

# CERTIFICATE

## of Product Conformity (QAL1)

Certificate No.: 0000040211

**Certified AMS:** K-BAR 2000B for velocity

**Manufacturer:** Kurz Instruments, Inc.  
2411 Garden Road  
Monterey  
CA 93940  
USA

**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).



Suitability Tested  
EN 15267  
QAL1 Certified  
Regular  
Surveillance

www.tuv.com  
ID 0000040211

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:  
31 March 2019

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.

<b>Test report:</b>	936/21219690/A of 10 October 2013
<b>Initial certification:</b>	01 April 2014
<b>Expiry date:</b>	31 March 2019
<b>Publication:</b>	BAnz AT 01 April 2014 B12, chapter II, No. 2.2

#### **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 three-month field test at a municipal waste incinerator.

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 936/21219690/A of 10 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. 2.2, Announcement by UBA from 27 February 2014)

**AMS designation:**

K-BAR 2000B for velocity

**Manufacturer:**

Kurz Instruments, Inc., Monterey, USA

**Field of application:**

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

**Measuring range during the performance test:**

Component	Certification range	Unit
velocity	0 - 30	m/s

**Software version:**

MFT-B VER 2.08

**Restriction:**

The measuring system may only be employed if the temperature does not fall below dewpoint.

**Notes:**

1. The maintenance interval is four weeks.
2. The measuring system may be used at exhaust gas temperatures of up to 500 °C.

**Test report:**

TÜV Rheinland Energie und Umwelt GmbH, Cologne  
Report No.: 936/21219690/A of 10 October 2013



### **Certified product**

This certificate applies to automated measurement systems conforming to the following description: The measuring system K-BAR 2000B for monitoring exhaust gas velocity consists of one or more sensor probe rods in which one or more sensor elements are fitted (the tested measuring system is equipped with 2 built-in sensor elements) that measure velocity according to the principle of thermal anemometry. To do so, an electrically heated resistance temperature detector (RTD) is used which maintains a constant temperature difference to the surrounding sample gas (temperature is measured with a second RTD). The measurement signal produced is the electricity required to maintain a constant temperature difference between the heated RTD and the sample gas.

An electronic analysis component is fitted directly on the probe rod and is connected to the external analysis and control electronics Adam 155B. The Adam 155B component calculates and provides the mean value of the individual elements. The parameters of the entire measuring system can also be controlled using the keyboard and display.

A control cycle for zero and span point control can be initiated via an external Siemens Logo PC. No proper reference point checks were carried out, but the evaluation electronics of the sensor elements were subjected to testing.

### **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](http://qal1.de).

Certification of K-BAR 2000B 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. 0000040211: 29 April 2014

Expiry date of the certificate: 31 March 2019

Test report: 936/21219690/A of 10 October 2013  
TÜV Rheinland Energie und Umwelt GmbH, Cologne

Publication: BAnz AT 01 April 2014 B12, chapter II, No. 2.2  
Announcement by UBA from 27 February 2014

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

**Measuring system**

Manufacturer	Kurz Instruments Inc.
AMS designation	K-Bar 2000B
Serial number of units under test	1294A / 1294B
Measuring principle	Thermal convection

**Test report**

Test laboratory	TÜV Rheinland
Date of report	2013-10-10

**Measured component**

	Velocity
Certification range	0 - 30 m/s

**Calculation of the combined standard uncertainty**

**Tested parameter**

		$u^2$
Standard deviation from paired measurements under field conditions *	$u_D$ 0.215 m/s	0.046 (m/s) <sup>2</sup>
Lack of fit	$u_{lof}$ -0.230 m/s	0.053 (m/s) <sup>2</sup>
Zero drift from field test	$u_{d,z}$ 0.035 m/s	0.001 (m/s) <sup>2</sup>
Span drift from field test	$u_{d,s}$ 0.052 m/s	0.003 (m/s) <sup>2</sup>
Influence of ambient temperature at span	$u_t$ 0.115 m/s	0.013 (m/s) <sup>2</sup>
Influence of supply voltage	$u_v$ 0.012 m/s	0.000 (m/s) <sup>2</sup>
Uncertainty of reference material at 70% of certification range	$u_{rm}$ 0.242 m/s	0.059 (m/s) <sup>2</sup>

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

Combined standard uncertainty ( $u_c$ )	$u_c = \sqrt{\sum (u_{max, j})^2}$	0.42 m/s
Total expanded uncertainty	$U = u_c * k = u_c * 1.96$	0.82 m/s

**Relative total expanded uncertainty**

<b>Requirement of 2000/76/EC and 2001/80/EC</b>	<b>U in % of the range 30 m/s</b>	<b>2.7</b>
Requirement of EN 15267-3	U in % of the range 30 m/s	10.0**
	U in % of the range 30 m/s	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.