TÜVRheinland®
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CONFIRMATION

of Product Conformity (QAL1)

Approved AMS:	D-FW 440 M-EU-LL for leakage monitor
Manufacturer:	DURAG GmbH Kollaustr. 105 22453 Hamburg Germany
Test Institute::	TÜV Rheinland Energy & Environment GmbH

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

EN 15267-1 (2009), EN 15267-2 (2023), EN 15859 (2010) as well as EN 14181 (2014).

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

i. V. Dipl.-Ing. G. Baum

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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.

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Test Report: EuL/21271144/B dated 20 February 2025

Expiry date: 31 December 2026

Approved application

The tested AMS is suitable for use as a leckage monitor for filter monitoring downstream of filter systems at plants Directive 2010/75/EC, chapter III (combustion plants / 13th BImSchV:2021), Directive 2010/75/EC, chapter IV (waste incineration plants / 17th BImSchV:2023), Directive 2015/2193/EC (44th BImSchV:2022), TA Luft:2021, 30th BImSchV:2019 and 27th BImSchV:2013. The measured ranges have been selected so as to ensure as broad a field of application as possible.

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a eight month field test at at an ancillary system of waste incineration.

The AMS is approved for an ambient temperature range of -20 °C to +50 °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 / emission limit 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/21271144/B dated 20 October 2025 issued by TÜV Rheinland Energy & Environment GmbH
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approval by an independent body

AMS designation: D-FW 440 M-EU-LL

Manufacturer: DURAG GmbH, Hamburg, Germany

Field of application:

Leakage monitor for filter inspection downstream of dust collectors on installations requiring approval under the 13th BImSchV, the 17th BImSchV, the 30th BImSchV and the TA-Luft, and on installations under the 27th BImSchV and the 44th BImSchV

Measuring ranges during performance testing:

Component	Certification range	Supplementary measuring ranges		Unit
Dust	0 – 7,5	0 – 15	0 – 100	mg/m³

Software version: 3.2.4

Restrictions:

1. Use in exhaust gases saturated with water vapour is not possible. Similarly, droplet emissions affect the measured dust concentration.
2. Use immediately downstream of electrostatic precipitators is not possible.
3. Use is possible at exhaust gas velocities in the range of 3 – 40 m/s.
4.

Notes:

1. The maintenance interval is four months.
2. The measuring device can only be adjusted to the zero and reference points using the automatic adjustment function.
3. At exhaust gas velocities in the range of 3–40 m/s, the dependence on exhaust gas velocity is eliminated by the integrated velocity compensation. To do this, the 4–20 mA analogue input must be connected to a signal representing the exhaust gas velocity.
4. For constant exhaust gas velocities (± 10 % of the average exhaust gas velocity), a fixed value for the exhaust gas velocity may also be entered.
5. When using a purge air device, compliance with the specified purge air volume must be checked.
6. The measuring device must be operated with a 24-hour interval for the automatic control cycle.
7. The manufacturer's recommendations regarding probe length must be followed. Probe lengths ranging from 250 mm to 1750 mm may be used.
8. The power supply can be 230 V AC or 24 V DC.
9. The measuring system has a digital Modbus interface (serial RS 485), in accordance with VDI 4201 Parts 1 and 3.

Test Institute: TÜV Rheinland Energy & Environment GmbH, Cologne

Report No.: EuL/21271144/B dated 20 October 2025

Tested product

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

The measuring device D-FW 440 M-EU-LL is based on the triboelectric measuring principle. The measuring effect results from particles interacting with an insulated probe mounted in the flue gas duct or chimney. When moving particles flow past the probe or collide with it, an AC signal is triggered electrostatically or a DC signal is triggered by direct charge transfer. This AC/DC signal is then processed mathematically to filter out signal noise and display only the dust signal resulting from the measurement effect.

The complete D-FW 400 M-EU-LL measuring system comprises
- the measuring instrument with a standard probe length of 500 mm,
- the weld-on socket with a Tri-Clamp connection (50 mm or 70 mm in length),
- a Tri-Clamp clamp, and
- a blind cover and PTFE seal (50 mm).

Screw-on stainless steel rods in lengths of 250 and 500 mm are available for probe extension. For the D-FW 440 M-EU-LL system, the purge air adapter (60 mm) can be used to prevent condensation at the base of the probe rod. According to the manufacturer's specifications, the required purge air flow rate is 50 l/min ± 10%. A rotameter with an adjustment valve is available as an option if the constant purge air flow rate cannot be adjusted on site.

An RS 485 RTU interface is provided for data transmission via the Modbus protocol. A dedicated direct USB interface is also available as a service interface.

The measuring system can also be operated using the D-ESI FW software.