

CERTIFICATE

of Product Conformity (QAL1)

Certificate No.: 0000050625_01

AMS designation: AO2000-Fidas24 for TOC

Manufacturer: ABB Automation GmbH
Stierstädter Str. 5
60488 Frankfurt/Main
Germany

Test Laboratory: TÜV Rheinland Energy GmbH

**This is to certify that the AMS has been tested
and found to comply with the standards
EN 15267-1 (2009), EN 15267-2 (2009), EN 15267-3 (2007)
and EN 14181 (2014).**

Certification is awarded in respect of the conditions stated in this certificate
(this certificate contains 8 pages).
The present certificate replaces certificate 0000050625_00 of 25 April 2016.

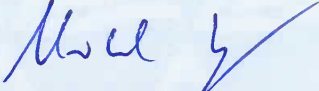


Suitability Tested
EN 15267
QAL1 Certified
Regular
Surveillance

www.tuv.com
ID 0000050625

Publication in the German Federal Gazette
(BAnz) of 14 March 2016


German Federal Environment Agency
Dessau, 13 March 2021



Dr. Marcel Langner
Head of Section II 4.1

This certificate will expire on:
13 March 2026

TÜV Rheinland Energy GmbH
Cologne, 12 March 2021



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Test institute accredited to EN ISO/IEC 17025 by DAkkS (German Accreditation Body).
This accreditation is limited to the accreditation scope defined in the enclosure to certificate D-PL-11120-02-00.

Test Report:	936/21228173/A dated 21 October 2015
Initial certification:	14 March 2016
Expiry date:	13 March 2026
Certificate:	Renewal (of previous certificate 0000050625_00 dated 25 April 2016 valid until 13 March 2021)
Publication:	BAnz AT 14.03.2016 B7, chapter I number 3.1

Approved application

The tested AMS is suitable for use at combustion plants according to Directive 2010/75/EU, chapter III (13th BImSchV), chapter IV (17th BImSchV), 30th BImSchV, 44th BImSchV, plants in compliance with TA Luft and plants according to the 27th BImSchV. The measured ranges have been selected so as to ensure as broad a field of application as possible.

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a three-months field test at a waste incineration plant.

The AMS is approved for an ambient temperature range of +5 °C to +45 °C.

The notification of suitability of the AMS, performance testing and the uncertainty calculation have been effected on the basis of the regulations applicable at the time of testing. As changes in legal provisions are possible, any potential user should ensure that this AMS is suitable for monitoring the limit values relevant to the application.

Any potential user should ensure, in consultation with the manufacturer, that this AMS is suitable for the intended purpose.

Basis of the certification

This certification is based on:

- Test report no. 936/21228173/A dated 21 October 2015 issued by TÜV Rheinland Energie und Umwelt GmbH
- Suitability announced by the German Federal Environment Agency (UBA) as the relevant body
- The ongoing surveillance of the product and the manufacturing process

Publication in the German Federal Gazette: BAnz AT 14.03.2016 B7, chapter I number 3.1, UBA announcement dated 18 February 2016

AMS designation:

AO2000-Fidas24 for total organic carbon

Manufacturer:

ABB Automation GmbH, Frankfurt am Main

Field of application:

For plants requiring official approval and for plants according to the 27th BImSchV

Measuring ranges during performance testing:

Component	Certification range	supplementary measuring ranges			Unit
		0-50	0 - 150	0 - 500	
TOC	0-15	0-50	0 - 150	0 - 500	mg/m ³

Software versions:

Fidas24: 3.4.2

Syscon: 5.1.4

Restrictions:

None

Notes:

1. The maintenance interval is four weeks.
2. It is possible to use the analyser in its versions AO2020 (19" housing for rack mounting) and AO2040 (housing for wall mounting).

Test Report:

TÜV Rheinland Energie und Umwelt GmbH, Cologne

Report no.: 936/21228173/A dated 21 October 2015

Publication in the German Federal Gazette: BAnz AT 01.08.2016 B11, chapter V notification 3, UBA announcement dated 14 July 2016:

3 Notification as regards Federal Environment Agency (UBA) notice of 18 February 2016 (BAnz AT 14.03.2016 B7, chapter I number 3.1)

The current software versions of the AO2000-Fidas24 measuring total organic carbon manufactured by ABB Automation GmbH are:

Fidas24 (AMC-Board): 3.4.4

Syscon: 5.1.4

Statement issued by TÜV Rheinland Energie und Umwelt GmbH dated 29 February 2016.

