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PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

OMD 41 Opacity and Dust Concentration Monitor (OMD-41-02 & OMD41-03 versions)

manufactured by:

SICK MAIHAK GmbH

*Nimburger Straße 11
79276 Reute
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 :

OMD 41-03	0 to 0.1 Optical Density (Extinction)
OMD 41-02	0 to 0.3 Optical Density (Extinction)

Project No: 674/0113
Certificate No: Sira MC 040042/01
Initial Certification: 10 August 2004
This Certificate Issued: 08 August 2007
Renewal Date: 09 August 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 +55°C

Performance values are expressed as a percentage of the 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: OMD 41-02 OMD 41-03		a a				<±2% <±2%
Temperature dependent zero drift	a					<0.3%
Temperature dependent span drift	a					<0.3%
Response time					See note 1	<200s
Detection limit: OMD 41-02 OMD 41-03		a	a		See note 2	<5% <5%
Accuracy/Analysis function (field):					Meets requirements	>95%
Integral performance: OMD 41-02					7,6%	<10%
Availability (field)					95,7%	>95%
Voltage effect, at ±15% from the norm	a					<2%
Zero shift (field)	a					<2%/week
Span shift (field)	a					<2%/week
Field repeatability (Reproducibility)					120 See note 3	>50
Vibration test					See note 4	Not specified
Sample gas pressure					See note 5	To be reported

* MCERTS performance limit Version 2 Revision 1, April 2003 (Quantitative dust measurement > 20 mg/m³)

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Test	Results expressed as % of certification range				Other results	MCERTS* specification
	<0.5	<1	<2	<4		
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 (Quantitative dust measurement > 20 mg/m³)

- Note 1: The response time of the monitors is adjustable between 1 and 360 seconds. Standard setting for the response time is 60 s that meets the requirement.
- Note 2: The detection limit is presented as % of the smallest certification range.
- Note 3: Related to measuring range 0 to 0.3 Ext.
- Note 4: 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 5: The OMD41 in situ analysers measure the dust concentration directly within the stack in operating conditions.

Field Test Site

The OMD 41 (version OMD41-03) analyser was assessed on the basis of a five month trial mounted on a coal fired power station.

Approved Site Application

On the basis of these tests this certificate is valid when the instrument is used on 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.

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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 Essen Report No: 352/0855/93-57 89 39/01 dated July 24th 1995
TÜV Essen Report No: 242/0855/93-204 08 799 dated May 25th 2000

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

The tested OMD 41 system consists of the following components:

- Transceiver unit: OMD 41-M
- Reflector unit: OMD 41-R
- Connection unit OMD 41-A
- Purge air system

The software status certified is version 5.92 onwards.

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Description:

OMD 41 is a dust concentration and opacity monitor. It is designed for monitoring dust concentrations in industrial plants, with measuring paths of up to 15 metres. The OMD 41 is a transmissometer that operates according to the autocollimator principle. Measured light is produced by a pulsed LED light source. The light beam crosses two times the stack diameter.

The OMD41-02 version is identical to the OMD41-03 version except that the production tolerances for the receiver's optics and their alignment are subject to lower requirements for the OMD41-02 version if the required measuring range is minimum extinction 0.3.

Additional to the automatic zero-point and span check cycle a linearity test with 4 measuring points is integrated. Further a contamination measurement and correction is performed for the optical surfaces of both transceiver and reflector unit.

The manufacturer states that measuring ranges are freely selectable between Extinction 0.1 and 2.0. The ranges stated are the minimum for higher ranges consult the manufacturer. The manufacturer states that applications examples for the OMD 41 are power plants, cement manufacture, monitoring/controlling electronic filters, steel and glass industry and monitoring technical equipment downstream of filter systems.

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 040042/01.
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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