Umwelt Bundes Amt
For our Environment

TÜVRheinland®
Precisely Right.

CERTIFICATE

on Product Conformity (QAL1)

Number of Certificate: 0000035007

Certified AMS:	D-EMS 2000
Manufacturer:	DURAG data systems GmbH Kollaustr.105 22453 Hamburg Germany
Test Institute:	TÜV Rheinland Energie und Umwelt GmbH

This is to certify that the DAHS has been tested and found to comply with:

Uniform Practice in monitoring emissions 2010,
Emissions data teletransmission (EFÜ) definition 2005,
Emissions data evaluation according to EN 14181 2004,
VDI 4201-01: 2010 and VDI 4201-02: 2010
EN 15267-1: 2009, EN 15267-2: 2009.

Certification is awarded in respect of the conditions stated in this certificate (also see the following pages).

www.tuv.com TÜVRheinland® ID: 0000035007

- German Type Approval (Suitability Tested)
- QAL1 certified
- TUV approved
- Annual inspection

Publication in the German Federal Gazette (BAnz.) of 02 March 2012

The certificate is valid until:
01 March 2017

Umweltbundesamt
Dessau, 16 March 2012

i. A. Dr. Hans-Joachim Hummel

TÜV Rheinland Energie und Umwelt GmbH
Köln, 15 March 2012

ppa. Dr. Peter Wilbring

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Am Grauen Stein
51105 Köln

Accreditation according to EN ISO/IEC 17025 and certified according to ISO 9001:2008.

10/221 2.08

Test report:	936/21217135/A of 14 October 2011
First certification:	02 March 2012
Validity ends:	01 March 2017
Publication:	BAnz. 02. March 2012, No. 36, p. 920, chapter III, No. 1.2

Approved application
The certified data acquisition and handling system (DAHS) is suitable for continuous emissions data acquisition, evaluation and teletransmission at plants with continuous monitoring.

The suitability of the data acquisition system for this application was assessed on the basis of a laboratory test and a more than three months field test at a waste incinerator. Additional a coal fired power plant was simulated.

The AMS is approved for a temperature range of +5 °C to +40 °C.

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

Basis of the certification
This certification is based on:

- Test report: 541935 of 20 May 2005
  TÜV Industrie Service GmbH
  TÜV Süd Gruppe, Abt. Umwelt-Service, 80686 München
- Test report: 20086187 of 23 Dezember 2005,
  TÜV Industrie Service GmbH
  TÜV Süd Gruppe, Abt. Umwelt-Service, 80686 München
- Test report 936/21217135/A dated 14 October 2011
  of TÜV Rheinland Energie und Umwelt GmbH
- suitability announced by the German Environmental Agency (UBA) as the relevant body
- the ongoing surveillance of the product and the manufacturing process
- publication in the German Federal Gazette
  BAnz. 02 March 2012, No. 36, page 920, chapter III, No. 1.2,
  Announcement by UBA from 23 February 2012

AMS name:
D-EMS 2000

Manufacturer:
DURAG data systems GmbH, Hamburg

Field of application:
Emission data acquisition, evaluation and remote transmission for plants with continuous monitoring

Measuring ranges during suitability test:
- Analog data transmission
- Digital data transmission via Profibus
- Emission emote data transmission

Software version:
Version 4.50

Restriction:
In order to protect the system from unauthorised access to saved data during continuous operation, access rights granted by the administrator of the PC operating system have to be restricted on file manager programs (such as Explorer).

Notes:
1. The physical limitations of data transmission via RS 232C/RS 485 or network connection shall be taken into account at the time of installation.
2. Complementary testing (changes in software, digital interface for Profibus and Modbus) for notification of the Federal Environment Agency of 21 February 2006 (BAnz. p. 2653, chapter III, No. 1.6) and 15 July 2011 (BAnz. p. 2725, chapter III, 5th notification).

Test report:
TÜV Rheinland Energie und Umwelt GmbH, Köln
Report No.: 936/21217135/A of 14 October 2011

Certified product
This certificate applies to systems confirming to the following description:

The data acquisition and handling system (DAHS) comprises the communication and/or DIN rail units and a PC. The communication rail unit (KE) and/or DIN rail unit (HS) serves for recording analogous and status signals. The analog signals change into digital signals via 12-bit analog-digital converters. The temporal resolution of the signals and storage of the raw data is 1/sec.

Data acquisition with D-MS 500KE for analog signals and status signals
Potential-independent inputs serve for the data acquisition of current signals in the range of 0 - 20 mA. For the transformation of the input current into a measured voltage in the input circle a 100 Ω resistance is integrated. The measured voltages transform into a 12-bit data word via an analog-digital-transformer each.
The status signals are collected by relays and passed on as digital signals.
Data storage: 16 days (optional: 96 days) on Compact flash card.
One D-MS 500KE can contain a maximum of 11 input/output units.

