PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

EL3000-Fidas24

Manufactured by:

ABB Automation GmbH

Stierstaedter Strasse 5
60488 Frankfurt Am Main
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 (CEMS). Version 4 dated July 2018
EN15267-3:2007,
& QAL 1 as defined in EN 14181: 2014

Certification Ranges :

TOC	0 to 15 mg/m^3
	0 to 50 mg/m^3
	0 to 150 mg/m^3
	0 to 500 mg/m^3

Project No.:	70084019
Certificate No:	Sira MC160308/01
Initial Certification:	03 August 2016
This Certificate issued:	13 December 2019
Renewal Date:	02 August 2021

Emily Alexander
Environmental Project Engineer

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

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UKAS PRODUCT CERTIFICATION 0011

The MCERTS certificate consists of this document in its entirety.
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Form 1335
Issue 8

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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 IED Chapter III and IED Chapter IV 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 IED Chapter IV applications, and not more than 2.5X the ELV for IED Chapter III and other types of application.

The field test was performed over a period of more than 3 months in the exhaust gas of a waste incinerator.

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:

TUV Report No 936/21230981/A dated 29 February 2016

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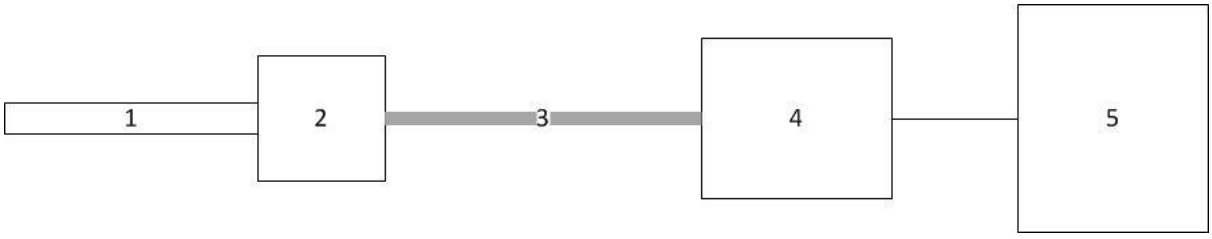
Product Certified

The measuring system consists of the following parts:



1. Sample Probe	2. Heated Filter	3. Heated Sample Line	4. Gas Conditioning	5. Analyser
Model: ABB PFE 3	Model: Ceramic filter, pore size < 0.3µm	Model: ABB 180°C (60m) 6mmID	Model: Aspirator pump integrated	Model: EL3000-Fidas24

Allowable variations could include:

- A different brand or model of sampling system of the same type, provided that there is evidence the alternative system works with similar types of CEM.
- Additional manifolds and heated valves used to allow more than one analyser to share a sampling system.
- The housing is available in two different versions.
  The EL3020 housing is the 19” version intended for rack mounting.
  The EL3040 housing is intended for wall mounting and has a similar size.

This certificate applies to all instruments fitted with software version 3.4.8 onwards (Analyser software) and serial number 33481014 onwards.

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: +5°C to +40°C
Instrument IP rating: IP40 & IP54

Note: The analyzer is intended for indoor installation and fulfills the protection class requirements (>= IP40) as specified in EN15267-3. For outdoor installations the analyser needs to be mounted into an IP65 environment. 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.

Results are expressed as error % of certification range, unless otherwise stated.

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time						
0 to 15mg/m^3					40 seconds	<200s
0 to 50mg/m^3					28 seconds	<200s
0 to 150mg/m^3					25 seconds	<200s
0 to 500mg/m^3					25 seconds	<400s
Repeatability standard deviation at zero point						
0 to 15mg/m^3	0.0					<2.0%
Repeatability standard deviation at reference point						
0 to 15mg/m^3	0.1					<2.0%
Lack-of-fit						
0 to 15mg/m^3	0.47					<2.0%
0 to 50mg/m^3		0.80				<2.0%
0 to 150mg/m^3	0.13					<2.0%
0 to 500mg/m^3	0.40					<2.0%
Influence of ambient temperature zero point (+5°C to +40°C)						
0 to 15mg/m^3			1.5			<5.0%
Influence of ambient temperature reference point (+5°C to +40°C)						
0 to 15mg/m^3			1.8			<5.0%

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Influence of sample gas flow for extractive CEMS 0 to 15mg/m^3			1.3			<2.0%
Influence of voltage variations at zero (196V to 253V) 0 to 15mg/m^3	-0.5					<2.0%
Influence of voltage variations at span (196V to 253V) 0 to 15mg/m^3	0.5					<2.0%
Cross-sensitivity at zero with interferents: O_2, H_2O, CO, CO_2, CH_4, N_2O, NO, NO_2, NH_3, SO_2, HCl 0 to 15mg/m^3				3.69		<4.0%
Cross-sensitivity at reference with interferents: O_2, H_2O, CO, CO_2, CH_4, N_2O, NO, NO_2, NH_3, SO_2, HCl 0 to 15mg/m^3				2.13		<4.0%
Effect of oxygen for TOC CEMS					<2.0%	<2.0%
Response factors for TOC CEMS:						
Methane					1.05 to 1.05	0.9 to 1.2
Aliphatic Hydrocarbons					0.93 to 1.08	0.9 to 1.1
Aromatic Hydrocarbons					0.92 to 1.00	0.8 to 1.1
Dichloromethane					1.00 to 1.08	0.75 to 1.15
Aliphatic alcohols					0.74 to 0.81	0.7 to 1.0
Ester and Ketones					0.75 to 0.78	0.7 to 1.0
Organic Acids					0.52 to 0.52	0.5 to 1.0
Measurement uncertainty 0 to 15mg/m^3					Guidance - at least 25% below max permissible uncertainty 10.3	<22.5% (30%)
Calibration function (field) 0 to 15mg/m^3					0.9960	>0.90
Response time (field) 0 to 15mg/m^3					40 seconds	<200s

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Lack of fit (field) 0 to 15mg/m^3	-0.41					<2.0%
Maintenance interval					4 weeks	>8 days
Zero and Span drift requirement	Within the maintenance interval of 4 weeks no compensation for zero an span drift is necessary. The analyser is checked for zero and span drift every 4 weeks using test gases. Zero-point calibration takes place using air or nitrogen. Span-point calibration takes place using propane or another hydrocarbon in air or nitrogen. Automatic adjustment is possible via built-in zero gas and test gas valves.					Clause 6.13 & 10.13 Manufacturer shall provide a description of the technique to determine and compensate for zero and span drift.
Change in zero point over maintenance interval 0 to 15mg/m^3				-2.6		<3.0%
Change in reference point over maintenance interval 0 to 15mg/m^3					<3.0%	<3.0%
Availability 0 to 15mg/m^3					99.6%	>95%
Reproducibility 0 to 15mg/m^3					0.6%	<3.3%

Description

The EL3000-Fidas24 is a flame ionization detector which measures the total organic carbon (TOC) in the sample gas. For this purpose organic substances are ionized in a hydrogen flame. The current of these ions is proportional to the organic carbon content. The analyser is heated up to 180 °C and can be directly connected to a heated sample-gas line. Thus no cold spots occur at any point.

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'.

2. The design of the product certified is defined in the Sira Design Schedule V04 for certificate No. Sira MC160308/01

3. 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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