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PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

***EuroFID TOC FID Analyser
(Type In-line and Panel Mounted)***

manufactured by:

Analysenmeßtechnik BERNATH ATOMIC GmbH & Co. KG
*Gottlieb-Daimler Straße 11-15
30974 Wenningsen
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 Range:

TOC 0 to 15 mg/m³

Project No: 674/0113K
Certificate No: Sira MC 040046/01
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
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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range (Panel Mounted version): 0°C to 40°C
 Ambient Temperature Range (In-Line version): -20°C to 50°C

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

Test	Results expressed as % of certification range				Other results	MCERTS* specification
	<0.5	<1	<2	<4		
Linearity:						
In-Line, Panel Mounted (He/H ₂)					0.15 mgC/m ³	<±0.4 mgC/m ³
Panel Mounted (H ₂)					0.29 mgC/m ³	<±0.4 mgC/m ³
Cross-sensitivity:						
In-Line, Panel Mounted (He/H ₂)					0.57 mgC/m ³	<±1.0 mgC/m ³
Panel Mounted (H ₂)					<0.9 mgC/m ³	<±1.0 mgC/m ³
Temperature dependent zero drift	a					0.3%/1C
Temperature dependent span drift	a					0.3%/1C
Response time:						
In-Line					6s	<60s
Panel Mounted (He/H ₂)					48 s	<60s
Detection Limit:						
In-Line					0.19 mgC/m ³	0.4 mgC/m ³
Panel Mounted (He/H ₂)					0.11 mgC/m ³	
Availability:						
In-Line					98,8%	>95%
Panel Mounted (He/H ₂)					98,6%	>95%
Time dependant zero drift	a					<2%/week
Time dependant span drift	a					<4%/week

* MCERTS performance limit Version 2 Revision 1, April 2003

Results from the testing of the EuroFID with Burning gas H₂ have been presented and specially marked, others are not available

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Test	Results expressed as % of certification range				Other results	MCERTS* specification
	<0.5	<1	<2	<4		
Effect of oxygen: In-Line Panel Mounted (He/H ₂) Panel Mounted (H ₂)					<0.24mgC/m ³ <0.14mgC/m ³ <0.4mgC/m ³	<±0.8 mgC/m ³ <±0.8 mgC/m ³ <±0.8 mgC/m ³
Response to: aliphatic hydrocarbons aromatic hydrocarbons dichloromethane aliphatic alcohols esters and ketones					0.96 – 1.04 0.96 – 0.98 1.05 – 1.06 0.73 – 0.75 0.68 – 0.80	0.90 – 1.10 0.85 – 1.1 0.75 – 1.15 0.7 – 1.0 No specification
Reproducibility R _D : In-Line Panel Mounted (He/H ₂)					66 53	>30 >30
Range of response factors, variation, including control gas equivalent: In-Line Panel Mounted (He/H ₂)					13.3 % 13.0 %	±15% ±15%
Vibration test					See note 1	Not specified
Sample gas pressure					See note 2	To be reported
Sample gas temperature					See note 3	To be reported
Maintenance Interval					4 weeks	To be reported

*MCERTS performance limit Version 2 Revision 1, April 2003

Note 1: 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. (Panel Mounted version). In-Line version showed its performance directly mounted at the stack and negative effects of the vibration have not been observed during the field test.

Note 2: The system is an extractive analyser with an injector pump sampling system. The influence of sampling gas pressure was tested. A variation of sample gas pressure of ± 5 kPa causes an error of less than 3 % of the measuring range of the analysers.

Note 3: Test not required as no active detection parts are exposed to the flue gas temperature.

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Field Test Site

The EuroFID (Panel Mounted & In-line versions) analyser was assessed on the basis of a 3 month trial mounted on a waste incinerator.

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.

EuroFID is designed and constructed for continuous monitoring of total hydrocarbons in air and in corrosive and condensable gases both in trace levels and concentrations of up to 100% by volume at process temperatures of up to 750 °C.

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 Norddeutschland Report No: 03CU012a dated 8th January 2004 (Panel Mounted version)

TÜV Norddeutschland Report No: 03CU012b dated 8th January 2004 (In-Line version)

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)

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Product Certified

This certificate applies to EuroFID instrument both In-line and Panel Mounted versions.

The Panel Mounted system consists of:

- Sampling probe (stainless steel tube)
- Heated filter (e.g. Model 1705)
- Heated sample gas line
- Analyser module Panel Mounted
- Remote unit

The In-Line system consists of:

- Sampling probe (stainless steel tube)
- Analyser module In-Line with integrated filter
- Remote unit

The software status certified is version 5.2 onwards.

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Description:

EuroFID is a heated total hydrocarbon analyser that is especially designed to include use on under harsh operating conditions. EuroFID is available in two different types: The panel mounting type analyser assembly (Panel Mounted version) and the IN-Line analyser assembly (In-Line version). The analyser module of type In-Line is flanged directly at the duct.

The Panel Mounted version can work with two different burning gases, standard is H₂/He (40/60), but it can also be used with pure H₂. With hydrogen, the cross interferences especially against oxygen are worse, so it should only be used in processes with low variation gas matrices.

The range stated is the minimum range, please contact manufacturer for further details on higher ranges.

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 040046/01.
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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