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Umwelt Bundesamt

Certificate number: 2901676-ts

TÜV SÜD Industrie Service

Certificate

of product conformity (QAL 1)

Certificate number: 2901676-ts

AMS	McON Air Emission Serie DSP 208/00-EM for flue gas velocity
Manufacturer	PROMECON process measurement control GmbH Steinfeldstraße 5 39179 Barleben Germany

invalid since 2022-11-17

Test institute TÜV SÜD Industrie Service GmbH

This is to certify that the AMS has been tested and found to comply with: DIN EN 15267-1: 2009, DIN EN 15267-2: 2009, DIN EN 15267-3: 2008, DIN EN 14181: 2015 and DIN EN ISO 16911-2 (2013).

Certification is awarded in respect of conditions stated in this certificate (the certificate consists of 6 pages).

DIN EN 15267 TÜV SÜD Valid until 05/2025

Certificate No: 2901676-ts

Publication in the German Federal Gazette (BAnz) of 07 May 2020

Umweltbundesamt
Dessau, 27 May 2020

Dr. Marcel Langner
Head of Section II 4.1

This certificate will expire on: 06 May 2025

TÜV SÜD Industrie Service GmbH
Testing laboratory Emission measurement/ calibration
München, 26 May 2020

Hans-Jörg Eisenberger

TÜV®

Umwelt Bundesamt

Certificate number: 2901676-ts

TÜV SÜD Industrie Service

Test report	2901676 from 30 September 2019
Initial certification	07 May 2020
Certificate validity until	06 May 2025 (5 years)
Publication	BAnz AT 07 May 2020 B8, chapter I, No. 2.2

Approved application

The tested AMS is suitable for use at plants requiring authorisation, plants according to the 27. BImSchV and TA Luft. The suitability of the AMS for this application was assessed on the basis of a laboratory test and a field test of the McON Air Emission Serie DSP 208/00-EM system lasting over three months at a plant according to Directive 2010/75/EU chapter IV (17. BImSchV).

The measuring system is approved for ambient temperatures between -20 °C to +50 °C.

The AMS publication, the suitability test and the performance of the uncertainty calculations were conducted based on the provisions valid at the time of testing. Due to possible amendments to legal foundations every user should ensure before use of the AMS that it is suitable for monitoring the applicable limit values.

The operator should consult the manufacturer to ensure that the AMS is suitable for the plant where it is being installed.

Basis of the certification

This certificate is based on:

- TÜV SÜD Industrie Service GmbH test report 2901676 from 30 September 2019
- Suitability announcement 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 07.05.2020 B8, chapter I, No. 2.2, announcement by UBA from 31 March 2020)

Umwelt Bundesamt

Certificate number: 2901676-ts

TÜV SÜD Industrie Service

AMS designation:	McON Air Emission Serie DSP 208/00-EM for flue gas-velocity
Manufacturer:	PROMECON process measurement control GmbH, Barleben/Germany
Suitability:	For plants requiring authorisation, plants in compliance with the 27. BImSchV and TA Luft

Measurement ranges in the suitability test:

Component	Certification range	Supplementary measurement range	Unit
Flue gas velocity	3 - 30	3 - 50	m/s

Software version:

Firmware: 2.11.0.1

Restrictions:

The lower limit for determining the exhaust gas velocity is 3 m/s.

Notes:

1. The maintenance interval is two months.
2. The measuring system is to be checked for functionality at intervals of two months using the test cycle.
3. The measuring system determines the flue gas velocity under operating conditions.
4. By configuration of the flue gas duct cross-sectional area and corresponding adaptation of the analogue output range, the volume flow can be output in m³/h in operating conditions.
5. Measured values < 3 m/s are displayed as 4 mA and must therefore be eliminated by adjusting the lower plausibility limit in the evaluation system accordingly.

Test report:	TÜV SÜD Industrie Service GmbH, Munich Report-No.: 2901676 from 30 September 2019

invalid since 2022-11-17

Certified product

The certificate applies to AMS that comply with the following description:

The entire McON Air Emission Series DSP 208/00-EM measuring system consists of the two sensors, the range extender antenna, the McON Air box with the evaluation and operating electronics with the analogue and status outputs and the range extender box for operating and controlling the range extender antenna.

The McON Air Emission Series DSP 208/00-EM measuring system is designed to measure the gas velocity in flue gases. To determine the gas velocity, the pattern of electronic fluctuations induced by changes in the magnetic field of the flue gas is detected according to the principle of triboelectric measurement. The time difference of the detection at two sensors installed one behind the other in the flue gas duct is a measure for the gas velocity, if the sensors are at a defined distance from each other.

