Umwelt Bundesamt

TÜVRheinland®
Precisely Right.

CERTIFICATE

of Product Conformity (QAL1)

Certificate No.: 0000040208

Certified AMS:	MIR 9000H for CO, NO, NO_2, SO_2, NH_3, H_2O, CO_2 and O_2
Manufacturer:	Environnement S.A. 111, Boulevard Robespierre 78304 Poissy Cedex France
Test Institute:	TÜV Rheinland Energie und Umwelt GmbH

This is to certify that the AMS has been tested and found to comply with:

EN 15267-1: 2009, EN 15267-2: 2009, EN 15267-3: 2007 and EN 14181: 2004

Certification is awarded in respect of the conditions stated in this certificate (see also the following pages).

TÜVRheinland® CERTIFIED

Suitability Tested
EN 15267
QAL1 Certified
Regular
Surveillance

www.tuv.com
ID 0000040208

Publication in the German Federal Gazette (BAnz.) of 01 April 2014

This certificate will expire on:
31 March 2019

German Federal Environment Agency
Dessau, 29 April 2014

i. A. Dr. Marcel Langner

TÜV Rheinland Energie und Umwelt GmbH
Cologne, 28 April 2014

ppa. Dr. Peter Wilbring

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Accreditation according to EN ISO/IEC 17025 and certified according to ISO 9001:2008.	

Certificate:
0000040208 / 29 April 2014

Test report:	936/21217993/A of 04 September 2013
Initial certification:	01 April 2014
Expiry date:	31 March 2019
Publication:	BAnz AT 01 April 2014 B12, chapter I, No. 3.5

Approved application
The tested AMS is suitable for use at combustion plants according to Directive 2010/75/EU, chapter III, at waste incineration plants according to Directive 2010/75/EU, chapter IV and other plants requiring official approval. The tested ranges have been chosen with respect to the wide application range of the AMS.

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a four-month field test at a municipal waste incinerator.

The AMS is approved for an ambient temperature range of +5 °C to +40 °C.

Any potential user should ensure, in consultation with the manufacturer, that this AMS is suitable for the installation at which it will be installed.

Basis of the certification
This certification is based on:

- test report 936/21217993/A of 04 September 2013 of 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 01 April 2014 B12, chapter I, No. 3.5, Announcement by UBA from 27 February 2014)

AMS designation:
MIR 9000H for CO, NO, NO_2, SO_2, NH_3, H_2O, CO_2 and O_2

Manufacturer:
Environnement S.A., Poissy, France

Field of application:
For measurements at plants requiring official approval (Directive 2010/75/EU on industrial emissions, chapter III and IV)

Measuring ranges during the performance test:

Components	Certification range	Supplementary range	Units
CO	0 - 75	0 - 1000	mg/m³
NO	0 - 200	0 - 2000	mg/m³
NO_2	0 - 200	0 - 2000	mg/m³
SO_2	0 - 500	0 - 2000	mg/m³
NH_3	0 - 15	0 - 100	mg/m³
H_2O	0 - 30	0 - 40	Vol.-%
CO_2	0 - 30	0 - 25	Vol.-%
O_2	0 - 25	-	Vol.-%

Software version:
3.4.h

Restrictions:
1. The performance criterion as related to the expanded uncertainty according to EN 15267-3 is not fulfilled for the component CO.
2. The certification range of the measured component SO_2 is not suitable for the monitoring of daily averages at plants according to Directive 2010/75/EU chapter IV.
3. The measuring system must be operated in a lockable measuring room/container.

Notes:
1. The maintenance interval is four weeks.
2. The measuring system performs zero point alignment four times per day.

Test report:
TÜV Rheinland Energie und Umwelt GmbH, Cologne
Report No.: 936/21217993/A of 4 September 2013

Certified product
This certificate applies to automated measurement systems conforming to the following description:
The measuring system is a continuous emission monitoring system for measuring up to 8 components using infrared spectroscopy with gas filter correlation. Oxygen is measured with a zirconium dioxide sensor positioned in the measuring cell.

