

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

PFM20

Manufactured by:

Dr. Födisch Umweltmesstechnik AG


Zwenkauer Str. 159
04420 Markranstädt
Germany

has been assessed by CSA Group
and for the conditions stated on this certificate complies with:

Environment Agency Guidance
“MCERTS for stack emissions monitoring equipment at industrial installations”
- Continuous emissions monitoring systems (CEMS)
Published 20 October 2020
EN 15267-1:2009, EN15267-2:2009 & EN 15267-3:2007
& QAL 1 as defined in EN 14181: 2014

	Certification range:	Supplementary ranges:
Dust	0 - 7.5mg/m ³	0 - 15mg/m ³ 0 - 30mg/m ³ 0 - 250mg/m ³

Project No.: 80144395
Certificate No: CSA MC220416/00
Initial Certification: 22 December 2022
This Certificate issued: 22 December 2022
Renewal Date: 21 December 2027



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Environmental Team Manager

MCERTS is operated on behalf of the Environment Agency by

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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

This instrument is considered suitable for use on waste incineration and large combustion plants. This CEMS has been proven suitable for its measuring task (parameter and composition of the flue gas) by use of the QAL 1 procedure specified in EN14181. The lowest certified range shall not be more than 1.5 times the daily average emission limit value (ELV) for incineration plants, and not more than 2.5 times the ELV for other types of applications.

Basis of Certification

This certification is based on the following test report(s) and on CSA Group's assessment and ongoing surveillance of the product and the manufacturing process:

TÜV Rheinland Energy GmbH, Cologne, report no.: 936/21249601/A, 10 November 2021

Product Certified

The PFM20 measuring system consists of the following parts:

- PFM 20 measuring probe with high-temperature coating with probe housing
- associated software PFM_HID (version 1.43)

This certificate applies to all instruments fitted with software version v1.43, serial number 20001 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 outdoors (+5°C to +40°C indoors)

Instrument IP rating: IP67

Note: For outdoor installations the analyser needs to be mounted into an IP65 environment. 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.

Results are expressed as error % of certification range, unless otherwise stated.

Test (<i>Laboratory</i>)	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time						
Dust 0-7.5 mg/m ³					53s	<200s
Dust 0-15 mg/m ³					54s	<200s
Dust 0-30 mg/m ³					55s	<200s
Dust 0-250 mg/m ³					52s	<200s
Repeatability standard deviation at zero point						
Dust 0-7.5 mg/m ³	0.1					<2.0%
Repeatability standard deviation at span point						
Dust 0-7.5 mg/m ³	0.2					<5.0%
Lack of fit						
Dust 0-7.5 mg/m ³		-0.93				<3.0%
Dust 0-15 mg/m ³		-0.47				<3.0%
Dust 0-30 mg/m ³		0.33				<3.0%
Dust 0-250 mg/m ³		-0.40				<3.0%
Influence of ambient temperature change from nominal value at 20°C within specific range at zero point (-20°C to +50°C)						
Dust 0-7.5 mg/m ³				2.0		<5.0%
Influence of ambient temperature change from nominal value at 20°C within specific range at span point (-20°C to +50°C)						
Dust 0-7.5 mg/m ³			-1.3			<5.0%

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Influence of voltage, at -15% below and at +10% above nominal supply voltage (196V to 230V) Dust 0-7.5 mg/m ³		0.7				<2%
Influence of vibration (10 to 60Hz (±0.3mm), 60 to 150Hz at 19.6m/s ²) Dust 0-7.5 mg/m ³	-0.3					<2%

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Test (<i>Field</i>)	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Determination coefficient of calibration function Dust 0-7.5 mg/m ³					0.9799	>0.90
Response time Dust 0-7.5 mg/m ³					36s	<200s
Lack of fit Dust 0-7.5 mg/m ³	0.33					<3.0%
Minimum maintenance interval					4 weeks	8 days
Zero and Span drift requirement	<p>It is possible to record zero and span drift. This complies with the requirements for QAL3 according to EN 14181. The system is not equipped with automatic drift correction. When the limits of the automatic drift control are reached, an operational status signal is generated.</p>					<p>Clause 6.13 & 10.13</p> <p>Manufacturer shall provide a description of the technique to determine and compensate for zero and span drift.</p>
Zero drift within maintenance interval Dust 0-7.5 mg/m ³		0.7				<3.0%
Span drift within maintenance interval Dust 0-7.5 mg/m ³			1.9			<3.0%
Availability					99.7%	>95.0%
Reproducibility For concentrations >20 mg/m ³ Dust 0-7.5 mg/m ³			1.7			<2.0%
Measurement uncertainty Dust (For an ELV of 5 mg/m ³)					Guidance - at least 25% below max permissible uncertainty 8.4%	<22.5% (30%)

Note 1: The PFM20 has a maintenance interval of 4 weeks. Perform the necessary maintenance as per the manufacturer's recommendations.

Note 2: Restrictions:

- i) at installations with fluctuating exhaust gas velocities, the measuring system requires the signal of a QAL1 certified and calibrated exhaust gas velocity measuring system to compensate for the influence of velocity,
- ii) The measuring system must not be used downstream of electrostatic precipitators, and
- iii) The measuring system must not be used in exhaust gases that are saturated with water vapour.

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Description

The PFM 20 Particulate Filter Monitor is an in-situ dust concentration monitor designed to continuously measure total suspended dust/particulate matter from a duct or stack. It provides qualitative dust/particulate concentration for filter monitoring such as baghouse/envelope/cartridge filters, dust collectors, cyclones and exhaust gas cleaning processes. It is also suited for emission monitoring of waste incineration, furnace, combustion processes and for bag filter leakage detection.

The analysis is based on the tribo-electric measuring principle to generate a dust concentration. This technique, along with automatic zero and reference point checks, provides a certified range of 0-7.5mg/m³ with a supplementary range up to 250mg/m³.

The PFM 20 device has a compact probe head, clamp-connection, coated probe rod with customizable length and power supply options.

4-20mA output and volt-free contacts are included as standard for failure, maintenance and limit values configuration.

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 CSA Group Testing UK Ltd Certificates'.
2. The design of the product certified is held and maintained by TÜV Rheinland for certificate No. Sira MC220416.
3. If a certified product is found not to comply, CSA Group should be notified immediately at the address shown on this certificate.
4. The certification marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of CSA Group Testing UK Ltd Certificates'.
5. This document remains the property of CSA Group and shall be returned when requested by CSA Group.

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