



Certificate number: 3299856-ts



Industrie Service

CERTIFICATE

of product conformity (QAL 1)

Certificate number: 3299856-ts

Certified AMS	iFiD Mobile for TOC
Manufacturer	Testa GmbH Kathi-Kobus-Straße 15 80797 Munich Germany

Test institute	TÜV SÜD Industrie Service GmbH
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**This is to certify that the AMS has been tested and found to comply with standards
DIN EN 15267-1 (2009), DIN EN 15267-2 (2009), DIN EN 15267-4 (2017) and
DIN EN 14181 (2015).**

**Certification applies to the conditions listed in this certificate
(the certificate consists of 10 pages).**



Certificate No.: 3299856-ts

**Publication in the German Federal Gazette
(BAnz) of 03 May 2021**

**This certificate will expire on:
02 May 2026**

Umweltbundesamt
Dessau, 05 May 2021

TÜV SÜD Industrie Service GmbH
Testing laboratory emission measurement/
calibration
Munich, 04 May 2021

Dr. Marcel Langner
Head of Section II 4.1

Hans-Jörg Eisenberger

Test report	3299856 from 03 September 2020
Initial certification	03 May 2021
Certification validity until	02 May 2026 (5 years)
Publication	BAnz AT 03 May 2021 B9, chapter I, no. 4.2

Approved application

The P-AMS tested is suitable for use for recurring measurements at plants requiring authorization and plants in accordance to the 2. BImSchV, the 27. BImSchV and the 44. BImSchV. The suitability of the AMS for these applications was assessed on the basis of a laboratory test and a field test at five different industrial plants each over one day. These were a waste incineration plant for municipal and commercial waste, a plant for the production of cements and cement clinker, a biomass power plant, an asphalt mixing plant and a solvent separation plant. The measuring system is approved for the ambient temperature range from +5 °C to +40 °C.

The P-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 values.

The operator should consult the manufacturer to ensure that the P-AMS is suitable for the plant at which it is to be installed.

Certification basis

This certificate is based on:

- TÜV SÜD Industrie Service GmbH test report 3299856 from 03 September 2020
- Suitability announcement by the German Federal Environmental Agency as relevant body
- The ongoing surveillance of the product and the manufacturing process

- Publication in the German Federal Gazette (BAnz AT 03 May 2021 B9, chapter I, no. 4.2, UBA publication from 31 March 2021)

P-AMS: iFiD Mobile for TOC

Manufacturer: Testa GmbH, Munich

Suitability: Portable measuring system for carrying out recurring emission measurements and comparative measurements within the scope of QAL 2 and AST in accordance with DIN EN 14181 at plants requiring authorization and plants in accordance to the 2. BImSchV, the 27. BImSchV and 44. BImSchV

Measurement ranges in the suitability test:

Component	Certification range	Supplementary measurement ranges			Unit
		Measurement range 2	Measurement range 3	Measurement range 4	
TOC	0 – 15	0 – 30	0 – 150	0 – 500	mg/m ³

Software versions: Testa CE: 1.76
DGA: 2.0
I/O: 2.0
QPC: 2.0

Restrictions:

None

Notes:

1. The provision with zero gas can be realised by connecting synthetic air (5.0) or by using the internal zero gas air treatment.
2. If the length of the heating line exceeds 10 m, an external controller must be used to regulate the temperature.

Test report: TÜV SÜD Industrie Service GmbH, Munich
Report no.: 3299856 from 03 September 2020

Certified Product

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

The entire tested P-AMS iFiD Mobile consists of a heated sample gas extraction probe with titanium filter, the heated sampling line, the analyser with micro-computer and display.

The iFiD Mobile detects TOC by means of a flame ionisation detector. For this purpose, sample gas is fed to the analyser via a sample gas extraction probe heated to 180 °C and a sample gas line heated to 180 °C with PTFE hose. The sample gas feed is realized by means of a membrane pump. For the operation of the flame ionisation detector, hydrogen (5.0) is additionally required as fuel gas and synthetic air (5.0) or ambient air, which is treated within the analyser by means of activated carbon and catalyst, as fuel air. If the length of the heating cable exceeds 10 m, an external controller must be used to regulate the temperature.

