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PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

**Model ZFG2 in-situ Zirconia Oxygen Probe with ZDT
Oxygen Indicator/Transmitter**

manufactured by:

**ABB Limited
Instrumentation
Automation Technologies**

*Oldends Lane
Stonehouse
Gloucester
GL10 3TA
UK*

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 :

O₂ 0 to 25% vol

Certificate No:	Sira MC 990001/03
Initial Certification:	06 September 1999
This Certificate Issued	09 August 2007
Renewal Date:	05 September 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: Stack Components -20 to +70°C
Control Unit -20 to +50°C

Relative Humidity: Stack Components 5 to 95% (including condensation)
Control Unit 20 to 80% (excluding condensation)

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 max of certification range				Other results	MCERTS specification*
	<0.1	<0.2	<0.5	<1.0		
Linearity		b				<±0.3 % vol
Cross-sensitivity				b	Note 1	<±4 %
Ambient temperature: Zero shift ($\Delta T = 10\text{ }^{\circ}\text{C}$)					-0.02 %/°C	<±0.5 % vol per °C
Ambient temperature: Span shift ($\Delta T = 10\text{ }^{\circ}\text{C}$)					-0.70 %/°C	<±0.5 % vol per °C
Response time					71 s	<200 s
Detection limit - % of range						<0.2%
Detection limit - % of emissions limit					-	-
Repeatability					<0.10 %	-
Maintenance interval: (field test)					17 weeks	To be reported
Availability (field test)					100 %	>95 %
Integral performance (field test)					1.7 %	<5 %
Zero drift (weekly)	b					<±0.2 % vol
Span drift (weekly)	b					<±0.2 % vol
Vibration 10-150Hz at 19.6m/s ²	b					Not specified

* MCERTS performance limit Version 2, Revision 1, April 2003

Note 1: Cross-sensitivity to interfering substances was only performed on zero measurements.

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Field Test

The ZFG2/ZDT analyser was assessed on the basis of a three month field trial mounted on a waste incinerator.

Fuel capacity of the incinerator was 11 tonnes/hour. Abatement techniques were carbon and lime injection, and bag filters.

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.

For general guidance on stack emission monitoring techniques refer to Environment Agency Technical Guidance Note M2: Monitoring of stack emissions to air. This is available on the Agency's website at www.environment-agency.gov.uk

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:

NPL Report	QE21/N99/006 dated 22 July 1999
AEAT Report	MCT/WTC/B.01/SO1 dated July 1999
Sira Report	N 0309 dated July 1999

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Description:

The system measures oxygen, primarily in stack gases. It consists of two components, the ZFG2 in-situ probe that is stack mounted and the ZDT transmitter that is mounted remotely from the probe.

The zirconia sensor within the probe is controlled at 700°C by an integral heater. The sensor gives a Nernstian response to the ratio of the reference and measured oxygen partial pressures across the sensor. Reference air can be supplied to the probe by an optional pump unit mounted in the ZDT transmitter.

The system may be calibrated in-situ by injection of calibration gases within the probe filter.

Ordering Code of System Tested:

ZFG2/41111112(probe unit)
ZDT/0120(control unit)

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 990001/03.
2. If certified product is found not to comply, Sira Certification Services 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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