The gas sample is fed via the sample probe (HOFI-box) and the heated sample gas pipe from the internal pump into the optical multi-reflection chamber. The signal is sensitized due to the increased measuring path of 6 m. The optical measuring chamber is intersected by an infrared beam which is then measured in a detector. A light beam emitted by the IR source passes through the measuring chamber and is directed to an IR detector. Every gas molecule in the path of the light beam absorbs the light on a specific wavelength range that is characteristic for the particular gas. An interferent filter that surrounds a specific wavelength is positioned on the optical path to the measuring chamber.

The MIR 9000H AMS consists of:

- the MIR 9000H analyser
- a sample probe (HOFI-box) heated to 180 °C
- a sample gas pipe (interior diameter 4 mm, PTFE) heated to 180 °C, 10 m length during the performance test
- a distributor for zero gas and test gases

General notes
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 manufacture of 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 Energie und Umwelt 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 can be applied to the product or used in publicity material for the certified product.

This document as well as the certification mark remains property of TÜV Rheinland Energie und Umwelt GmbH. With revocation of the publication the certificate loses its validity. After the expiration of the certificate and on requests of the TÜV Rheinland Energie und Umwelt GmbH this document shall be returned and the certificate mark must not be employed anymore.

The relevant version of this certificate and its expiration is also accessible on the internet: **qal1.de**.

Certification of MIR 9000H for CO, NO, NO_2, SO_2, NH_3, H_2O, CO_2 and O_2 is based on the documents listed below and the regular, continuous monitoring of the Quality Management System of the manufacturer:

Initial certification according to EN 15267

Certificate No. 0000040208: 29 April 2014

Expiry date of the certificate: 31 March 2019

Test report: 936/21217993/A of 4 September 2013
TÜV Rheinland Energie und Umwelt GmbH, Cologne

Publication: BAnz AT 01 April 2014 B12, chapter I, No. 3.5
Announcement by UBA from 27 February 2014

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

Measuring system			
Manufacturer	Environnement S.A.		
AMS designation	MIR 9000H		
Serial number of units under test	2507 / 2508		
Measuring principle	IR- Gasfiltercorrelation		
Test report	936/21217993/A		
Test laboratory	TÜV Rheinland		
Date of report	2013-09-04		
Measured component	CO		
Certification range	0 - 75	mg/m³	

Evaluation of the cross-sensitivity (CS)
(system with largest CS)

Sum of positive CS at zero point	0.68	mg/m³
Sum of negative CS at zero point	0.00	mg/m³
Sum of postive CS at span point	1.40	mg/m³
Sum of negative CS at span point	-0.70	mg/m³
Maximum sum of cross-sensitivities	1.40	mg/m³
Uncertainty of cross-sensitivity	0.805	mg/m³

Calculation of the combined standard uncertainty

Tested parameter				u^2	
Standard deviation from paired measurements under field conditions *	u_D	0.834	mg/m³	0.696	(mg/m³)²
Lack of fit	u_{lof}	0.229	mg/m³	0.052	(mg/m³)²
Zero drift from field test	$u_{d,z}$	0.589	mg/m³	0.347	(mg/m³)²
Span drift from field test	$u_{d,s}$	1.299	mg/m³	1.687	(mg/m³)²
Influence of ambient temperature at span	u_t	0.458	mg/m³	0.210	(mg/m³)²
Influence of supply voltage	u_v	0.157	mg/m³	0.025	(mg/m³)²
Cross-sensitivity (interference)	u_i	0.805	mg/m³	0.649	(mg/m³)²
Influence of sample gas flow	u_p	-0.334	mg/m³	0.112	(mg/m³)²
Uncertainty of reference material at 70% of certification range	u_{rm}	0.606	mg/m³	0.368	(mg/m³)²

* The larger value is used :
"Repeatability standard deviation at span" or
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_c)	$u_c = \sqrt{\sum (u_{max,\ j})^2}$	2.04	mg/m³
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	3.99	mg/m³

Relative total expanded uncertainty	**U in % of the ELV 50 mg/m³**	**8.0**
Requirement of 2010/75/EU	**U in % of the ELV 50 mg/m³**	**10.0**
Requirement of EN 15267-3	U in % of the ELV 50 mg/m³	7.5