The entire system consists of the following components:

Entire system

Manufacturer:	PROMECON Process measurement control GmbH
Type:	McON Air Emission Series DSP 208/00-EM
Software:	Firmware: 2.1.0.1
Measurement principle:	triboelectric

McON Air Box:	McON Air Box Grounding cable 5 m Ring ferrite Cabinet key Security key Screw plug M16x1,5 USB Adapter for COM connection Board adapter cable for COM port Closing cap for COM port
Range Extender Box	RE Box with integrated touch panel MAAD-GT12 Grounding cable 5 m Security key Connection cable to McON Air Box 2 m; optional 10 m
Sensor	2 x sensor (standard length 1150 mm optional 800 mm / 600 mm / 400 mm) 2 x sensor cable 20 m or optional 10 m Double adapter socket 350 mm for sensor mounting
Range Extender Antenna	RE antenna (standard length 800 mm optional 1150 mm / 600 mm / 400 mm) with 1 – 3 groups of lace RE cable 20 m optional 10 m Adapter socket for antenna mounting Copper paste

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General notes

This certificate is based on the analyser tested. The manufacturer is responsible for the continuous compliance of the production to the DIN EN 15267 requirements. The manufacturer is required to maintain an approved quality management system to control the manufacture of the certified product. Regular monitoring must be conducted on both the product and the quality management systems.

If the product from the current production series no longer comply with the certified product, the Environmental Service Department of TÜV SÜD Industrie Service GmbH must be informed (address see footnote).

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 on the product or used in publicity material for the certified product.

This document and the certification mark shall remain the property of TÜV SÜD Industrie Service GmbH.

Should the publication be revoked, this certificate will become invalid. This document must be returned when the period of validity has elapsed and at the request of TÜV SÜD Industrie Service GmbH and the certification mark may no longer be used.

invalid since 2022-11-17

The current version of the certificate and its expiration is also accessible on the internet at **qal1.de**.

The certification of the MCS 4 Air Emission Series DSP 208/00-EM measuring system is based on the following documents and the regular continuous monitoring of the manufacturer's quality management system:

Initial certification to DIN EN 15267:

Certificate No. 2901676-ts	07 May 2020
Certificate validity until	06 May 2025 (5 years)

Test report: 2901676 from 30 September 2019,
TÜV SÜD Industrie Service GmbH
Publication: BAnz AT 07 May 2020 B8, chapter I No. 2.2,
UBA publication from 31 March 2020

Calculation of total uncertainty for the measuring system McON Air Emission Serie DSP 208/00-EM for QAL1 testing to DIN EN 14181 and DIN EN 15267-3

Total uncertainty for the measurement component in the measurement range 3-30 m/s

Performance characteristic	*Uncertainty*	*Value standard uncertainty m/s*	*Square of standard uncertainty m/s²*
Lack-of-fit	u_{lof}	0,09	0,0081
Zero drift from field test	$u_{d,z}$	-0,023	0,00053
Span drift from field test	$u_{d,s}$	0,087	0,00757
Influence of ambient temperature at span	u_t	0,022	0,0005
Influence of sample gas pressure	u_p		
Influence of sample gas flow	u_f		
Influence of supply voltage	u_v	0,000	0,0000
Cross-sensitivity (interference)	u_i		
Repeatability standard deviation at span	$u_r = s_r$	0,010	ur < du
Standard deviation from paired measurements under field cond.	$u_d = s_d$	0,062	0,00384
Uncertainty of reference material % by 70% of CR	u_{rm}	0,000	0,0000
Excursion of measurement beam	u_{anb}		
Converter efficiency for AMS measuring NOx	u_{ce}		
Variation of response factors (TOC)	u_{rf}		
		total	*0,02052*
Combined standard uncertainty	$u_c = \sqrt{\sum (u_i)^2}$	*0,14325*	m/s
Total expanded uncertainty	$U_{0,95} = 1,96 \times u_c$	*0,28077*	m/s
Relativ expanded uncertainty	U	**0,94**	% CR
Permissible uncertainty of EN 15267-3	(of CR 30 m/s)	**3**	% CR
Complied with requirements relating to the measurement uncertainty		**yes**	regarding EN 15267-3
Permissible uncertainty 13. / 17. BImSchV	(of CR 30 m/s)	**4**	% CR
Complied with requirements relating to the measurement uncertainty		**yes**	regarding 13. / 17. BImSchV