Publication in the German Federal Gazette: BAnz AT 15.03.2017 B6, chapter V notification 18, UBA announcement dated 22 February 2017:

18 Notification as regards Federal Environment Agency (UBA) notices of 18 February 2016 (BAnz AT 14.03.2016 B7, chapter I number 3.1) and of 14 July 2016 (BAnz AT 01.08.2016 B11, chapter V 3rd notification)

The latest software versions of the AO2000-Fidas24 measuring system for TOC are:

Fidas24 (AMC-Board): 3.4.4

Syscon: 5.1.8

Software versions 5.1.6 and 5.1.7 may also be used.

Statement issued by TÜV Rheinland Energy GmbH dated 6 October 2016

Publication in the German Federal Gazette: BAnz AT 31.07.2017 B12, chapter II notification 3, UBA announcement dated 13 July 2013:

3 Notification as regards Federal Environment Agency (UBA) notices of 18 February 2016 (BAnz AT 14.03.2016 B7, chapter I number 3.1) and of 22 July 2017 (BAnz AT 15.03.2017 B6, chapter V 18th notification)

The current software versions of the AO2000-Fidas24 measuring total organic carbon manufactured by ABB Automation GmbH are:

Fidas24 (AMC-Board): 3.8.0

Syscon: 5.1.12

The Impotron power supply type PSU-0261-12-14 may be used as 24V power supply.

Statement issued by TÜV Rheinland Energy GmbH dated 7 March 2017

Publication in the German Federal Gazette: BAnz AT 26.03.2018 B8, chapter V notification 17, UBA announcement dated 21 February 2018:

17 Notification as regards Federal Environment Agency (UBA) notices of 18 February 2016 (BAnz AT 14.03.2016 B7, chapter I number 3.1) and of 13 July 2017 (BAnz AT 31.07.2017 B12, chapter II 3rd notification)

The current software versions of the AO2000-Fidas24 measuring total organic carbon manufactured by ABB Automation GmbH are:

Fidas24 (AMC-Board): 3.8.2

Syscon: 5.1.14

The U-remote modules manufactured by Weidmüller or the KL series manufactured by Beckhoff may be used as analogue output signals.

Statement issued by TÜV Rheinland Energy GmbH dated 7 December 2017

Publication in the German Federal Gazette: BAnz AT 17.07.2018 B9, chapter III notification 5, UBA announcement dated 3 July 2018:

5 Notification as regards Federal Environment Agency (UBA) notices of 18 February 2016 (BAnz AT 14.03.2016 B7, chapter I number 3.1) and of 21 February 2018 (BAnz AT 26.03.2018 B8, chapter V 17th notification)

The latest software versions of the AO2000-Fidas24 measuring total organic carbon manufactured by ABB Automation GmbH are:

Fidas24 (AMC-Board): 3.8.6
Syscon: 5.1.16

This includes software version 3.8.4. for the AMC-board.

Statement issued by TÜV Rheinland Energy GmbH dated 2 May 2018

Publication in the German Federal Gazette: BAnz AT 24.03.2020 B7, chapter IV notification 1, UBA announcement dated 24 February 2020:

1 Notification as regards Federal Environment Agency notices of 18 February 2016 (BAnz AT 14.03.2016 B7, chapter I number 3.1) and of 3 July 2018 (BAnz AT 17.07.2018 B9, chapter III 5th notification)

The latest software versions of the AO2000-Fidas24 measuring system for total organic carbon manufactured by ABB Automation GmbH are:

Fidas24 (AMC-Board): 3.9.0
Syscon: 5.1.18

Statement issued by TÜV Rheinland Energy GmbH dated 13 September 2019

Certified product

This certification applies to automated measurement systems conforming to the following description:

The AMS is a flame ionization detector (FID) designed to determine total organic carbon (TOC) in exhaust gases.

The extractive AO2000-Fidas24 analyser consists of the following components:

- Analyser AO2000-Fidas24
- heated sensor (180°C) incl. controller, ABB PFE 3
- heated measurement gas line (180°C), (max. 60 m) incl. controller, Teflon sample gas line

For operation, combustion air with a TOC concentration of < 1% of the measurement range is required.

The Fidas24 analyser is an analyser module integrated in a universal housing type AO2000 which is part of the AO2000 series. This housing accommodates the display and control unit, the evaluation unit, the analyser module and the power supply unit. Analogue outputs and data interfaces are also located here.

It is possible to use the analyser in its versions AO2020 (19" housing for rack mounting) and AO2040 (housing for wall mounting).

General remarks

This certificate is based upon the equipment tested. The manufacturer is responsible for ensuring that on-going production complies with the requirements of the EN 15267. The manufacturer is required to maintain an approved quality management system controlling the manufacturing process for the certified product. Both the product and the quality management systems shall be subject to regular surveillance.

If a product of the current production does not conform to the certified product, TÜV Rheinland Energy GmbH must be notified at the address given on page 1.

A certification mark with an ID-Number that is specific to the certified product is presented on page 1 of this certificate.

