

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

EuroFID TOC FID Analyser

Manufactured by:

SICK AG

*Poppenbütteler Bogen 9b
D-22399 Hamburg
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 3.4 dated July 2012
EN15267-1:2009, EN15267-2:2009, EN15267-3:2007,
& QAL 1 as defined in EN 14181: 2004**

Certification Ranges :

TOC 0 to 15 mg/m³

Project No. : 674/0113K & 674/0373G
Certificate No : Sira MC 040046/05
Initial Certification : 14 July 2004
This Certificate issued : 12 January 2015
Renewal Date : 13 July 2019

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Technical Director

MCERTS is operated on behalf of the Environment Agency by

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*The MCERTS certificate consists of this document in its entirety.
For conditions of use, please consider all the information within.*

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Approved Site Application

Any potential user should ensure, in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For general guidance on monitoring techniques refer to the Environment Agency Monitoring Technical Guidance Notes available 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. This CEM has been proven suitable for its measuring task (parameter and composition of the flue gas) by use of the QAL 1 procedure specified in EN14181, for LCPD and WID applications for the ranges specified. The lowest certified range for each determinand shall not be more than 1.5X the daily average emission limit value (ELV) for WID applications, and not more than 2.5X the ELV for LCPD and other types of application.

The EuroFID (Panel Mounted & In-line versions) analyser was assessed on the basis of a 3 month trial mounted on a waste incinerator. Both H2 only and H2/He mix fuel types were used during the field test – Please see note 2.

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)
Sira Report	Report number 674/0373H dated 10/01/2010

Product Certified

The EuroFID TOC FID measuring system consists of the following parts.

- Sampling probe (stainless steel tube)
- Analyser module in-line with integrated filter
- Remote unit.

This certificate applies to all instruments from serial number 4343 onwards and software version 5.2 onwards.

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range : -20°C to 50°C
 Instrument IP rating: IP54

Note: The requirement for the protection class of the enclosure is not fulfilled. The measuring system needs to be installed with an IP65 enclosure to meet the requirements of EN 15267-3. If the instrument is supplied with an enclosure, then the ambient temperature shall be monitored inside the enclosure to ensure that it stays within the above ambient temperature range.

Unless otherwise stated the evaluation was carried out on the certification range TOC 0 to 15mg/m³

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time TOC					6s	<200s
Repeatability standard deviation at zero point TOC	0.13					<2.0%
Repeatability standard deviation at reference point TOC	0.00				Note 1	<2.0%
Lack-of-fit TOC	-0.40					<2.0%
Influence of ambient temperature zero point TOC				-2.4		<5.0%
Influence of ambient temperature reference point TOC		0.94				<5.0%
Influence of sample gas pressure TOC					Note 1 & 2 <3% (±5kPa)	<2.0% (±3kPa)
Influence of voltage variations 187 to 250V TOC		0.88				<2.0%
Influence of vibration (10 to 55Hz) TOC					No effect	To be reported

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Cross-sensitivity at zero with interferents: H ₂ O, CO, CO ₂ , N ₂ O, NO, NO ₂ , NH ₃ , SO ₂ , HCl TOC			1.5			<4.0%
Cross-sensitivity at reference with interferents: H ₂ O, CO, CO ₂ , N ₂ O, NO, NO ₂ , NH ₃ , SO ₂ , HCl TOC				-3.4		<4.0%
Effect of oxygen TOC			1.6			<2.0%
Response Factors						
Methane					1.03-1.20	0.9 to 1.2
Aliphatic hydrocarbons					0.96-1.04	0.9 to 1.1
Aromatic hydrocarbons					0.96-0.98	0.8 to 1.1
Dichloromethane					1.05-1.06	0.75 to 1.15
Aliphatic alcohols					0.73-0.75	0.7 to 1.0
Esters and ketones					0.68-0.80	0.7 to 1.0
Organic acids					Note 3	0.5 to 1.0
Measurement uncertainty					Guidance - at least 25% below max permissible uncertainty	
TOC (For an ELV of 10mg/m ³)					19.2%	<22.5% (30%)
Calibration function (field) TOC					0.99	>0.90
Response time (field) TOC					Note 4 6s	<200s
Lack of fit (field) TOC					Note 5 <2.0%	<2.0%
Maintenance Interval TOC					1 Month	>8 days

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Zero and Span drift requirement	<p><i>Statement from manufacturer:</i> EuroFID is equipped with an automated calibration function in order to avoid for deviation caused by drift. The frequency of calibrations can be set by the user. Both zero gas and span gas are used during calibration to determine both zero and span point. If the sensitivity derived from the new calibration has changed by more than a preset factor, an alarm will occur.</p>					<p>Clause 6.13 & 10.13</p> <p>Manufacturer shall provide a description of the technique to determine and compensate for zero and span drift.</p>
Change in zero point over maintenance interval TOC			1.8			<3.0%
Change in reference point over maintenance interval TOC			1.9			<3.0%
Availability TOC					99.8%	>95%
Reproducibility TOC			1.6			<3.3%

Note 1 – Data reported is from the performance testing of the panel mounted version of the EuroFID.

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 <3 % of the measuring range of the analysers.

Note 3 – The EuroFID has not been tested against organic acids in the response factor test.

Note 4 – The result stated is from the laboratory test.

Note 5 – Test data derived from calibration function test.

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Description

EuroFID is a heated total hydrocarbon analyser has been specially designed to include use under harsh operating conditions.

The instrument is attached directly to the plant via a flange. The terminal box supplies the power to the analyser unit. The control unit can be installed at a distance of up to 500 m from the analyser unit. It provides a display and offers the option to enter parameters and output measured values.

The sampling probe extends directly into the process chamber. The fast supply of sample gas through the ejector pump and the measurement principle of the EuroFID3010 ensure a short response time (T_{90}), allowing fast detection of process changes.

The EuroFID measures continuously and has no moving parts. An ejector pump is used instead of a mechanical pump to supply the sample gas.

All parts of the device that come into contact with gas, including the analysis chamber, are heated to prevent condensation from forming inside the analyser unit.

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 MC040046/01
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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