The entire system consists of the following components:

Analyser

Manufacturer: Testa GmbH
Type: iFiD Mobile
Software: Testa CE: 1.76
DGA: 2.0
I/O: 2.0
QPC: 2.0

Measurement principle: Flame-ionisation detector

Probe:

Manufacturer: Testa GmbH
Type: iFiD Filter
Filter: Titanium filter 5 µm, heated at 180°C
Controller: integrated in the analyser

Heated line

Manufacturer: Testa GmbH
Type: iFiD Line
Heating temperature: 180°C
Diameter: 40 mm
Tube: PTFE, 4 mm ID
Controller: integrated in the analyser

External heat controller (option)

Manufacturer: Horst GmbH
Type: Host GmbH: HT MC 11

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.

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

The certification of the iFiD Mobile measuring system is based on the following documents and the regular continuous monitoring of the manufacturer's quality management system:

Initial certification in accordance with DIN EN 15267:

Certificate no. 3299856-ts	03 May 2021
Certificate validity until	02 May 2026 (5 years)

Report no.: 3299856 from 03 September 2020,
TÜV SÜD Industrie Service GmbH
Publication: BAnz AT 03 May 2021 B9, chapter I no. 4.2,
UBA publication from 31 March 2021

Calculation of total uncertainty for QAL1 testing according to DIN EN 14181 and DIN EN 15267-4 for the measuring system iFiD Mobile, summarized for both P-AMS tested

Total uncertainty for the measurement component TOC in the measuring range 0-15 mg/m³ for the field test location 1 (biomass power plant)

Performance characteristic	Uncertainty	Value standard uncertainty mg/m ³	Square of standard uncertainty (mg/m ³) ²
Lack-of-fit	u_{lof}	-0,040	0,0016
Drift at zero point from field test	$u_{d,z}$	-0,042	0,0018
Drift at span point from field test	$u_{d,s}$	-0,153	0,0234
Influence of ambient temperature from field test	u_t	0,252	0,0635
Influence of sample gas flow from field test	u_f	0,000	0,0000
Influence of voltage supply from field test	u_v	0,000	0,0000
Cross-sensitivity field test specific	u_i	-0,234	0,0548
Repeatability standard deviation at span	$u_r = s_r$	0,012	$u_r < u_D$
Standard deviation from paired measurements under field cond.	$u_D = s_D$	0,065	0,0042
Uncertainty of reference material at 70% of CR	u_m	0,1212	0,0147
		total	0,1640
Combined standard uncertainty	$u_c = \sqrt{\sum (u_i)^2}$	0,405	mg/m ³
Total expanded uncertainty	$U_{0,95} = 1,96 \cdot u_c$	0,7938	mg/m ³
Relativ expanded uncertainty	U	7,9	% ELV
Permissible uncertainty of EN 15267-3	(of ELV 10 mg/m ³)	22,5	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding EN 15267-3
Permissible uncertainty 13. / 17. BImSchV	(of ELV 10 mg/m ³)	30	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding 13. / 17. BImSchV

Total uncertainty for the measurement component TOC in the measuring range 0-15 mg/m³ for the field test location 2 (waste incineration plant)

Performance characteristic	Uncertainty	Value standard uncertainty mg/m ³	Square of standard uncertainty (mg/m ³) ²
Lack-of-fit	u_{lof}	-0,040	0,0016
Drift at zero point from field test	$u_{d,z}$	0,140	0,0196
Drift at span point from field test	$u_{d,s}$	-0,132	0,0174
Influence of ambient temperature from field test	u_t	0,420	0,1764
Influence of sample gas flow from field test	u_f	0,000	0,0000
Influence of voltage supply from field test	u_v	0,000	0,0000
Cross-sensitivity field test specific	u_i	-0,199	0,0396
Repeatability standard deviation at span	$u_r = s_r$	0,012	$u_r < u_D$
Standard deviation from paired measurements under field cond.	$u_D = s_D$	0,065	0,0042
Uncertainty of reference material at 70% of CR	u_{rm}	0,1212	0,0147
		total	0,2735
Combined standard uncertainty	$u_c = \sqrt{\sum (u_i)^2}$	0,523	mg/m ³
Total expanded uncertainty	$U_{0,95} = 1,96 \cdot u_c$	1,0251	mg/m ³
Relativ expanded uncertainty	U	10,3	% ELV
Permissible uncertainty of EN 15267-3	(of ELV 10 mg/m ³)	22,5	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding EN 15267-3
Permissible uncertainty 13. / 17. BImSchV	(of ELV 10 mg/m ³)	30	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding 13. / 17. BImSchV

Total uncertainty for the measurement component TOC in the measuring range 0-15 mg/m³ for the field test location 3 (solvent separation plant)

