

# CONFIRMATION

## of Product Conformity (QAL1)

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**AMS designation:** MP101M for suspended particulate matter PM<sub>10</sub>

**Manufacturer:** ENVEA  
111, Boulevard Robespierre  
78304 Poissy Cedex  
France

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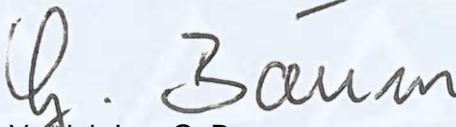
**Test Laboratory:** TÜV Rheinland Energy GmbH

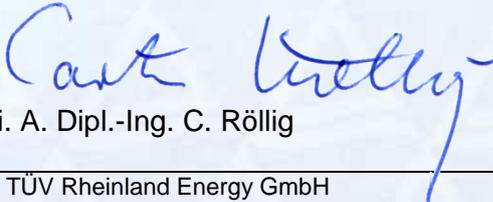
**This is to certify that the AMS has been tested  
according to the standards  
VDI 4202-3 (2018), EN 12341 (2014), EN 16450 (2017),  
EN 15267-1 (2009) and EN 15267-2 (2009).**

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 5 pages)

**Expiry date: 23 October 2020**

TÜV Rheinland Energy GmbH  
Cologne, 24 April 2020

  
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Test institute accredited to EN ISO/IEC 17025:2005 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:**  
24 April 2020

**Test Report:** 936/21240384/A dated 15 August 2019  
**Expiry date:** 23 October 2020

### **Approved application**

The certified AMS is suitable for continuous ambient air monitoring of suspended particulate matter, PM<sub>10</sub>, (stationary operation).

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a field test performed at four different sites and/or different periods over several months.

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, in consultation with the manufacturer, that this AMS is suitable for monitoring the AMS readings relevant to the application.

Any potential user should ensure, in consultation with the manufacturer, that this AMS is suitable for the intended purpose.

### **Basis of the confirmation**

This confirmation is based on:

- Test report no. 936/21240384/A dated 15 August 2019 issued by TÜV Rheinland Energy GmbH
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approval by an independent body

**Confirmation:**  
24 April 2020

**AMS designation:**

MP101M for suspended particulate matter PM<sub>10</sub>

**Manufacturer:**

ENVEA, Poissy, France

**Field of application:**

For continuous ambient air monitoring of suspended particulate matter, PM<sub>10</sub> (stationary operation)

**Measuring ranges during performance testing:**

| Component        | Certification range | Unit              |
|------------------|---------------------|-------------------|
| PM <sub>10</sub> | 0–10 000            | µg/m <sup>3</sup> |

**Software version:**

MP101M 4.0.h

**Restrictions:**

None

**Notes:**

1. The maintenance interval is one month.
2. The test report on performance testing is available on the internet at [www.qal1.de](http://www.qal1.de).

**Test Report:**

TÜV Rheinland Energy GmbH, Cologne  
Report no. 936/21240384/A dated 15 August 2019

**Confirmation:**  
24 April 2020

## Tested product

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

The MP101M measuring system is designed to measure suspended particulate matter in ambient air. The determination of the mass concentration relies on the principle of beta ray attenuation. The sample is first sucked through a PM<sub>10</sub> pre-separator and then through a glass fibre filter tape in the instrument. Suspended particulate matter is deposited on the filter tape. Every hour, a beta source (<sup>14</sup>C element) is swivelled in to determine the mass deposited on the filter tape. A Geiger Müller counter measuring beta radiation is situated below the filter tape. The <sup>14</sup>C radioelement emits beta rays as it decays. Particles deposited on the filter tape partially absorb the beta radiation. The filter spot is measured before and after loading. The difference in radiation intensity measured by the Geiger Müller counter serves as measure for the deposited amount of particulate matter.

The particulate sample passes the sampling head (USEPA) at a flow rate of 16.67 l/min and enters the sampling tube, which connects the sampling head to the actual measuring instrument. The sampling head separates all particles larger than PM<sub>10</sub>. The sampling tube can be heated in order to avoid possible condensation effects, especially in situations with high outdoor air humidity. After entering the measuring instrument, the air stream contained in the sample is separated on the filter tape. After leaving the measuring system, the air flow reaches the pump and then exits into the environment via a particle filter.

Every hour (1 period), the sample volumetric flow is stopped and a beta radiation source is swivelled over the filter band. The Geiger Müller counter situated below the filter tape measures the intensity of radiation. Every filter tape is measured before and after filter loading. The absorbed radiation is proportional to the separated particle mass and thus the absorption difference is the measured quantity. One measurement takes 200 seconds. The measured values of 24 periods are the averaged 24 hour value (1 cycle). After 24 hours, the filter tape is transported forward and a new blank spot is sampled.

The volumetric flow is kept constant at 1m<sup>3</sup>/h in the separator head. Since the velocity in the sampling head determines the separation characteristics, the volume flow is controlled by the weather sensors so that the volume flow in the sampling head is constant.

The sampling tube can be heated to avoid condensation effects. Since excessive temperatures in the sampling tube can lead to reduced results due to volatilization, the sampling tube is only heated as much as absolutely necessary. A sensor measuring relative moisture is situated near the Geiger Müller counter. If this sensor detects relative moisture above 50%, the heater will be activated.

The measuring system generally provides results simultaneously via the display and the data records. Measured values are updated hourly after each measurement (periodically, "Per.") and every 24 hours (cyclically, "Cyc.").

**Confirmation:**  
24 April 2020

The tested AMS consists of

- the PM<sub>10</sub> USEPA sampling head,
- the sampling tube with heater, protective tube made of stainless steel and isolation (2m long),
- the weather sensor (mounted at the sampling tube below the sample inlet) comprising a temperature sensor and a sensor which determines the relative moisture.
- the analyser,
- the pump unit,
- the required connecting tubes and cables,
- the operation manuals in German.

The measuring system may be operated either directly via the touch screen at the front of the instrument or remotely via an internet connection or a wireless modem.