbH, Cologne
Report No.: 936/21245785/C of 07 September 2020

Tested product

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

The *MGAprime Q* measuring system tested consists of:

- HPI sampling probe (length: 0.5 m) and heating hose (length: 3 m),
- the *MGAprime-Q* analyser itself,
- and the additional APE unit for injecting phosphoric acid into the analyser.

The gas sampling probe has a heated probe handle incl. a dust filter and allows connection to a heated sampling line. The *MGAprime-Q* controls the heaters, the probe handle and the sampling probe.

The measuring system has two different kinds of sensors.

- a paramagnetic sensor to measure O₂;
- non-dispersive infrared absorption measurement for measuring CO, NO, NO₂, N₂O, SO₂ und CO₂.

The measuring system is operated via a touch-sensitive display. The outer casing of the instrument is a compact and robust metal housing with shock-absorbing plastic corners, housed in a water-repellent bag. The P-AMS can be operated from within this bag. The AMS has a degree of protection of IP42.

All electrical and pneumatic connections are located on the front of the unit.

An APE acid dosing unit is used to inject phosphoric acid (10 %) into the instrument's cooler. Correct measurement requires the injection of phosphoric acid.

- This injection ensures constant conditions of the gas cooler.
- The use of phosphoric acid reduces losses of SO₂ and NO₂ on the wet surfaces of the gas cooler.

The injection takes place via two pumps. The total quantity of phosphorous acid during operation is 24 ml per hour.