

CERTIFICATE

of Product Conformity (QAL1)

Certificate No.: 000038500_01

AMS designation: AccuFlo QAL for velocity

Manufacturer: S.K.I. GmbH
Hanns-Martin-Schleyer-Str. 22
41199 Mönchengladbach
Germany

Test Laboratory: TÜV Rheinland Energy GmbH

This is to certify that the AMS has been tested and certified
according to the standards

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
(this certificate contains 6 pages).




Suitability Tested
EN 15267
QAL1 Certified
Regular
Surveillance

www.tuv.com
ID 000038500

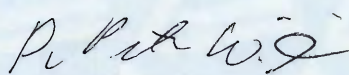
Publication in the German Federal Gazette
(BAnz) of 01 April 2014

German Federal Environment Agency
Dessau, 05 March 2018


Dr. Marcel Langner
Head of Section II 4.1

This certificate will expire on:
04 March 2023

TÜV Rheinland Energy GmbH
Cologne, 04 March 2018


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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.

Test Report:	936/21219344/B dated 01 October 2013
Initial certification:	05 March 2013
Expiry date:	04 March 2023
Certificate:	Renewal (of previous certificate 0000038500_01 dated 29 April 2014 valid until 04 March 2018)
Publication:	BAnz AT 01.04.2014 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 (13th BImSchV), at waste incineration plants according to Directive 2010/75/EU, chapter IV (17th BImSchV), the 27th BImSchV, the 30th BImSchV and TA Luft. The measured ranges have been selected so as to cater for 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 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 flow velocities 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.

Basis of the certification

This certification is based on:

- Test report 936/21219344/B dated 01 October 2013 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 01.04.2014 B12, chapter II no. 2.1,
UBA announcement dated 27 February 2014:

AMS designation:

AccuFlo QAL for 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

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 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 where 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.

The current software version is: LSE-QAL-2.11
The current manual version is: BA-AccuFlo QAL-de-L-1731

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.

Certification of the AccuFlo QAL 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. 0000038500: 22 March 2013
Expiry date of the certificate: 04 March 2018

Test report: 936/21219344/A dated 08 October 2012
TÜV Rheinland Energie und Umwelt GmbH, Cologne
Publication: BAnz AT 05.03.2013 B10, chapter II no. 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 01 October 2013
TÜV Rheinland Energie und Umwelt GmbH, Cologne
Publication: BAnz AT 01.04.2014 B12, chapter II no. 2.1
UBA announcement dated 27 February 2014

Renewal of the certificate

Certificate no. 0000038500_01: 05 March 2018
Expiry date of the certificate: 04 March 2023

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

Test laboratory	936/21219344/B
Date of report	TÜV Rheinland
	2013-10-01

Measured component

Certification range	Velocity
	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

Requirement of 2010/75/EU	U in % of the range 20 m/s	3,7
Requirement of EN 15267-3	U in % of the range 20 m/s	10,0 **
	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.