This document as well as the certification mark remains property of TÜV Rheinland Energy GmbH. Upon revocation of the publication the certificate loses its validity. After the expiration of the certificate and on request of TÜV Rheinland Energy GmbH this document shall be returned and the certificate mark must no longer be used.

The relevant version of this certificate and its expiration date are also accessible on the internet at gal1.de.

Document history

Certification of the AO2000-Fidas24 measuring system is based on the documents listed below and the regular, continuous surveillance of the manufacturer's quality management system:

Initial certification according to EN 15267

Certificate no. 0000050625: 25 April 2016
Expiry date of the certificate: 13 March 2021
Test report no. 936/21228173/A dated 21 October 2015
TÜV Rheinland Energie und Umwelt GmbH, Cologne
Publication: BAnz AT 14.03.2016 B7, chapter I number 3.1
UBA announcement dated 18 February 2016

Notifications in accordance with EN 15267

Statement issued by TÜV Rheinland Energie und Umwelt GmbH dated 29 February 2016
Publication: BAnz AT 01.08.2016 B11, chapter V notification 3
UBA announcement dated 14 July 2016
(New software version)

Statement issued by TÜV Rheinland Energy GmbH dated 6 October 2016
Publication: BAnz AT 15.03.2017 B6, chapter V notification 18
UBA announcement dated 22 February 2017
(New software version)

Statement issued by TÜV Rheinland Energy GmbH dated 7 March 2017
Publication: BAnz AT 31.07.2017 B12, chapter II notification 3
UBA announcement dated 13 July 2017
(new software version, new power supplies)

Statement issued by TÜV Rheinland Energy GmbH dated 7 December 2017
Publication: BAnz AT 26.03.2018 B8, chapter V notification 17
UBA announcement dated 21 February 2018
(new software version, new analogue output module)

Statement issued by TÜV Rheinland Energy GmbH dated 2 May 2018
Publication: BAnz AT 17.07.2018 B9, chapter III notification 5
UBA announcement dated 3 July 2018
(New software version)

Statement issued by TÜV Rheinland Energy GmbH dated 13 September 2019
Publication: BAnz AT 24.03.2020 B7, chapter IV notification 1
UBA announcement dated 24 February 2020
(New software version)

Renewal of the certificate

Certificate no. 0000050625_01: 13 March 2021
Expiry date of the certificate: 13 March 2026

Calculation of overall uncertainty according to EN 14181 and EN 15267-3

Measuring system

Manufacturer	ABB Automation GmbH
AMS designation	AO2000-Fidas24
Serial number of units under test	33481024 / 33481014
Measuring principle	FID

Test report

Test laboratory	TÜV Rheinland
Date of report	2015-10-21

Measured component

Certification range	TOC 0 - 15 mg/m ³
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Evaluation of the cross-sensitivity (CS)

(system with largest CS)

Sum of positive CS at zero point	0.55 mg/m ³
Sum of negative CS at zero point	0.00 mg/m ³
Sum of positive CS at span point	0.32 mg/m ³
Sum of negative CS at span point	-0.49 mg/m ³
Maximum sum of cross-sensitivities	0.55 mg/m ³
Uncertainty of cross-sensitivity	u_i 0.320 mg/m ³

Calculation of the combined standard uncertainty

Tested parameter

			u^2
Standard deviation from paired measurements under field conditions *	u_D	0.048 mg/m ³	0.002 (mg/m ³) ²
Lack of fit	u_{lof}	0.041 mg/m ³	0.002 (mg/m ³) ²
Zero drift from field test	$u_{d,z}$	-0.225 mg/m ³	0.051 (mg/m ³) ²
Span drift from field test	$u_{d,s}$	0.260 mg/m ³	0.068 (mg/m ³) ²
Influence of ambient temperature at span	u_t	0.058 mg/m ³	0.003 (mg/m ³) ²
Influence of supply voltage	u_v	0.040 mg/m ³	0.002 (mg/m ³) ²
Cross-sensitivity (interference)	u_i	0.320 mg/m ³	0.102 (mg/m ³) ²
Influence of sample gas flow	u_b	0.118 mg/m ³	0.014 (mg/m ³) ²
Uncertainty of reference material at 70% of certification range	u_{rm}	0.121 mg/m ³	0.015 (mg/m ³) ²
Variation of response factors (TOC)	u_{rf}	0.042 mg/m ³	0.002 (mg/m ³) ²

* The larger value is used :

"Repeatability standard deviation at set point" or

"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_c)	$u_c = \sqrt{\sum (u_{max,j})^2}$	0.51 mg/m ³
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	1.00 mg/m ³

Relative total expanded uncertainty

Requirement of 2010/75/EU

Requirement of EN 15267-3

U in % of the ELV 10 mg/m³	10.0
U in % of the ELV 10 mg/m³	30.0
U in % of the ELV 10 mg/m ³	22.5