PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

StackFlowMaster System

Manufactured by:

ABB Ltd
Oldends Lane
Stonehouse
Gloucestershire
GL10 3TA

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

MCERTS Performance Standards for Continuous Emission Monitoring Systems, Version 3.5 dated June 2016
EN 15267-3:2007, EN 16911-2:2013
& QAL 1 as defined in EN 14181: 2014

Certification Ranges :

Velocity	2 to 25 m/s (Type A)
Velocity	2 to 35 m/s (Type C)

Project No.:	70175699
Certificate No:	Sira MC180339/01
Initial Certification:	10 April 2018
This Certificate issued:	21 August 2019
Renewal Date:	09 April 2023

Emily Alexander
Environmental Project Engineer

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

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UKAS PRODUCT CERTIFICATION 011

sira CERTIFICATION

Form 1335
Issue 7

Certificate Contents

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

On the basis of the assessment and the ranges required for compliance with EU Directives this instrument is considered suitable for use on waste incineration and large coal-fired combustion plant applications. This CEM 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, for IED Chapter III and IED Chapter IV applications for the ranges specified. The lowest certified range for each determinand shall not be more than 1.5X the daily average emission limit value (ELV) for IED Chapter IV applications, and not more than 2.5X the ELV for IED Chapter III and other types of application.

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:

TUV Rheinland Report No: 936_21215448A dated 11th October 2012
TUV Rheinland Report No: 936_21215448A dated 26th March 2013
TUV Rheinland Report No: 936_20150811 dated 11 August 2015

Product Certified

The StackFlowMaster (FPD580) measuring system consists of the following parts:

- Measuring probe: either 400 series (25mm outer diameter) or 500 series (60mm outer diameter)
- Multivariable transmitter 267CS and 266
- 266 – FPD583 and FPD585
- Interface unit A, B, C and D (FPD583 or FPD585 without Equilibar)

This certificate applies to all instruments fitted with software version 27 (serial numbers; Type A - 267CS6502019088 and Type C - 267CS6502008435 for 267CS transmitter and 3K650000220853 for 266 transmitter) onwards.

Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -20°C to +50°C
Instrument IP rating: IP67

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.

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

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time					6s	<60s
Repeatability standard deviation at zero point	0.00					<2.0%
Repeatability standard deviation at span point	0.1					<2.0%
Lack-of-fit	0.16					<3.0%
Influence of ambient temperature zero point	0.30					<5.0%
Influence of ambient temperature reference point	0.40					<5.0%
Influence of voltage variations 190 to 250V	0.10					<2.0%
Influence of vibration	0.3					<2.0%
Measurement Uncertainty	1.7%					Guidance – at least 25% below max permissible uncertainty (<7.5%)

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Calibration function (field)					Note 1 >0.90	>0.90
Response time (field)					7s	<60s
Lack-of-fit (field)	0.4					<3%
Maintenance interval					Note 2 4 weeks	>8 days
Zero and Span drift requirement	The instrument allows for the recording of zero and span point drift. Hence, it fulfils the requirements of QAL3 according to EN 14181.					Clause 6.13 & 10.13
Change in zero point over maintenance interval	0.4					<2.0%
Change in reference point over maintenance interval	-0.4					<4.0%
Availability					99.8 %	>95%
Reproducibility			1.4			<3.3%

Note 1: Calibration function calculated in accordance with EN 16911-2

Note 2: The StackFlowMaster has a maintenance interval of 4 weeks. The work detailed below should to be carried out at regular intervals, depending on local conditions:

Zero and reference point checks. Check the electrical connections and cables. Check pressure transmitters and fittings for leaks.

Depending on the dust content in the stack, it is important to ensure that the Pitot tube orifices do not become blocked. It may necessary to schedule a shorter cleaning interval.

Description

The StackFlowMaster system is designed for the monitoring of flow in ducts or stacks and uses a Torbar (a multi-port, self-averaging Pitot tube), as the primary measuring element. A differential pressure (DP) is created between the high pressure created when the flow impacts the upstream holes and the low (or static) pressure measured at the single downstream hole. This differential pressure is proportional to the square of the gas velocity.

The Torbar probes available are:

F3	25 mm OD flanged probe without end support
F4	25 mm OD flanged probe with cup end support
F5	25 mm OD flanged probe with flanged external end support
G3	60mm OD flanged probe without end support
G5	60mm OD flanged probe with flanged external end support

The 267CS/266 multivariable transmitters can be mounted integral to the Torbar probe or remotely. The 267CS/266 accept a temperature input (RTD) and will provide temperature compensation. The temperature measurement was not evaluated.

The interface unit A, B, C or D (FPD583 or FPD585 without Equilibar) monitors the health of the transmitter. When the 267CS/266 transmitters are functioning correctly, a contact output is provided. The contact output is lost in the event of a fault with the 267CS/266 transmitters.

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'.

2. The design of the product certified is defined in the Sira Design Schedule V00 for certificate No. Sira MC180339/00

3. 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.