Umwelt Bundesamt

TÜVRheinland®
Precisely Right.

CERTIFICATE

of Product Conformity (QAL1)

Certificate No: 0000038500_03

Certified AMS:	AccuFlo QAL for waste gas velocity
Manufacturer:	S.K.I. GmbH Hanns-Martin-Schleyer-Str. 22 41199 Mönchengladbach Germany
Test Institute:	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), EN ISO 16911-2 (2013) and EN 14181 (2014).

Certification is awarded in respect of the conditions stated in this certificate (this certificate contains 7 pages).
The present certificate replaces certificate 0000038500_02 dated 05 March 2018.

TÜVRheinland® CERTIFIED

Suitability Tested
EN 15267
QAL1 Certified
Regular Surveillance

www.tuv.com
ID 0000038500

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

This certificate will expire on:
04 March 2028

German Environment Agency
Dessau, 02 March 2023

TÜV Rheinland Energy GmbH
Cologne, 01 March 2023

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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 the certificate D-PL-11120-02-00.

Test report:	936/21219344/B dated 01 October 2013
Initial certification:	05 March 2013
Expiry date:	04 March 2028
Certificate:	Renewal (of previous certificate 0000038500_02 of 05 March 2018 valid until 04 March 2023)
Publication:	BAnz AT 01.04.2014 B12, chapter II No. 2.1

Approved application
The tested AMS is suitable for use at plants according to Directive 2010/75/EC, chapter III (13th BImSchV:2013), chapter IV (17th BImSchV:2013), Directive 2015/2193/EC (44th BImSchV:2021), 30th BImSchV:2009, TA-Luft:2002 and 27th BImSchV:2013. 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 6 month field test at a waste incineration.

The AMS is approved for an ambient temperature range of -20° 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 flue gas velocity relevant to the application.

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

Note:
The legal regulations mentioned correspond to the current state of legislation during certification. Each user should, if necessary, in consultation with the competent authority, ensure that this AMS meets the legal requirements for the intended use. In addition, it cannot be ruled out that legal regulations governing the use of a measuring device for emission monitoring may change during the lifetime of the certificate.

Basis of the certification
This certification is based on:

- Test report 936/21219344/B dated 01 October 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 01.04.2014 B12, chapter II No. 2.1, Announcement by UBA dated 27 February 2014:

AMS designation:
AccuFlo QAL for waste gas velocity

Manufacturer:
S.K.I. GmbH, Mönchengladbach

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
Flow velocity	2–20	2–40	2–60	m/s

Software version:
LSE-QAL-2.11

Restriction:
The lower limit of measuring the flow velocity is at 2 m/s.

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.
4. The designation of the measuring system was changed from SDF 22/32/50 to AccuFlo.
5. Supplementary testing (extension of the maintenance interval, new probe type) as regards Federal Environment Agency (UBA) notice of 12 February 2013 (BAnz AT 05.03.2013 B10, chapter II number 2.3).

Test Report:
TÜV Rheinland Energie und Umwelt GmbH, Cologne
Report no.: 936/21219344/B dated 1 October 2013

Publication in the German Federal Gazette: BAnz AT 07.05.2020 B8, chap. III notification 6, Announcement by UBA dated 31 March 2020:

6 Notification as regards Federal Environment Agency (UBA) notices of 12 February 2013 (BAnz AT 15.03.2017 B10, chapter II number 2.3) and of 27 February 2014 (BAnz AT 01.04.2014 B12, chapter II number 2.1)

The AccuFlo QAL measuring system for velocity manufactured by S.K.I. GmbH may be used either with the AccuMind evaluation unit (software version 1.0.0) or with the SITRANS P320 or AccuP320 differential pressure transmitter.

Statement issued by TÜV Rheinland Energy GmbH dated 19 February 2020

Publication in the German Federal Gazette: BAnz AT 05.08.2021 B5, chap. IV notification 49, Announcement by UBA dated 29 June 2021:

49 Notification as regards Federal Environment Agency (UBA) notices of 12 February 2013 (BAnz AT 05.03.2013 B10, chapter II number 2.3) and of 31 March 2020 (BAnz AT 07.05.2020 B8, chapter III notification 6)

The latest software version of the AccuFlo QAL measuring system for waste gas velocity manufactured by S.K.I. GmbH is:
QAL-1.0.4.
The software versions QAL-1.0.0, QAL-1.0.1, QAL-1.0.2 and QAL-1.0.3 are included here.
In addition to the previously used housing for panel mounting, the evaluation unit can also be installed in wall-mounted housing in the future.

Statement issued by TÜV Rheinland Energy GmbH dated 18 February 2021

Certified product
This certificate 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 SDF) and a pressure sensor (Model:SITRANS P). The measuring system uses an in-situ method. Measured values detected by the pressure sensor are transmitted to the external evaluation electronics unit (µFLOW 100LSE).

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: SDF-22, SDF-32, SDF-50 and SDF-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 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 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 certification mark may be applied to the product or used in advertising materials for the certified product.

This document as well as the certification mark remains property of TÜV Rheinland Energy GmbH. With revocation of the publication the certificate loses its validity. After the expiration of the certificate and on requests of the TÜV Rheinland Energy 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**.

History of documents
Certification of AccuFlo QAL 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

Initial certification according to EN 15267
Certificate No. 0000038500_00: 22 March 2013
Expiry date of the certificate: 04 March 2018
Test report 936/21219344/A dated 8 October 2012
TÜV Rheinland Energie und Umwelt GmbH
Publication BAnz AT 05.03.2013 B10, chapter II number 2.3
UBA announcement dated 12 February 2013

Supplementary testing according to EN 15267
Certificate No. 0000038500_01: 29 April 2014
Expiry date of the certificate: 04 March 2018
Test report 936/21219344/B dated 1 October 2013
TÜV Rheinland Energie und Umwelt GmbH
Publication BAnz AT 01.04.2014 B12, chapter II number 2.1
UBA announcement dated 27 February 2014

Renewal of certificate
Certificate No. 0000038500_02: 05 March 2018
Expiry date of the certificate: 04 March 2023

Notifications
Statement issued by TÜV Rheinland Energy GmbH dated 19 February 2020
Publication BAnz AT 07.05.2020 B8, chapter III notification 6
UBA announcement dated 31 March 2020
(Hardware changes)

Statement issued by TÜV Rheinland Energy GmbH dated 18 February 2021
Publication BAnz AT 05.08.2021 B5, chapter IV notification 49
UBA announcement dated 29 June 2021
(Soft- and hardware change)

Renewal of certificate
Certificate No. 0000038500_03: 02 March 2023
Expiry date of the certificate: 04 March 2028

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

Measuring system					
Manufacturer			S.K.I. GmbH		
AMS designation			AccuFlo QAL		
Serial number of units under test			12048607 / 12048608		
Measuring principle			differential pressure measurement		
Test report			936/21219344/B		
Test laboratory			TÜV Rheinland		
Date of report			2013-10-01		
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 span" 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**	**10,0 ****
Requirement of EN 15267-3	U in % of the range 20 m/s	7,5

** EU Directive 2010/75/EU on industrial emissions does not define requirements for this component.
A value of 10,0% was used for this.