Performance characteristic	Uncertainty	Value standard uncertainty mg/m ³	Square of standard uncertainty (mg/m ³) ²
Lack-of-fit	u_{lof}	-0,040	0,0016
Drift at zero point from field test	$u_{d,z}$	-0,104	0,0108
Drift at span point from field test	$u_{d,s}$	-0,145	0,0210
Influence of ambient temperature from field test	u_t	0,234	0,0548
Influence of sample gas flow from field test	u_f	0,000	0,0000
Influence of voltage supply from field test	u_v	0,000	0,0000
Cross-sensitivity field test specific	u_i	0,009	0,0001
Repeatability standard deviation at span	$u_r = s_r$	0,012	$u_r < u_D$
Standard deviation from paired measurements under field cond.	$u_D = s_D$	0,065	0,0042
Uncertainty of reference material at 70% of CR	u_m	0,1212	0,0147
		total	0,1072
Combined standard uncertainty	$u_c = \sqrt{\sum (u_i)^2}$	0,3274	mg/m ³
Total expanded uncertainty	$U_{0,95} = 1,96 \cdot u_c$	0,6417	mg/m ³
Relativ expanded uncertainty	U	6,4	% ELV
Permissible uncertainty of EN 15267-3	(of ELV 10 mg/m ³)	22,5	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding EN 15267-3
Permissible uncertainty 13. / 17. BImSchV	(of ELV 10 mg/m ³)	30	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding 13. / 17. BImSchV

Total uncertainty for the measurement component TOC in the measuring range 0-15 mg/m³ for the field test location 4 (plant for the production of cements and cement clinker)

Performance characteristic	Uncertainty	Value standard uncertainty mg/m ³	Square of standard uncertainty (mg/m ³) ²
Lack-of-fit	u_{lof}	-0,040	0,0016
Drift at zero point from field test	$u_{d,z}$	-0,037	0,0014
Drift at span point from field test	$u_{d,s}$	-0,087	0,0076
Influence of ambient temperature from field test	u_t	0,120	0,0144
Influence of sample gas flow from field test	u_f	0,000	0,0000
Influence of voltage supply from field test	u_v	0,000	0,0000
Cross-sensitivity field test specific	u_i	-0,294	0,0864
Repeatability standard deviation at span	$u_r = s_r$	0,012	$u_r < u_D$
Standard deviation from paired measurements under field cond.	$u_D = s_D$	0,065	0,0042
Uncertainty of reference material at 70% of CR	u_{rm}	0,1212	0,0147
		total	0,1303
Combined standard uncertainty	$u_c = \sqrt{\sum (u_i)^2}$	0,361	mg/m ³
Total expanded uncertainty	$U_{0,95} = 1,96 \cdot u_c$	0,7076	mg/m ³
Relativ expanded uncertainty	U	7,1	% ELV
Permissible uncertainty of EN 15267-3	(of ELV 10 mg/m ³)	22,5	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding EN 15267-3
Permissible uncertainty 13. / 17. BImSchV	(of ELV 10 mg/m ³)	30	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding 13. / 17. BImSchV

Total uncertainty for the measurement component TOC in the measuring range 0-15 mg/m³ for the field test location 5 (asphalt mixing plant)

Performance characteristic	Uncertainty	Value standard uncertainty mg/m ³	Square of standard uncertainty (mg/m ³) ²
Lack-of-fit	u_{lof}	-0,040	0,0016
Drift at zero point from field test	$u_{d,z}$	0,061	0,0037
Drift at span point from field test	$u_{d,s}$	0,125	0,0156
Influence of ambient temperature from field test	u_t	0,682	0,4651
Influence of sample gas flow from field test	u_f	0,000	0,0000
Influence of voltage supply from field test	u_v	0,000	0,0000
Cross-sensitivity field test specific	u_i	0,165	0,0272
Repeatability standard deviation at span	$u_r = s_r$	0,012	$u_r < u_D$
Standard deviation from paired measurements under field cond.	$u_D = s_D$	0,065	0,0042
Uncertainty of reference material at 70% of CR	u_{rm}	0,1212	0,0147
		total	0,5321
Combined standard uncertainty	$u_c = \sqrt{\sum (u_i)^2}$	0,7295	mg/m ³
Total expanded uncertainty	$U_{0,95} = 1,96 \cdot u_c$	1,4298	mg/m ³
Relativ expanded uncertainty	U	14,3	% ELV
Permissible uncertainty of EN 15267-3	(of ELV 10 mg/m ³)	22,5	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding EN 15267-3
Permissible uncertainty 13. / 17. BImSchV	(of ELV 10 mg/m ³)	30	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding 13. / 17. BImSchV