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PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

MLT 1 Multi-gas Analyser

manufactured by:

Emerson Process Management
Manufacturing GmbH & Co.OHG
Industrie Straße 1
D-63594 Hasselroth
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 (April 2003)

Certification Ranges :

| | |
|-----------------|----------------------------|
| SO ₂ | 0 to 400 mg/m ³ |
| NO | 0 to 335 mg/m ³ |
| O ₂ | 0 to 25 % vol |

Project Number: 674/0137
Certificate No: Sira MC 050051/01
Initial Certification: 04 February 2005
This Certificate Issued: 06 September 2007
Renewal Date: 03 February 2010

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: +5°C to +40°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 | | | | | | |
| NO | a | | | | 0.4% | <2% |
| SO ₂ | a | | | | 0.3% | <2% |
| O ₂ | a | | | | 0.2% | <0.3% |
| Cross sensitivity | | | | | | |
| Effect of CO ₂ , CO, SO ₂ , NH ₃ , N ₂ O, HCl, H ₂ O, CH ₄ | | | | a | | <±4% |
| All gases (except O ₂) | | | | | | <±4% |
| O ₂ | a | | | | | <±4% |
| Temperature dependent zero shift: | | | | | | |
| NO | a | | | | 0.04%/°C | <0.3%/°C |
| SO ₂ | a | | | | 0.06%/°C | <0.3%/°C |
| O ₂ | a | | | | 0.007%/°C | <0.5%/°C |
| Temperature dependent span shift: | | | | | | |
| NO | a | | | | 0.08%/°C | <0.3%/°C |
| SO ₂ | a | | | | 0.09%/°C | <0.3%/°C |
| O ₂ | a | | | | 0.02%/°C | <0.5%/°C |

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| Test | Results expressed as % of max of certification range | | | | Other Information | MCERTS specification |
|------------------------------|--|----|----|----|--------------------------|----------------------|
| | <0.5 | <1 | <2 | <4 | | |
| Response time | | | | | <60s with 8m sample line | <200s |
| Detection limit | | | | | | |
| NO | | | a | | | <2% |
| SO ₂ | | a | | | | <2% |
| O ₂ | a | | | | <0.2% | <0.2% |
| Integral Performance (field) | | | | | | |
| NO,SO ₂ , | | | | a | | <10% |
| O ₂ | a | | | | | <5% |
| Availability (field) | | | | | 99.6% | >95% |
| Maintenance interval | | | | | | |
| NO,SO ₂ | | | | | 6 months | To be reported |
| O ₂ | | | | | 3 months | |
| Zero drift (field) | | | | | | |
| NO,SO ₂ | | | | | <2% in 6 months | <2%/week |
| O ₂ | | | | | <0.2% in 3 months | <0.2%/week |
| Span drift (field) | | | | | | |
| NO,SO ₂ | | | | | <2% in 6 months | <4%/week |
| O ₂ | | | | | <0.2% in 3 months | <0.2%/week |

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Field Test Site

The MLT1 analyser was assessed on the basis of a five month trial mounted on a waste incinerator. A second field test was performed on a waste incinerator plant for one year.

Approved Site Application

On the basis of these tests and the ranges for compliance with EU Directives this instrument is considered suitable for use on large combustion plant applications.

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

Test Reports

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 Köln Report No: 936/8060 17/A dated 16.02.1999
TÜV Köln Report No: 936/8060 17/D dated 09.08.1999

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 instruments with software version 3.2x onwards.

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Description

The MLT 1 has the capability to continuously measure up to 5 components in a single analyser, using various combinations of non-dispersive infrared (NDIR), non-dispersive ultraviolet (NDUV), (VIS) spectroscopy, electrochemical or paramagnetic oxygen sensors and thermal conductivity (TC) sensors. The MLT 1 also manages up to 8 associated parameters such as temperature, pressure, and gas flow.

The possible configurations are:

- 1 to 4 NDIR channels
- 1 to 4 O₂ channels
- 1 to 2 O₂/TC channels
- 1 NDIR/UV, 1 NDIR plus 1 or 2 O₂/TC channels

The MLT1 may be configured as:

- Standalone Analyser: Comprises an analyser sensor, associated electronics and internal sample and utility gas transport components integrated into a housing, complete with internal power supply, control functionality, display, operator interface and input/output options – analogue, serial or digital.
- Analyser Module (AM): A blind analyser unit capable of measuring concentration, comprising detector sensor, associated electronics, internal sample and utility gas transport components. Concentration and other relevant data is combined and made available on a digital data highway to an Emerson NGA network or customer network.
- Integrated Network of Analysers: AM versions can be integrated in an NGA analyser system (mounted into a platform or combined with an MLT/TFID analyser or platform).

Mounting

The MLT-1 analyser is mounted in a standard, 3 U high 1/2 - 19 inch rack mounting enclosure with external 24V power supply.

Sample Conditions

The MLT-1 Analyser requires extractive sample conditioning equipment. The sample gas must be clean, dry, non-condensing and at atmospheric pressure. The required sample flow rate is 0.2 to 1.5 l/min.

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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 MC050051/01.
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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