Umwelt Bundesamt

TÜVRheinland®
Precisely Right.

CERTIFICATE

of Product Conformity (QAL1)

Certificate No.: 0000038500_01

Certified AMS:	AccuFlo QAL for velocity
Manufacturer:	S.K.I. GmbH Hanns-Martin-Schleyer-Str. 22 41199 Mönchengladbach Germany
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, EN ISO 16911-2: 2013 and EN 14181: 2004

Certification is awarded in respect of the conditions stated in this certificate (see also the following pages).
The present certificate replaces Certificate No. 000038500 of 22 March 2013

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

German Federal Environment Agency
Dessau, 29 April 2014

i. A. Dr. Marcel Langner

This certificate will expire on:
04 March 2018

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.	

Test report:	936/21219344/B of 01 October 2013
Initial certification:	05 March 2013
Expiry date:	04 March 2018
Publication:	BAnz AT 01 April 2014 B12, chapter II, No. 2.1

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 six-month field test at a waste incineration plant.

The AMS is approved for an ambient temperature range of -20 °C to +50 °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 936/21219344/B of 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 April 2014 B12, chapter II, No. 2.1, Announcement by UBA from 27 February 2014)

AMS designation:
AccuFlo QAL for velocity

Manufacturer:
S.K.I. GmbH, Mönchengladbach

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:

Component	Certification range	Supplementary ranges		Unit
Velocity	2 - 20	2 - 40	2 - 60	m/s

Software version:
LSE-QAL-2.11

Restriction:
The lower limit of velocity measurement is 2 m/s.

Notes:

1. Following a filter fault with high dust content, the probe must be inspected for contamination and where necessary cleaned.
2. The maintenance interval is three month.
3. There are 4 different probes that differ in profile size. SDF 22, 32 and 50 have a fixed width and variable length. The 4th type (SDF-50+) changes width upon length adjustment.
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) to the announcement of the Federal Environment Agency (UBA) of 12 February 2013, Federal Gazette (BAnz) AT of 05 March 2013 B10, chapter II number 2.3).

Test report:
TÜV Rheinland Energie und Umwelt GmbH, Cologne
Report No.: 936/21219344/B of 1 October 2013

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

The measurement of the volumetric flow rate is based on the principle of differential pressure in flowing exhaust gas. This is carried out as an in-situ method of measurement by means of a dynamic pressure probe (Type SDF) and a pressure sensor (Model: SITRANS P).

The pressure transmitter is connected to the evaluation electronics (µFLOW 100LSE). There, the calculation of the differential pressure signals by means of exhaust gas boundary conditions (temperature, pressure and density) is carried out. Velocity signals are issued through two 4 - 20 mA analogue outputs with variable measuring range.

The manufacturer, S.K.I. GmbH, produces the probe tube in four different models (SDF-22, SDF-32, SDF-50 and SDF-50+). These differ mainly in their thickness, which defines the maximum length of the probe. Slight differences are found in their geometrical structure.

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 AccuFlo QAL for velocity 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. 0000038500: 22 March 2013

Expiry date of the certificate: 04 March 2018

Test report: 936/21219344/A of 08 October 2012
TÜV Rheinland Energie und Umwelt GmbH, Cologne

Publication: BAnz AT 05 March 2013 B10, chapter II, No. 2.3
Announcement by UBA from 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 of 1 October 2013
TÜV Rheinland Energie und Umwelt GmbH, Cologne

Publication: BAnz AT 01 April 2014 B12, chapter II, No. 2.1
Announcement by UBA from 27 February 2014

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/A	936/21219344/B	
Test laboratory	TÜV Rheinland		
Date of report	2012-10-08	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

** For this component no requirements in the EC-directives 2010/75/EU on industrial emissions are given.
The chosen value is recommended by the certification body.