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PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

Servomex 2700 Oxygen Analyser

manufactured by:

Servomex Group Ltd

Jarvis Brook
Crowborough
East Sussex
TN6 3DU
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 :

O ₂	0 to 6 %vol
	0 to 12 %vol
	0 to 25 %vol

Project No: 674/0208
Certificate No: Sira MC 070100/00
Initial Certification: 12 February 2007
This Certificate Issued: 12 February 2007
Renewal Date: 11 February 2012

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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Approved Site Application

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.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.

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 Number: 936/808018/A dated 30/09/99
SIREP	Report Number: E1794 dated June 2002

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 2700 measuring system consists of the following parts:

- Sensor head 02720/02721
- Control unit 02710
- Probe 02740

This certificate applies to all instruments fitted with software version 2710/651/0 onwards (serial number 190 onwards).

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -20°C to $+50^{\circ}\text{C}$

Unless otherwise stated the evaluation was carried out on the certification range 0 to 25 %vol.

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<4		
Linearity	-0.09					<0.3%
Cross-sensitivity (H_2O), CO , CO_2 , CH_4 , N_2O , NO , NO_2 , NH_3 , SO_2 , HCl)	0.03					<4%
Temperature dependent zero shift	0.03					<0.5%/°C
Temperature dependent upper reference point shift	0.03					<0.5%/°C
Response time					<30s	<200s
Detection Limit	0.10					<2%
Influence of test gas flow on the measurement signal (0.5 to 3l/min)					No deviations	<1%
Vibration test (10 to 62Hz ($\pm 1\text{mm}$), 62 to 150Hz at 9.81m/s^2)					No effect	To be reported
Mains voltage (190V to 250V)					Pass	Not specified
Sample gas pressure: change in indication at each of the following sample pressures:						To be reported
1035 mbar	0.11					
1085 mbar	0.23					
1135 mbar	0.36					
1185 mbar	0.48					
1235 mbar		0.61				
1285 mbar		0.80				

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<4		
Sample gas temperature: tested at 100°C and 300°C	-0.03					To be reported
Analysis function (field) ^{Note 1}					99.8%	>95%
Availability ^{Note 1}					99.5%	>95%
Zero drift during field trial ^{Note 1}	<0.2					<0.2%/week
Upper reference point drift during field trial ^{Note 1}	<0.2					<0.2%/week
Maintenance Interval ^{Note 1}					28 days	To be reported

Note 1: Field test: The 2700 system was assessed on the basis of a three month field trial mounted on a waste incinerator.

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Description:

The Servomex 2700 oxygen analyser provides insitu measurement of the concentration of oxygen in the flue gas of combustion processes by using the EML (electrical motive force) produced by a temperature stabilised zirconia cell which indicates the amount of oxygen present. This electric charge is captured on both sides of a membrane with electrodes made of platinum. The measured value is determined according to the Nernst equation.

The 02740 probe consists of a sample tube and optional filter which are configured in accordance to the specific application. The sensor head consists of: the mounting flange, a heated box, measuring sensors and electronics terminal box. The 02710 control unit converts the signals from the measuring sensors, controls the temperature of these plus their heated box, performs self diagnostics, enables calibration functions, setting of output ranges, setting of alarm levels, provides status signals and current outputs for transmitting to other devices.

As an option the analyser can also provide insitu measurement of the concentration of combustibles in the flue gas. The measurement of combustibles is not covered by the scope of this MCERTS certificate. However it has been evaluated by Sira and report E 1794 S O2 dated June 2002 is available from the manufacturer on request.

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 070100/00.
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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