CERTIFICATE

of Product Conformity (QAL1)

Certificate No.: 0000069259

AMS designation:	FP330 for velocity
Manufacturer:	Siemens AG Östliche Rheinbrückenstr. 50 76187 Karlsruhe 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), 16911 (2013) and EN 14181 (2004).

Certification is awarded in respect of the conditions stated in this certificate (this certificate contains 6 pages).

TÜVRheinland® CERTIFIED
Suitability Tested
EN 15267
QAL1 Certified
Regular Surveillance
www.tuv.com
ID 0000069259

Publication in the German Federal Gazette (BAnz) of 07 May 2020

German Federal Environment Agency
Dessau, 17 June 2020

Dr. Marcel Langner
Head of Section II 4.1

This certificate will expire on:
06 May 2025

TÜV Rheinland Energy GmbH
Cologne, 16 June 2020

ppa. Dr. Peter Wilbring

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51105 Köln

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:	936/21246254/A dated 23 September 2019
Initial certification:	07 May 2020
Expiry date:	06 May 2025
Publication:	BAnz AT 07.05.2020 B8, chapter I number 2.1

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, 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 six-months field test at a municipal waste incineration plant.

The AMS is approved for an ambient temperature range of -20 °C to +50 °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 velocities 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. 936/21246254/A dated 23 September 2019 issued by TÜV Rheinland Energy 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 07.05.2020 B8, chapter I number 2.1, UBA announcement dated 31 March 2020:

AMS designation:

FP330 for velocity

Manufacturer:

SIEMENS AG, Karlsruhe

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
Velocity	2–20	2–40	2–60	m/s

Software version:
1.0.0

Restrictions:
None

Notes:

1. After any malfunction of the filter resulting in high dust loads, the probe must be checked for contamination and cleaned if necessary.
2. The maintenance interval is three months.
3. There are 4 different probes that differ in profile size. SDF 22, 32 and 50 have a fixed width and variable length. The fourth type (SDF-50+) changes its width with its length.

Test Report:
TÜV Rheinland Energy GmbH, Cologne
Report no.: 936/21246254/A dated 23 September 2019

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

Flow velocity measurement relies on determining the differential pressure in the sample gas flow by means of a dynamic pressure probe (Type SITRANS FPD330) and a pressure sensor (Model SITRANS P320). The measuring system uses an in-situ method. Measured values detected by the pressure sensor are transmitted to the external evaluation electronics unit (AccuMind QAL) as 4–20 mA signals.

The evaluation unit takes into account the differential pressure signal and waste gas boundary conditions as well as the cross-section of the duct. This is also were parameterisation takes place. The volume flow or flow velocity signal is provided via freely assignable 4–20 mA outputs, whose measuring range can be changed. The port for analogue outputs is located at the back of the evaluation electronics unit.

The probe tube is approved in four versions: 22, 32, 50 and 50+. The only difference lies in the probe cross-section. The selection of the probe type or the probe cross-section depends on the probe length.

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 **qal1.de**.

Document history

Certification of the FP330 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. 0000069259: 17 June 2020
Expiry date of the certificate: 06 May 2025
Test report: 936/21246254/A dated 23 September 2019
TÜV Rheinland Energy GmbH, Cologne
Publication: BAnz AT 07.05.2020 B8, chapter I number 2.1
UBA announcement dated 31 March 2020

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

Measuring system					
Manufacturer			Siemens AG		
AMS designation			FP330		
Serial number of units under test			12048607 / 12048608		
Measuring principle			differential pressure measurement		
Test report			936/21246254/A		
Test laboratory			TÜV Rheinland		
Date of report			2019-09-23		
Measured component			Velocity		
Certification range			2 - 20 m/s		

Calculation of the combined standard uncertainty

Tested parameter				u^2	
Standard deviation from paired measurements under field conditions *	u_D	0.280	m/s	0.078	$(m/s)^2$
Lack of fit	u_{lof}	0.081	m/s	0.007	$(m/s)^2$
Zero drift from field test	$u_{d,z}$	0.046	m/s	0.002	$(m/s)^2$
Span drift from field test	$u_{d,s}$	0.127	m/s	0.016	$(m/s)^2$
Influence of ambient temperature at span	u_t	0.115	m/s	0.013	$(m/s)^2$
Influence of supply voltage	u_v	0.025	m/s	0.001	$(m/s)^2$
Uncertainty of reference material at 70% of certification range	u_{rm}	0.162	m/s	0.026	$(m/s)^2$

* 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)	$u_c = \sqrt{\sum (u_{max,j})^2}$	0.38	m/s
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	0.74	m/s

Relative total expanded uncertainty	**U in % of the range 20 m/s**	**3.7**
Requirement of 2010/75/EU	**U in % of the range 20 m/s**	**7.8 ****
Requirement of EN 15267-3	U in % of the range 20 m/s	5.9

** The EU-directive 2010/75/EC on industrial emissions does not define requirements for this component.
A value of 7.8 % was used instead.