



# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

## **Model 3006 TOC FID Analyser**

manufactured by:

**SICK MAIHAK GmbH**  
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 3.1 dated July 2008,  
EN15267:2007,  
& QAL 1 as defined in EN 14181: 2004**

Certification Ranges :

TOC 0 to 15 mg/m<sup>3</sup>

Project No: 674/0133G & 674/0373D  
Certificate No: Sira MC 040036/02  
Initial Certification: 14 July 2004  
This Certificate Issued: 28 January 2010  
Renewal Date: 13 July 2014

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



## 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. Operators with installations falling under the Large Combustion Plant Directive or Waste Incineration Directive must refer to Technical Guidance Note M20: Quality Assurance of Continuous Emission Monitoring Systems, for guidance on the suitability of CEMS for their installations. M2 and M20 are available on the Agency's website at [www.mcerts.net](http://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 emission limit value (ELV) for WID applications, and not more than 2.5X the ELV for LCPD and other types of application.

The Model 3006 analyser was assessed on the basis of various three month trials mounted on a number of different waste incinerators.

## 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 No: 936/803017/1 dated 28 <sup>th</sup> March 1995 (Model 3006)
TÜV Rheinland	Report No: 936/803017/2 dated 28 <sup>th</sup> March 1995 (Model 3006 for Tetrachloroethylene)
TÜV Norddeutschland	Report No: 128 CU 07710 dated 16 <sup>th</sup> August 1991 (Model 3002 RC)
TÜV Norddeutschland	Report No: 128 CU 11120 dated 3 <sup>rd</sup> March 1993 (Model 3002 RC)
TÜV Rheinland	QAL 1 certificate dated 9 <sup>th</sup> May 2007
Sira Report	Report number 674/0373D dated 10/01/2010

## Product Certified

This certificate applies to Model 3006 instrument. The main components of this system are:

- The analyser with fixture for gas cylinders
- The measuring probe with heated line

This certificate applies to all instruments from serial number 1222 onwards. The Model 3006 FID analyser is purely analogue without software.

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## Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: 0°C to 40°C  
Instrument IP rating: IP20

Note: 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/m<sup>3</sup>

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Security					Note 1	To be reported
Response time					45s	<200s
Repeatability standard deviation at zero point			2.0			<2.0%
Repeatability standard deviation at span point	0.0					<2.0%
Lack-of-fit	0.3					<2.0%
Influence of ambient temperature zero point			+1.4		TBC	<5.0%
Influence of ambient temperature span point				-2.4	TBC	<5.0%
Influence of sample gas flow for extractive CEMS			1.6			<2.0%
Influence of voltage variations 187 to 250V	0.5					<2.0%
Influence of vibration (10 to 60Hz (±0.3mm), 60 to 150Hz at 19.6m/s <sup>2</sup> )					Not tested	To be reported
Cross-sensitivity at zero with interferents: H <sub>2</sub> O, CO, CO <sub>2</sub> , N <sub>2</sub> O, NO, NO <sub>2</sub> , NH <sub>3</sub> , SO <sub>2</sub> , HCl			1.8			<4.0%
Cross-sensitivity at span with interferents: H <sub>2</sub> O, CO, CO <sub>2</sub> , N <sub>2</sub> O, NO, NO <sub>2</sub> , NH <sub>3</sub> , SO <sub>2</sub> , HCl				2.5		<4.0%

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Effect of oxygen		0.71				<2%
Response to:					Note 2	
Methane					1.05	0.9 to 1.2
Aliphatic hydrocarbons					0.99 – 1.05	0.9 to 1.1
Aromatic hydrocarbons					0.98 – 1.1	0.8 to 1.1
Dichloromethane					1.01 – 1.03	0.75 to 1.15
Aliphatic alcohols					0.7 – 0.8	0.7 to 1.0
Esters and ketones					0.7 – 0.8	0.7 to 1.0
Organic acids					0.6	0.5 to 1.0
Measurement uncertainty for an ELV of 10mg/m <sup>3</sup>					25.8% Note 3	Guidance - at least 25% below max permissible uncertainty  22.5% in EN15267-3
Calibration function (field)					0.99	>0.90
Response time (field)					60s	<200s
Lack of fit (field)					Note 4 <2.0%	<2.0%
Maintenance interval					Note 5 3 days	>8 days
Zero and Span drift requirement	<p><u>Statement from manufacturer:</u></p> <p><i>Zero and span drift can be checked and compensated by the user at any time and always before use. Zero point calibration takes place using air or nitrogen. Span point calibration takes place using propane in air. Calibration can be done quickly in the field with on-board gases.</i></p>					<p>Clause 6.13 &amp; 10.13</p> <p>Manufacturer shall provide a description of the technique to determine and compensate for zero and span drift.</p>

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Change in zero point over maintenance interval (weekly drift stated)			1.9			<3.0%
Change in span point over maintenance interval (weekly drift stated)				3.8%	Note 6	<3.0%
Availability					96.8%	>95%
Reproducibility			1.85			<3.3%

Note 1 – The Model 3006 analyser does not have any password protection. It is a portable instrument intended for use by experienced stack testers.

Note 2 – The results for dichloromethane, aliphatic alcohols and esters and ketones are from the testing of the Model 3002 RC which is the non-portable version of Model 3006.

Note 3 – The measurement uncertainty for the Model 3006 FID meets the requirements of EN14181 (30%) but does not meet the EN15267-3 requirement of 22.5%.

Note 4 – Test data derived from calibration function test.

Note 5 – The maintenance interval is stated as 3 days. The instrument is designed for reference monitoring, and therefore would be subject to a calibration check before and after each use, and at least every 24 hours.

Note 6 – The result stated is over a one week maintenance interval. However, the manufacturer recommends a 3 day interval between calibrations which would result in a significantly lower span point change. When used during reference monitoring, calibration checks would be at least every 24 hours.

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### Description:

Model 3006 is a heated total hydrocarbon analyser. It is designed for mobile use and under harsh operating conditions. Its compact and robust assembly allows continuous and discontinuous measurement of organic components also at measuring points with difficult access.

Features including ranges from 100 ppb to 100 000 ppm, internal air supply, and a patented miniature heated sensor block with a flame ionisation detector controlled up to 240 °C make it possible to measure in steam saturated gases.

Model 3006 is a portable analyser and the Model 3002 RC is its stationary version.

### 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 MC040036/01
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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