

# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

***Model PCME STACK 980 Particulate Measurement System  
Model 980 stainless steel sensor  
Model 980 insulated sensor***

manufactured by:

***PCME Limited***

*Clearview Building  
Edison Road  
St Ives  
Cambridgeshire  
PE27 3GH*

has been assessed by Sira Certification Service  
and for the conditions stated on this certificate complies with:

**MCERTS Performance Standards for Automated Dust Arrestment-Plant Monitors, Version 1,  
August 2010, Class 2 PM-CEM**

Certification Ranges :

Particulate concentration 0 to 15 mg/m<sup>3</sup>

Project No: 16A21985  
Certificate No: Sira MC110187/01  
Initial Certification: 04 March 2011  
This Certificate Issued: 04 March 2016  
Renewal Date: 03 March 2021

Joe Prince MSc, MInst MC  
Deputy Certification Manager

MCERTS is operated on behalf of the Environment Agency by

## **Sira Certification Service**

Unit 6, Hawarden Industrial Park  
Hawarden, Deeside, CH5 3US  
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*The MCERTS certificate consists of this document in its entirety.  
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## Approved Site Application

*Any potential user should ensure, in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For general guidance on monitoring techniques refer to the Environment Agency Monitoring Technical Guidance Notes available at [www.mcerts.net](http://www.mcerts.net)*

The PCME STACK 980 is certified as a Class 2 PM-CEM, which can be calibrated in mass concentration units (e.g. mg/m<sup>3</sup>) and used for dust arrestment control purposes. It is classed as a filter-dust monitor in EN15859.

## Basis of Certification

This certification is based on the following Test Report(s) and on Sira's assessment and ongoing surveillance of the product and the manufacturing process:

TÜV Rheinland	Report Number: 936/21206365/C, dated 04 September 2008
Sira Report	16A21985 dated 16 February 2011

## Product Certified

The measuring system consists of the following parts:

- PCME STACK 980 sensor
- PCME STACK 980 PLUS (sensor and multi-controller)
- PCME STACK 980 (sensor and interface module)

This certificate applies to all instruments fitted with serial number 36404 onwards. Software version:

- Sensor version 4.4 onwards
- Controller version 7.75 onwards

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### Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -20°C to +50°C

Instrument IP rating: IP 65

Note: If the instrument is supplied with an enclosure then the ambient temperature shall be monitored inside the enclosure to ensure that it stays within the above ambient temperature range.

Unless otherwise stated the evaluation was carried out on the certification range 0 to 15mg/m<sup>3</sup>

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time					<2s	<200s
Repeatability standard deviation at zero point	0.00					<2.0
Repeatability standard deviation at span point	0.01					<2.0
Influence of ambient temperature zero point	0.07					<5.0
Influence of ambient temperature span point		-0.88				<5.0
Influence of voltage variations (80V – 120V and 190V – 250V)	0.43					<2.0
Influence of vibration (10 to 150Hz at 9.81m/s )					No effect	<2.0
Cross sensitivity:						
Influence from duct gas velocity					No effect >8m/s	
Influence of particle material					See Note 1	
Influence from particle static charge					See Note 1	To be reported
Influence from particle grain size					See Note 1	
Influence from moisture in the duct (water vapour)					See Note 1	
Influence from aerosols in the duct (water droplets)					See Note 1	
Influence from duct gas temperature					See Note 1	

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Detection limit	0.00					<2.0
Calibration function (field)					0.93	>0.70
Maintenance interval (field)					12 weeks	>8 days
Zero point drift (field)					0.2% over 6 months	<3.0
Span point drift (field)					-0.2% over 6 months	<3.0
Availability (field)					99.8%	>95%
Reproducibility (field)	0.23					<3.3

Note 1. The manufacturer advises the following for the STACK 980, utilising the *ElectroDynamic*<sup>TM</sup> technique;

- It is only suitable for measurement in non-condensing flue gases.
- It is not suitable for use with electrostatic precipitators or applications with water droplets.
- For high humidity and condensing gas applications the insulated probe design should be used.
- Since particle-size distribution would not ordinarily change under normal conditions, calibration of the STACK 980 is required at each installation.

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## Description

The PCME STACK 980 utilises *ElectroDynamic*<sup>™</sup> Probe electrification technology to continuously monitor emissions of Particulate Matter (PM) from stacks.

In compliance with EN15859 the PCME STACK 980 has automatic zero and span/reference checks. There are additional checks specifically designed to test for contamination (probe short circuit check and contamination ring check).

The PCME STACK 980 sensor is a standalone AMS providing RS-485 and optional 4-20mA outputs. In a PCME STACK 980 PLUS configuration, a sensor can be connected to a multi-controller, capable of providing user interface and data acquisition for up to thirty two sensors. In a PCME STACK 980 configuration sensors are connected to an interface module, for user interface and data acquisition of single sensor. The sensors and control units are connected by a 4 core cable that provides power and internal communications.

The multi-controller and interface module have graphic screen capability to diagnose filter performance and maintenance conditions and also record and average data for emissions reporting. Inputs from temperature and oxygen normalisation can be made via an Analogue Input Module (AIM) unit and connections made to PC networks for emissions reporting (Ethernet option). PCME Dust Tools software is available for transferring stored data for emissions reporting.

## General Notes

1. This certificate is based upon the equipment tested. The Manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this Certificate. 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 system shall be subject to regular surveillance according to 'Regulations Applicable to the Holders of Sira Certificates'. The design of the product certified is defined in the Sira Design Schedule for certificate No. Sira MC110187/01
2. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.
3. The Certification Marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of Sira Certificates'.
4. This document remains the property of Sira and shall be returned when requested by the company.

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