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

Measuring system			
Manufacturer	Environnement S.A.		
AMS designation	MIR 9000H		
Serial number of units under test	2507 / 2508		
Measuring principle	IR- Gasfiltercorrelation		
Test report	936/21217993/A		
Test laboratory	TÜV Rheinland		
Date of report	2013-09-04		
Measured component	NO		
Certification range	0 - 200	mg/m³	

Evaluation of the cross-sensitivity (CS)
(system with largest CS)

Sum of positive CS at zero point	7.08	mg/m³
Sum of negative CS at zero point	-3.76	mg/m³
Sum of postive CS at span point	5.60	mg/m³
Sum of negative CS at span point	-3.30	mg/m³
Maximum sum of cross-sensitivities	7.08	mg/m³
Uncertainty of cross-sensitivity	4.088	mg/m³

Calculation of the combined standard uncertainty

Tested parameter				u^2	
Standard deviation from paired measurements under field conditions *	u_D	2.022	mg/m³	4.088	(mg/m³)²
Lack of fit	u_{lof}	1.155	mg/m³	1.334	(mg/m³)²
Zero drift from field test	$u_{d,z}$	1.253	mg/m³	1.570	(mg/m³)²
Span drift from field test	$u_{d,s}$	3.464	mg/m³	11.999	(mg/m³)²
Influence of ambient temperature at span	u_t	1.041	mg/m³	1.084	(mg/m³)²
Influence of supply voltage	u_v	1.267	mg/m³	1.605	(mg/m³)²
Cross-sensitivity (interference)	u_i	4.088	mg/m³	16.709	(mg/m³)²
Influence of sample gas flow	u_p	-0.265	mg/m³	0.070	(mg/m³)²
Uncertainty of reference material at 70% of certification range	u_{rm}	1.617	mg/m³	2.613	(mg/m³)²

* The larger value is used :
"Repeatability standard deviation at span" or
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_C)	$u_c = \sqrt{\sum (u_{max,\ j})^2}$	6.41	mg/m³
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	12.56	mg/m³

Relative total expanded uncertainty	**U in % of the ELV 100 mg/m³**	**12.6**
Requirement of 2010/75/EU	**U in % of the ELV 100 mg/m³**	**20.0**
Requirement of EN 15267-3	U in % of the ELV 100 mg/m³	15.0

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

Measuring system			
Manufacturer	Environnement S.A.		
AMS designation	MIR 9000H		
Serial number of units under test	2507 / 2508		
Measuring principle	IR- Gasfiltercorrelation		
Test report	936/21217993/A		
Test laboratory	TÜV Rheinland		
Date of report	2013-09-04		
Measured component	NO_2		
Certification range	0 - 200	mg/m³	
Evaluation of the cross-sensitivity (CS)			
(system with largest CS)			
Sum of positive CS at zero point	7.28	mg/m³	
Sum of negative CS at zero point	0.00	mg/m³	
Sum of postive CS at span point	5.00	mg/m³	
Sum of negative CS at span point	-1.00	mg/m³	
Maximum sum of cross-sensitivities	7.28	mg/m³	
Uncertainty of cross-sensitivity	4.203	mg/m³	

Calculation of the combined standard uncertainty

Tested parameter				u^2	
Repeatability standard deviation at set point *	u_r	1.207	mg/m³	1.457	(mg/m³)²
Lack of fit	u_{lof}	0.808	mg/m³	0.653	(mg/m³)²
Zero drift from field test	$u_{d,z}$	1.542	mg/m³	2.378	(mg/m³)²
Span drift from field test	$u_{d,s}$	3.464	mg/m³	11.999	(mg/m³)²
Influence of ambient temperature at span	u_t	1.300	mg/m³	1.690	(mg/m³)²
Influence of supply voltage	u_v	1.349	mg/m³	1.820	(mg/m³)²
Cross-sensitivity (interference)	u_i	4.203	mg/m³	17.666	(mg/m³)²
Influence of sample gas flow	u_p	0.433	mg/m³	0.187	(mg/m³)²
Uncertainty of reference material at 70% of certification range	u_{rm}	1.617	mg/m³	2.613	(mg/m³)²

