PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

EL3000-Limas23

Manufactured by:

ABB Automation GmbH

Stierstädter Straβe 5
D-60488 Frankfurt
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 EN15267-3:2008,
& QAL 1 as defined in EN 14181: 2014

Certification Ranges :

NO	0 to 33.5 mg/m^3	0 to 200 mg/m^3
NO_2	0 to 125 mg/m^3	0 to 500 mg/m^3
SO_2	0 to 75 mg/m^3	0 to 300 mg/m^3
O_2	0 to 25 Vol.-%	

Project No.	:	70060278
Certificate No	:	Sira MC160294/00
Initial Certification	:	10 May 2016
This Certificate issued	:	10 May 2016
Renewal Date	:	09 May 2021

Emily Alexander
Deputy Certification Manager

MCERTS is operated on behalf of the Environment Agency by

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Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
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Form 1335
Issue 2

Certificate Contents

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/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.

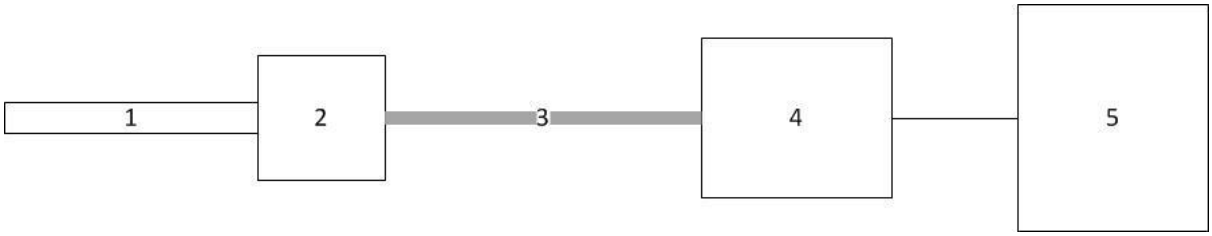
Basis of Certification

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 Süd report number 2231669.2 dated August 2015

Product Certified

The EL3000-Limas23 measuring system consists of the following parts:



1. Sample Probe	2. Heated Filter	3. Heated Sample Line	4. Gas Conditioning	5. Analyser
Model: ABB Type 40 or 42 Heated probe with ceramic filter	Model: N/A Integrated in probe	Model: ABB 180°C (30m in field trial) 6mmID	Model: ABB Advance SCC-C/SCC-F	Model: EL3020-Limas23, Electrochemical Oxygen Sensor (CEM236A)

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.

This certificate applies to all instruments fitted with software version 3.4.5 (serial number 3.346165.9 onwards).

Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: +5°C to +40°C
Instrument IP rating: EL3020 IP40
EL3040 IP54

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						
NO					62s	<200s
NO_2					58s	<200s
SO_2					158s	<200s
O_2					56s	<200s
Repeatability standard deviation at zero point						
NO	0.05					<2.0%
NO_2	0.04					<2.0%
SO_2	0.13					<2.0%
O_2	0.02					<0.20%
Repeatability standard deviation at reference point						
NO	0.07					<2.0%
NO_2	0.13					<2.0%
SO_2	0.26					<2.0%
O_2	0.24					<0.20%
Lack-of-fit						
NO	0.20					<2.0%
NO_2		0.92				<2.0%
SO_2	-0.47					<2.0%
O_2	-0.08					<0.20%

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Influence of ambient temperature zero point (+5°C to +40°C)						
NO			1.04			<5.0%
NO_2			-1.53			<5.0%
SO_2				2.78		<5.0%
O_2	0.23					<0.50%
Influence of ambient temperature reference point (+5°C to +40°C)						
NO	0.91					<5.0%
NO_2			-1.24			<5.0%
SO_2				-3.38		<5.0%
O_2	-0.19					<0.50%
Influence of sample gas flow for extractive CEMS						
NO	0.21					<2.0%
NO_2			-1.31			<2.0%
SO_2		-0.50				<2.0%
O_2	-0.08					<0.2%
Influence of voltage variations (196V to 230V)						
NO	0.23					<2.0%
NO_2	0.19					<2.0%
SO_2		-0.50				<2.0%
O_2	-0.04					<0.2%

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
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						
NO	0.00					<4.0%
NO_2		0.71				<4.0%
SO_2			1.81			<4.0%
O_2	0.11					<0.4%
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						
NO			1.35			<4.0%
NO_2			1.96			<4.0%
SO_2				-3.08		<4.0%
O_2	0.36					<0.4%
Measurement uncertainty					Guidance - at least 25% below max permissible uncertainty	
NO (For an ELV of 36.2 mg/m^3)					3.6%	<15% (20%)
NO_2 (For an ELV of 50 mg/m^3)					14.9%	<15% (20%)
SO_2 (For an ELV of 50 mg/m^3)					10.3%	<15% (20%)
O_2 (For an ELV of 25 Vol.-%)					2.3%	<7.5% (10%)
Calibration function (field)						
NO					0.9416	>0.90
NO_2					0.9480	>0.90
SO_2					0.9115	>0.90
O_2					0.9787	>0.90
Response time (field)						
NO					99s	<200s
NO_2					127s	<200s
SO_2					184s	<200s
O_2					75s	<200s

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Lack of fit (field)						
NO	0.23					<2.0%
NO_2		0.62				<2.0%
SO_2	0.35					<2.0%
O_2	-0.07					<0.2%
Maintenance interval					Note 1 2 Weeks	>8 days
Zero and Span drift requirement	The AMS has a means of manually checking and as necessary re-adjustment of zero point. The deviations are recorded; a status signal is set should the level exceed the permissible limit. The deviations in the indicative drift tests in the laboratory were within the permissible tolerance limits. Limas23 The analyser is equipped with an internal span auto-adjustment facility (option), operating with gas filled cells. A verification of the gas filled cells is required once a year with external reference gas. A weekly zeros calibration is varied out automatically using ambient air. Oxygen sensor The analyser is equipped with automatic single-point adjustment during the maintenance interval, using ambient air. A verification of the analyser at the zero point is required once a year.					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						
NO		0.8				<3.0%
NO_2				-3.0		<3.0%
SO_2			1.9			<3.0%
O_2	-0.13					<0.2%
Change in reference point over maintenance interval						
NO			-1.6			<3.0%
NO_2				-2.9		<3.0%
SO_2			1.9			<3.0%
O_2	-0.14					<0.2%

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Availability					98.6%	>95% (>98% for O_2)
Reproducibility						
NO			1.5			<3.3%
NO_2		0.9				<3.3%
SO_2			1.1			<3.3%
O_2	0.11					<0.2%

Note 1: The EL3000 has a maintenance interval of 2 weeks. The work details below have to be carried out at regular intervals, depending on local conditions:

- Visual check of the measuring system
- Heating check
- Gas flow check
- Condensation drainage check
- Addition of test gases for testing and if necessary realignment of span point or zero point for oxygen in the maintenance interval

Description

The Easyline EL3000-Limas23 Continuous Gas Analyser, consisting of the model line EL3020 (19 inch rack mount) and EL3040 (wall mount), equipped with the following modules:

- Limas23:
- CEM236A (aluminium cuvettes) or
- CEM236Q (quartz glass cuvettes)
- Electrochemical Oxygen Sensor (optional)

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 V00 for certificate No. Sira MC160294/00

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.