Overview of the technical data:
- 3 serial interfaces, by default 1xRS485, 2xRS232
- 1 service interface RS232
- 1 Ethernet TCP/IP-connection
- 1 CAN-interface (to date without use)
- Current supply of 115/230 VAC / 50/60Hz 100VA
- Input-cards (per card)
- 8 analog inputs with 12 bits resolution, 0 - 20 mA, internal resistance of 100 Ω
- 16 Digital inputs with 24 V of internal mains voltage

Data acquisition with D-MS 500HS for analog signals and status signals
Potential-independent inputs serve for the data acquisition of current signals in the range of 0 - 20 mA. For the transformation of the input current into a measured voltage in the input circle a 50 Ω resistance is integrated. The measured voltages transform into a 12-bit data word via an analogous-digital transformer each.
The status signals are captured by an optical coupler and passed on as digital signals.
This unit does not allow data storage.

- Overview of the technical data:
- Modules to the snapping on DIN rails
- A serial bus connection RS485
- Current supply 24VDC D MS 500 HS-PS
- D MS 500 HS-AI with 8 analog inputs of 12 bits resolution, 0/4-20 mA / 50 ohm each
- D MS 500 HS-DIO with 7 digital inputs and 8 digital outputs each
- 24 V external mains voltage
- D MS 500 HS-AO with 4 analog outputs 0/4-20 mA / 500 ohm each
- Up to 16 modules can be connected to D-EMS 2000.

Profibus interface
As profibus interface, the Profibus Master FNL DP of the company COMSOFT GmbH Karlsruhe is used. Revision: 02;SW/FW:2.19.34; HW:02.1, GSD: COMSOA4A.GSD, file version: 2011-09-29. Data transmission takes place according to the interface definition in compliance with VDI 4201-0 part 1 and part 2.

Evaluation of the data
Data evaluation runs on an industrial PC with the following minimum configuration:

- Pentium > 3,2 GHz, 512 MBS RAM, 2 hard disks □ 160 GB, Raid 0, Ethernet interface,
- serial (RS 232) optional / USB interfaces, DCF77 receiver, standard printer
- Modem (external standard modem V92) for remote transmission or remote servicing
- CD / DVD-ROM (optional: burner) or external hard disk.
- Operating system: Windows XP, Windows 7, WinServer 2003 or WinServer 2008 R2
- The PC is equipped with a 2nd hard disk for data mirroring, a backup system (e.g. CD burner), and/or an Ethernet interface for data saving on another PC.

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 given address 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 is presented on page 1 of this certificate.

This document as well as the certification mark remains property of TÜV Rheinland Energie und Umwelt GmbH. With revocation of the publication the certificate looses its validity. After the expiration of the validity 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 the validity is also accessible on the internet Address: **qal1.de**.

Certification of data acquisition and handling system (DAHS) D-EMS 2000 is based on the documents listed below and the regular, continuous monitoring of the Quality Management System of the manufacturer:

Requirements:

Uniform Practice in monitoring emissions; circular of the BMU dated 13.6.2005 - IG I 2 - 45053/5 and 04.8.2010 - IG I 2 - 51134/0.

Emissions data teletransmission (EFÜ) definition in the copy of the resolution of the LAI dated 28.09.2005 (corrected copy dated 15 November 2006).

Basic test:

Test report: 541935 of 20 May 2005
TÜV Industrie Service GmbH
TÜV Süd Gruppe, Abt. Umwelt-Service, 80686 München
Publication: BAnz. 29 October 2005, No. 206, page 15700, chapter III, No. 1.3
Announcement by UBA from 25 July 2005

1st supplementary test for teledata transmission

Test report: 20086187 of 23 December 2005
TÜV Industrie Service GmbH
TÜV Süd Gruppe, Abt. Umwelt-Service, 80686 München
Publication: BAnz. 08 April 2006, No. 70, page 2653, chapter III, No. 1.6
Announcement by UBA from 21 February 2006

Notification

- Statement of TÜV Süd Industrie Service GmbH, München, of 22 November 2006 about software changes
  BAnz. 20 April 2007, No. 75, page 4139, chapter IV, 5th notification
  Announcement by UBA from 12 April 2007
- Statement of TÜV Süd Industrie Service GmbH, München, of 31 March 2009 about software changes
  BAnz. 25 August 2009, No. 125, page 2929, chapter III, 22th notification
  Announcement by UBA from 03 August 2009
- Statement of TÜV Rheinland Energie und Umwelt GmbH of 31 March 2011 about name change
  BAnz. 29 July 2011, No. 133, page 2725, chapter III, 5th notification
  Announcement by UBA from 15 July 2011

Initial certification according to EN 15267:

Certificate No. 0000035007: 16 March 2012

Validity of the certificate until: 01 March 2017

Test report: 936/21217135/A of 14 October 2011
TÜV Rheinland Energie und Umwelt GmbH

Publication: BAnz. 02 March 2012, No. 36, p. 920, chapter III, No. 1.2,
Announcement by UBA from 23 February 2012