* The larger value is used :
"Repeatability standard deviation at span" or
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_c)	$u_c = \sqrt{\sum (u_{max,\ j})^2}$	6.36	mg/m³
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	12.47	mg/m³

Relative total expanded uncertainty	**U in % of the ELV 200 mg/m³**	**6.2**
Requirement of 2010/75/EU	**U in % of the ELV 200 mg/m³**	**20.0**
Requirement of EN 15267-3	U in % of the ELV 200 mg/m³	15.0

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

Measuring system					
Manufacturer			Environnement S.A.		
AMS designation			MIR 9000H		
Serial number of units under test			2507 / 2508		
Measuring principle			IR- Gasfiltercorrelation		
Test report			936/21217993/A		
Test laboratory			TÜV Rheinland		
Date of report			2013-09-04		
Measured component			SO_2		
Certification range			0 - 500 mg/m³		
Evaluation of the cross-sensitivity (CS)					
(system with largest CS)					
Sum of positive CS at zero point			0.00 mg/m³		
Sum of negative CS at zero point			-5.45 mg/m³		
Sum of postive CS at span point			0.00 mg/m³		
Sum of negative CS at span point			0.00 mg/m³		
Maximum sum of cross-sensitivities			-5.45 mg/m³		
Uncertainty of cross-sensitivity			-3.147 mg/m³		
Calculation of the combined standard uncertainty					
Tested parameter				u^2	
Repeatability standard deviation at set point *	u_r	5.963	mg/m³	35.557	(mg/m³)²
Lack of fit	u_{lof}	-2.887	mg/m³	8.335	(mg/m³)²
Zero drift from field test	$u_{d,z}$	4.030	mg/m³	16.241	(mg/m³)²
Span drift from field test	$u_{d,s}$	8.660	mg/m³	74.996	(mg/m³)²
Influence of ambient temperature at span	u_t	3.579	mg/m³	12.809	(mg/m³)²
Influence of supply voltage	u_v	2.272	mg/m³	5.162	(mg/m³)²
Cross-sensitivity (interference)	u_i	-3.147	mg/m³	9.901	(mg/m³)²
Influence of sample gas flow	u_p	-0.902	mg/m³	0.814	(mg/m³)²
Uncertainty of reference material at 70% of certification range	u_{rm}	4.041	mg/m³	16.333	(mg/m³)²

* The larger value is used :
"Repeatability standard deviation at span" or
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_c)	$u_c = \sqrt{\sum (u_{max,\ j})^2}$	13.42	mg/m³
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	26.31	mg/m³

Relative total expanded uncertainty	**U in % of the ELV 200 mg/m³**	**13.2**
Requirement of 2010/75/EU	**U in % of the ELV 200 mg/m³**	**20.0**
Requirement of EN 15267-3	U in % of the ELV 200 mg/m³	15.0

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

Measuring system			
Manufacturer	Environnement S.A.		
AMS designation	MIR 9000H		
Serial number of units under test	2507 / 2508		
Measuring principle	IR- Gasfiltercorrelation		
Test report	936/21217993/A		
Test laboratory	TÜV Rheinland		
Date of report	2013-09-04		
Measured component	NH_3		
Certification range	0 - 15	mg/m³	

Evaluation of the cross-sensitivity (CS)
(system with largest CS)

Sum of positive CS at zero point	0.39	mg/m³
Sum of negative CS at zero point	-0.10	mg/m³
Sum of postive CS at span point	0.20	mg/m³
Sum of negative CS at span point	-0.10	mg/m³
Maximum sum of cross-sensitivities	0.39	mg/m³
Uncertainty of cross-sensitivity	0.226	mg/m³

