

CERTIFICATE

of Product Conformity (QAL1)

Certificate No.: 0000053812

Certified AMS: FDM II Standard (dust monitor)

Manufacturer: PCME Ltd.
Clearview Building
Edison Road, St. Ives, Champs
PE27 3GH, United Kingdom

Test Institute: 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) and EN 15859 (2010)

Certification is awarded in respect of the conditions stated in this certificate
(this certificate contains 5 pages).



Suitability Tested
EN 15267
QAL1 Certified
Regular
Surveillance

www.tuv.com
ID 0000053812

Publication in the German Federal Gazette
(BAnz.) of 15 March 2017

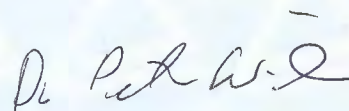
German Federal Environment Agency
Dessau, 25 April 2017



Dr. Marcel Langner
Head of Section II 4.1

This certificate will expire on:
14 March 2022

TÜV Rheinland Energy GmbH
Cologne, 24 April 2017



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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.

Test report: 936/21233015/A dated 29 August 2016
Initial certification: 15 March 2017
Expiry date: 14 March 2022
Publication: BAnz AT 15.03.2017 B6, chapter I no. 1.1

Approved application

The tested AMS is suitable for use as dust monitor for dust filter at plants requiring official approval and plant according to the 27. BImSchV. The measured ranges have been selected considering the wide application range of the AMS.

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a three-month field test at a waste incineration plant.

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 valid at the time of performance testing. As changes in legal regulations are possible, any potential user should ensure that this AMS is suitable for monitoring the measured value 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 certification

This certification is based on:

- Test report 936/21233015/A dated 29 August 2016 of TÜV Rheinland Energy GmbH
- Suitability announced by the German Federal Environment Agency (UBA) as the relevant body
- The ongoing surveillance of the product and the manufacturing process

Publication in the German Federal Gazette: BAnz AT 15.03.2017 B6, chapter I no. 1.1,
Announcement by UBA from 22 February 2017:

AMS designation:

FDM II Standard

Manufacturer:

PCME Ltd., St. Ives, United Kingdom

Field of application:

For use as filter dust monitor behind baghouse filter at plants requiring official approval and plants according to the 27th BImSchV

Measuring range during the performance test:

Component	Certification range	Unit
Dust	0 - 15*	mg/m ³

* 0 - 20 Units $\hat{=}$ 0 - 15 mg/m³ $\hat{=}$ 4 - 20 mA

Software versions:

Sensor: 2.40
Control unit:
Interface Modul: 8.70
MultiController: 8.70
ProController: 1.02

Restrictions:

1. The measuring system is only fit for use at plants for which the temperature will not fall below the dew point.
2. The measuring system may not be used downstream of an electronic filter.

Notes:

1. The maintenance interval is four weeks.
2. The dust concentration is determined in wet flue gas under operational conditions.
3. After a filter default with high dust concentrations, the sensor rod needs to be inspected visually and cleaned if necessary.
4. The influence of flow velocity needs to be taken into account.
5. The FDM II Standard measuring system comes with the Interface Module control unit. As an alternative, it may be equipped with the MultiController control unit and is then called FDM II Plus. As FDM II Pro it comes with the ProController control unit.

Test report:

TÜV Rheinland Energy GmbH, Cologne
Report No.: 936/21233015/A dated 29 August 2016

Certified product

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

The FDM II is a dust sensor which is suitable for measuring particle emissions downstream of dust separators. The instrument allows monitoring of the level of particle emissions and allows remote monitoring of the state of dust separators.

The FDM II uses the electrodynamic measurement principle. If the sensor probe is mounted downstream of a fabric filter, particles in the air stream will react with the sensor probe and result in a charge signature.

The signal is electrically filtered. Signals outside a specified frequency range will be discarded (the tribo-electrical direct current signal, too). This makes the instrument less sensitive to changes in particle speed. Moreover, this rules out the effect of particle contamination to the probe rod.

The electrodynamic signal detected by the probe rod is converted into uniform "units" by the electronic unit. Data output at the outlets of the measuring system takes place in the form of these uniform units which are representative for the dust concentration measured.

After performing manual dust measurements with a standard reference method, a calibration function and an offset can be inserted for the measuring system and thus the Units displayed will correspond to the measured dust concentration in mg/m³.

The measuring system comprises the following components:

- Sensor head with electronics and sensor rod (length of 80 cm during type approval)
- Manual
- Optional: Control unit (ProController, MultiController or Interface module) for easier parametrization and visualization of the measured data.

The current software versions are:

Sensor: 2.40

Control units

Interface Module: 8.70

MultiController: 8.70

ProController: 1.02

The current version of the operation manual is version 2 dated January 2017.

General notes

This certificate is based upon the equipment tested. The manufacturer is responsible for ensuring that on-going production complies with the requirements of the EN 15267. The manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management systems shall be subject to regular surveillance.

If a product of the current production does not conform to the certified product, TÜV Rheinland Energy GmbH must be notified at the address given on page 1.

A certification mark with an ID-Number that is specific to the certified product is presented on page 1 of this certificate. This can be applied to the product or used in publicity material for the certified product.

This document as well as the certification mark remains property of TÜV Rheinland Energy GmbH. With revocation of the publication the certificate loses its validity. After the expiration of the certificate and on requests of the TÜV Rheinland Energy GmbH this document shall be returned and the certificate mark must not be employed anymore.

The relevant version of this certificate and its expiration is also accessible on the internet: qal1.de.

Certification of FDM II Standard is based on the documents listed below and the regular, continuous monitoring of the Quality Management System of the manufacturer:

Initial certification according to EN 15267

Certificate No. 0000053812: 25 April 2017
Expiry date of the certificate: 14 March 2022

Test report: 936/21233015/A dated 29 August 2016
TÜV Rheinland Energy GmbH, Cologne
Publication: BAnz AT 15.03.2017 B6, chapter I no. 1.1
Announcement by UBA dated 22 February 2017