PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

FWE 200 Dust Concentration Monitor

manufactured by:

SICK Engineering GmbH
Bergener Ring 43
01458 Ottendorf-Okrilla
Germany

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 2, Revision 1 (April 2003)

Certification Ranges :

Particulate Concentration	0 to 15 mg/m^3
	0 to 50 mg/m^3

Project No:	674/0113C
Certificate No:	Sira MC 040039/01
Initial Certification:	14 July 2004
This Certificate Issued:	08 August 2007
Renewal Date:	13 July 2009

Technical Director

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service
12 Acorn Industrial Park, Crayford Road, Crayford
Dartford, Kent, UK, DA1 4AL
Tel: 01322 520500 Fax: 01322 520501

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Certified Performance

The instrument was evaluated for use under the following conditions:
Ambient Temperature Range: -20°C to +50°C

Performance values are expressed as a percentage of the smallest certification range, except for availability and analysis function, and ' a ' indicates compliance with MCERTS requirements.

Test	Results expressed as % of certification range				Other results	MCERTS* specification
	<0.5	<1	<2	<4		
Linearity		a				<±2%
Temperature dependent zero drift	a					<0.3%
Temperature dependent span drift	a					<0.3%
Response time					See note 1	<200s
Detection limit	a				See note 2	<5%
Accuracy/Analysis function (field)					>90% -	>90% (<20mg/m^3) >95% (>20mg/m^3)
Integral performance					- 4,7%**	> 20% (<20mg/m^3) <10% (>20mg/m^3)
Availability (field)					99,8%	>95%
Voltage effect, at ±15% from the norm	a					<2%
Zero shift (field)	a				-	< 3%/week (<20mg/m^3) <2%/week (>20mg/m^3)
Span shift (field)	a				-	< 3%/week (<20mg/m^3) <2%/week (>20mg/m^3)

*MCERTS performance limit Version 2 Revision 1, April 2003 Specification given is for range <20mg/m³)
** Measured in measuring range 0 to 50 mg/m³

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Test	Results expressed as % of certification range				Other results	MCERTS* specification
	<0.5	<1	<2	<4		
Reproducibility:					36 69	> 30 (<20mg/m^3) >50 (>20mg/m^3)
Vibration test					See note 3	Not specified
Sample gas pressure					See note 4	To be reported
Sample gas temperature					See note 5	To be reported
Maintenance Interval					4 weeks	To be reported

*MCERTS performance limit Version 2 Revision 1, April 2003 Specification given is for range <20mg/m³)

Note 1: The response time of the monitors is adjustable between 0,1 and 600 seconds. Setting for the response time was 60 s during the testing which easily fulfils the requirement.

Note 2: The value for the detection limit was taken from the test of the dust monitor FW101 which was the analyser of the FWE 200 system. The detection limit is presented as % of the smallest certification range.

Note 3: A visual examination did not identify any components in the probe that are likely to be affected by vibration. Hence the test was not carried out. Also the field test results from different types of plants have shown that typical vibrations on site have no influence to the measuring signal of these instruments.

Note 4: Test not required, as system is an extractive analyser with a pumped sampling system

Note 5: Test not required as no active detection parts are exposed to the flue gas temperature

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Field Test Site

The application for MCERTS certification sought by the manufacturer was for a waste incineration plant.

The FWE 200 analyser was assessed on the basis of a four month trial mounted on a waste incineration plant.

Approved Site Application

On the basis of these tests this certificate is valid when the instrument is used on waste incineration and large coal-fired combustion plant applications.

However any potential user should ensure, in consultation with the manufacturer, that the emission monitoring system is suitable for the process on which it will be installed. The MCERTS standard gives guidance of process conditions for some other types of plant.

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 No: 936/801004/A dated 6th August 2001 (FWE 200)
TÜV Essen Report No: 2.4.2/0855/93-203 55 395 -101 dated July 7th 2000 (FW 101)

TÜV reports are accepted on the basis of the Environment Agency's document 'MCERTS – Guidance on the acceptance of German type approval test reports for CEMS' Version 2 (October 2003)

Product Certified

This certificate applies to FWE200 model. The analyser module of FWE200 is a FW101 probe. The system consists of:

- A sampling system including probe
- The analyser module including FW101 probe

The software status certified is version 03003021 onwards.

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Description:

FWE 200 is an extractive dust monitor using the scattered light principle for dust concentration measurement in wet gas. The instrument extracts a sample flow from the flue gas duct via a probe. The extracted gas is superheated in a thermo cyclone before it is supplied to the scattered light cell.

By the use of different nozzles it is possible to perform an iso-kinetic or over iso-kinetic sampling which means the flow in the nozzle of the sampling probe is equal or higher than the gas velocity in the duct. The manufacturer states this minimizes the loss of particles.

FWE 200 is designed for applications where temperatures inside the exhaust gas duct are below the water dew point.

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 MC 040039/01.

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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