Calculation of the combined standard uncertainty

Tested parameter				u^2	
Standard deviation from paired measurements under field conditions *	u_D	0.070	mg/m³	0.005	(mg/m³)²
Lack of fit	u_{lof}	0.139	mg/m³	0.019	(mg/m³)²
Zero drift from field test	$u_{d,z}$	0.069	mg/m³	0.005	(mg/m³)²
Span drift from field test	$u_{d,s}$	0.144	mg/m³	0.021	(mg/m³)²
Influence of ambient temperature at span	u_t	0.058	mg/m³	0.003	(mg/m³)²
Influence of supply voltage	u_v	0.065	mg/m³	0.004	(mg/m³)²
Cross-sensitivity (interference)	u_i	0.226	mg/m³	0.051	(mg/m³)²
Influence of sample gas flow	u_p	0.029	mg/m³	0.001	(mg/m³)²
Uncertainty of reference material at 70% of certification range	u_{rm}	0.121	mg/m³	0.015	(mg/m³)²

* The larger value is used :
"Repeatability standard deviation at span" or
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_c)	$u_c = \sqrt{\sum (u_{max,\ j})^2}$	0.35	mg/m³
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	0.69	mg/m³

Relative total expanded uncertainty	**U in % of the ELV 10 mg/m³**	**6.9**
Requirement of 2010/75/EU	**U in % of the ELV 10 mg/m³**	**40.0****
Requirement of EN 15267-3	U in % of the ELV 10 mg/m³	30.0

**For this component no requirements in the EC-directives 2001/80/EG und 2000/76/EG are given.
The chosen value is recommended by the certification body.

Certificate:
0000040208 / 29 April 2014

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

Measuring system			
Manufacturer	Environnement S.A.		
AMS designation	MIR 9000H		
Serial number of units under test	2507 / 2508		
Measuring principle	IR- Gasfiltercorrelation		
Test report	936/21217993/A		
Test laboratory	TÜV Rheinland		
Date of report	2013-09-04		
Measured component	H_2O		
Certification range	0 - 30	Vol.-%	

Evaluation of the cross-sensitivity (CS)
(system with largest CS)

Sum of positive CS at zero point	0.00	Vol.-%
Sum of negative CS at zero point	-0.21	Vol.-%
Sum of postive CS at span point	0.00	Vol.-%
Sum of negative CS at span point	0.00	Vol.-%
Maximum sum of cross-sensitivities	-0.21	Vol.-%
Uncertainty of cross-sensitivity	-0.121	Vol.-%

Calculation of the combined standard uncertainty

Tested parameter				u^2	
Standard deviation from paired measurements under field conditions *	u_D	0.174	Vol.-%	0.030	(Vol.-%)²
Lack of fit	u_{lof}	-0.116	Vol.-%	0.013	(Vol.-%)²
Zero drift from field test	$u_{d,z}$	0.173	Vol.-%	0.030	(Vol.-%)²
Span drift from field test	$u_{d,s}$	0.173	Vol.-%	0.030	(Vol.-%)²
Influence of ambient temperature at span	u_t	0.208	Vol.-%	0.043	(Vol.-%)²
Influence of supply voltage	u_v	0.111	Vol.-%	0.012	(Vol.-%)²
Cross-sensitivity (interference)	u_i	-0.121	Vol.-%	0.015	(Vol.-%)²
Influence of sample gas flow	u_p	0.022	Vol.-%	0.000	(Vol.-%)²
Uncertainty of reference material at 70% of certification range	u_{rm}	0.242	Vol.-%	0.059	(Vol.-%)²

* The larger value is used :
"Repeatability standard deviation at span" or
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_C)	$u_c = \sqrt{\sum (u_{max,\ j})^2}$	0.48	Vol.-%
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	0.95	Vol.-%

Relative total expanded uncertainty	**U in % of the range 30 Vol.-%**	**3.2**
Requirement of 2010/75/EU	**U in % of the range 30 Vol.-%**	**10.0****
Requirement of EN 15267-3	U in % of the range 30 Vol.-%	7.5

**For this component no requirements in the EC-directives 2001/80/EG und 2000/76/EG are given.
The chosen value is recommended by the certification body.

