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# CONFIRMATION

## of Product Conformity (QAL1)

| | |
|---|---|
| **AMS designation:** | HM-1400 TRX 2 for Hg |
| **Manufacturer:** | DURAG GmbH<br>Kollaustraße 105<br>22453 Hamburg<br>Germany |
| **Test Laboratory:** | TÜV Rheinland Energy GmbH |

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

**EN 15267-1: 2009, EN 15267-2: 2009, EN 15267-3: 2007 and 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 6 months from the date of issue
(this document contains 4 pages)

**Expiry date: 19 December 2018**

TÜV Rheinland Energy GmbH
Cologne, 20 June 2018

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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 the certificate D-PL-11120-02-00.

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|---|---|
| **Test Report:** | 936/21238805/C dated 10 May 2018 |
| **Expiry date:** | 19 December 2018 |

**Approved application**
The tested AMS is suitable for use at combustion plants according to Directive 2010/75/EU, chapter III (13th BImSchV). 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 four-months field test at a large combustion plant (hard coal firing).

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 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 confirmation is based on:

- Test report 936/21238805/C dated 10 May 2018 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:**
HM-1400 TRX 2 for mercury

**Manufacturer:**
DURAG GmbH, Hamburg

**Field of application:**
For plants according to the 13th BImSchV

**Measuring ranges during performance testing:**

| Component | Certification range | supplementary measuring ranges | | Unit |
|---|---|---|---|---|
| Hg | 0–15 | 0–45 | 0–75 | µg/m³ |

**Software versions:**
SPS: 3.01R000
Display: TRX_3.01R0000

**Restrictions:**
none

**Notes:**
1. The maintenance interval is four weeks.
2. Wet test gases should be used for testing mercury.
3. An external test gas generator is needed for regular span checks during the maintenance interval.
4. The probe length was 40 m during performance testing.
5. The zero point was automatically adjusted every two hours using purged ambient air.
6. Manual QAL3 tests and automatic span point checks should not be performed the same day.

**Test Report:**
TÜV Rheinland Energy GmbH, Cologne
Report no.: 936/21238805/C dated 10 May 2018

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## Tested product

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

The extractive measuring system HM-1400 TRX 2 is an AMS for the continuous analysis of all gaseous mercury compounds emitted by plants subject to monitoring or present in process gases. A dual beam photometer detects the concentration of atomic mercury $Hg^0$. In order to determine total mercury Hg (total) in the sample gas, mercury present in the sample gas is first reduced to $Hg^0$. This takes place in a thermo-catalytic reactor.

The AMS provides the following control functions:

- Leak test: The AMS tests the leak tightness of the system.
- Zero point checks: The AMS automatically performs zero point checks for an internal re-adjustment of the photometer.
- Span point measurement: With its internal reference gas generator, the AMS allows for internal span point measurements.
- Connecting external gas generators: This facilitates to connect external gas generators for checking the photometer and the entire system. In the context of QAL3-compliant performance, this is typically done via an appropriate stub at the sampling probe for dosing test gas upstream of the filter.

The measuring system provides options for sample gas dilution and separate determination of the proportions of Hg species $Hg^0$ and $Hg^{n+}$ (specification). When the AMS is in dilution or specification mode, it is no longer available for emission monitoring. In that case, a status signal will be set.

The essential components of the HM-1400 TRX 2 measuring system include:

- Measuring cabinet c/w photometer (UV dual beam photometer), thermo-catalytic reactor (with two reactor vessels which can be switched automatically), pressure and flow regulator, temperature control and test gas generator
- M&C sample probe SP 2000 H with two stubs upstream of the filter
- Heated sampling line (180 °C) with two internal lines (6 mm PTFE, one for sucking the sample gas downstream of the filter and one for dosing in zero and test gases upstream of the filter). The sampling line used for the laboratory and field part of performance testing was 40 m long.
- Software: The AMS has separate pieces of software for the PLC and the display. The software versions are as follows:

  PLC: 3.01R000
  Display: TRX_3.01R0000