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

Measuring system			
Manufacturer	Environnement S.A.		
AMS designation	MIR 9000H		
Serial number of units under test	2507 / 2508		
Measuring principle	IR- Gasfiltercorrelation		
Test report	936/21217993/A		
Test laboratory	TÜV Rheinland		
Date of report	2013-09-04		
Measured component	CO_2		
Certification range	0 - 30	Vol.-%	

Evaluation of the cross-sensitivity (CS)
(system with largest CS)

Sum of positive CS at zero point	0.00	Vol.-%
Sum of negative CS at zero point	0.00	Vol.-%
Sum of postive CS at span point	0.60	Vol.-%
Sum of negative CS at span point	-0.20	Vol.-%
Maximum sum of cross-sensitivities	0.60	Vol.-%
Uncertainty of cross-sensitivity	0.348	Vol.-%

Calculation of the combined standard uncertainty

Tested parameter				u^2	
Standard deviation from paired measurements under field conditions *	u_D	0.435	Vol.-%	0.189	(Vol.-%)²
Lack of fit	u_{lof}	-0.144	Vol.-%	0.021	(Vol.-%)²
Zero drift from field test	$u_{d,z}$	0.387	Vol.-%	0.150	(Vol.-%)²
Span drift from field test	$u_{d,s}$	0.520	Vol.-%	0.270	(Vol.-%)²
Influence of ambient temperature at span	u_t	0.153	Vol.-%	0.023	(Vol.-%)²
Influence of supply voltage	u_v	0.012	Vol.-%	0.000	(Vol.-%)²
Cross-sensitivity (interference)	u_i	0.348	Vol.-%	0.121	(Vol.-%)²
Influence of sample gas flow	u_p	0.047	Vol.-%	0.002	(Vol.-%)²
Uncertainty of reference material at 70% of certification range	u_{rm}	0.242	Vol.-%	0.059	(Vol.-%)²

* The larger value is used :
"Repeatability standard deviation at span" or
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_c)	$u_c = \sqrt{\sum (u_{max,\ j})^2}$	0.91	Vol.-%
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	1.79	Vol.-%

Relative total expanded uncertainty	**U in % of the range 30 Vol.-%**	**6.0**
Requirement of 2010/75/EU	**U in % of the range 30 Vol.-%**	**10.0****
Requirement of EN 15267-3	U in % of the range 30 Vol.-%	7.5

**For this component no requirements in the EC-directives 2001/80/EG und 2000/76/EG are given.
The chosen value is recommended by the certification body.

Certificate:
0000040208 / 29 April 2014

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

Measuring system					
Manufacturer		Environnement S.A.			
AMS designation		MIR 9000H			
Serial number of units under test		2507 / 2508			
Measuring principle		Zirkoniumdioxide			
Test report		936/21217993/A			
Test laboratory		TÜV Rheinland			
Date of report		2013-09-04			
Measured component		O_2			
Certification range		0 - 25	Vol.-%		
Evaluation of the cross-sensitivity (CS)					
(system with largest CS)					
Sum of positive CS at zero point		0.00	Vol.-%		
Sum of negative CS at zero point		0.00	Vol.-%		
Sum of postive CS at span point		0.00	Vol.-%		
Sum of negative CS at span point		0.00	Vol.-%		
Maximum sum of cross-sensitivities		0.00	Vol.-%		
Uncertainty of cross-sensitivity		0.000	Vol.-%		

Calculation of the combined standard uncertainty

Tested parameter				u^2	
Standard deviation from paired measurements under field conditions *	u_D	0.057	Vol.-%	0.003	(Vol.-%)²
Lack of fit	u_{lof}	0.014	Vol.-%	0.000	(Vol.-%)²
Zero drift from field test	$u_{d,z}$	-0.058	Vol.-%	0.003	(Vol.-%)²
Span drift from field test	$u_{d,s}$	0.058	Vol.-%	0.003	(Vol.-%)²
Influence of ambient temperature at span	u_t	0.040	Vol.-%	0.002	(Vol.-%)²
Influence of supply voltage	u_v	0.031	Vol.-%	0.001	(Vol.-%)²
Cross-sensitivity (interference)	u_i	0.000	Vol.-%	0.000	(Vol.-%)²
Influence of sample gas flow	u_p	-0.012	Vol.-%	0.000	(Vol.-%)²
Uncertainty of reference material at 70% of certification range	u_{rm}	0.202	Vol.-%	0.041	(Vol.-%)²

* The larger value is used :
"Repeatability standard deviation at span" or
"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u_C)	$u_c = \sqrt{\sum (u_{max,\ j})^2}$	0.23	Vol.-%
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	0.45	Vol.-%

Relative total expanded uncertainty	**U in % of the range 25 Vol.-%**	**1.8**
Requirement of 2010/75/EU	**U in % of the range 25 Vol.-%**	**10.0****
Requirement of EN 15267-3	U in % of the range 25 Vol.-%	7.5

**For this component no requirements in the EC-directives 2001/80/EG und 2000/76/EG are given.
The chosen value is recommended by the certification body.

TÜVRheinland®
Precisely Right.

CONFIRMATION

Notification on changes according to EN 15267 regarding
certificate 0000040208 dated 29 April 2014

Measuring system: MIR9000H

Manufacturer: Environnement S.A.
111 Boulevard Robespierre
78304 Poissy Cedex
France

German Federal Environmental Agency (UBA)

Announcement about the uniform practice in monitoring emissions and ambient air.
22 July 2015
Federal Gazette: BAnz AT 26 August 2015 B4

V **Notifications to the uniform practice for the continuous monitoring of emission and ambient air:**

23 Notification as regards Federal Environment Agency (UBA) notice of 27 February 2014 (Federal Gazette (BAnz.) AT 1 April 2014 B12, chapter I number 3.5)

The current software version for the MIR9000H measuring system for CO, NO, NO_2, SO_2, NH_3, H_2O, CO_2 and O_2, manufactured by Environnement S.A., is:

v7.1.d (Calculation process)
v3.4.r (Display process)

Statement of TÜV Rheinland Energie und Umwelt GmbH of 14 March 2015

TÜV Rheinland Energie und Umwelt GmbH
Cologne, 04 November 2015

i. A. Dipl.-Ing. Ruth Steinhagen-Pinnow

i. A. Dipl. Ing. Carsten Röllig

www.umwelt-tuv.de teu@umwelt-tuv.de Tel. +49 221 806-5200	TÜV Rheinland Energie und Umwelt GmbH Am Grauen Stein 51105 Cologne

Test institute accredited to EN ISO/IEC 17025:2005 by DAkkS (German Accreditation Body). This accreditation is limited to the accreditation scope defined in the enclosure to the certificate D-PL-11120-02-00.

TÜVRheinland®
Precisely Right.

CONFIRMATION

Notification: 0000040208_00_02
on changes according to EN 15267 regarding certificate 0000040208_00 dated 29 April 2014

AMS designation:	MIR 9000H for CO, NO, NO_2, SO_2, NH_3, H_2O, CO_2 and O_2
Manufacturer:	Environnement S.A. 111, Boulevard Robespierre 78304 Poissy Cedex France

German Federal Environment Agency (UBA)

Announcement regarding the uniform practice in monitoring emissions and ambient air dated 21 February 2018 Publication: BAnz AT 26.03.2018 B8

V. Notifications as regards the uniform practice for the continuous monitoring of emission and ambient air:

27 Notification as regards Federal Environment Agency notices of 27 February 2014 (BAnz AT 01.04.2014 B12, chapter I number 3.5) and of 22 July 2015 (BAnz AT 26.08.2015 B4, chapter V 23rd notification)

The step engine Sanyo 103H548-0444 used so far for the MIR 9000H measuring system for CO, NO, NO_2, SO_2, NH_3, O_2, CO_2 and H_2O manufactured by Environnement S. A. has been replaced by the successor model Sanyo 103HS5208-0440.

Statement issued by TÜV Rheinland Energy GmbH dated 18 August 2017

TÜV Rheinland Energy GmbH
Cologne, 4 June 2018

i. V. Dipl.-Ing. Guido Baum

i. A. Dipl.-Ing. Carsten Röllig

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