

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

DUSTHUNTER SP100

Manufactured by:

Endress+Hauser SICK GmbH+Co. KG

Bergener Ring 27
01458 Ottendorf-Okrilla
Germany

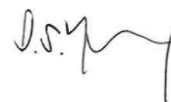
has been assessed by CSA Group
and for the conditions stated on this certificate complies with:

Environment Agency Guidance
“MCERTS for stack emissions monitoring equipment at industrial installations”
- Continuous emissions monitoring systems (CEMS)
Published 20 October 2020
EN 15267-1:2009, EN15267-2:2009, EN 15267-3:2007
& QAL 1 as defined in EN 14181: 2014

Certification ranges:

Component	Certification range (mg/m ³)	Supplementary ranges (mg/m ³)
Dust	0 - 7.5	0 - 10 0 - 15 0 - 50 0 - 100 0 - 200 0 - 500

Project No.: 80252988
Certificate No: CSA MC090143/07
Initial Certification: 24 April 2009
This Certificate issued: 24 April 2025
Renewal Date: 23 April 2029



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MCERTS is operated on behalf of the Environment Agency by

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Approved Site Application

Any potential user should make sure, in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For further information on stack emissions monitoring refer to the Environment Agency's guidance available at www.mcerts.net

This instrument is considered suitable for use on waste incineration and large combustion plants. This CEMS has been proven suitable for its measuring task (parameter and composition of the flue gas) by use of the QAL 1 procedure specified in EN14181. The lowest certified range for each determinand shall not be more than 1.5 times the daily average emission limit value (ELV) for incineration plants, and not more than 2.5 times the ELV for other types of applications.

The field test was carried out at a municipal waste incineration plant between April 2019 and August 2020.

Basis of Certification

This certification is based on the following test report(s) and on CSA Group's assessment and ongoing surveillance of the product and the manufacturing process:

TÜV Rheinland	Report Number 936/21208609/B, dated 20.10.2008
TÜV Rheinland	Report Number 936/21219384/B, dated 27.09.2012
TÜV Rheinland	Report Number 936/21246256/C, dated 17.09.2020

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Product Certified

The Dusthunter SP100 measuring system consists of the following parts:

- Sender/receiver unit DHSP-Txxx, where 'x' is maximum permissible gas temperature, 'x' is material and 'x' is nominal length of measuring probe, respectively.
Note: Units with nominal lengths greater than 735mm are intended solely for installation at thick-walled or double-walled ducts. The distance between the inner duct wall and the measuring opening shall not exceed 450mm.
- Connection cable to connect sender/receiver unit to control unit.
- Flange with tube1
- Control unit MCU connected via RS485 interface:
 - MCU-P – with integrated purge air supply (for internal duct pressure -50 to +2mbar)
 - MCU-N – without integrated purge air supply (external purge air required)
- Optional purge air unit (for external duct pressure -50 to +30mbar).

This certificate applies to all instruments fitted with software versions 01.08.00 for Sensor (Standard and Ex) and 01.12.05 (MCU) and serial number 17458546, onwards.

Allowable variations could include:

- A different brand or model of sampling system of the same type, if there is evidence the alternative system works with similar types of CEM.
- Additional manifolds and heated valves used to allow more than one analyser to share a sampling system.

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -40°C to +60°C
Instrument IP rating: IP66

Note: If the instrument is supplied with an enclosure, then the ambient temperature shall be monitored inside the enclosure to ensure that it stays within the above ambient temperature range.

Unless otherwise stated the evaluation was carried out on the certification range 0 - 7.5mg/m³

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time					62s	≤200s
Repeatability standard deviation at zero point	0.09					≤2.0%
Repeatability standard deviation at reference point	0.06					≤5.0%
Lack-of-fit						
0 - 7.5mg/m ³		0.93				≤3.0%
0 - 10mg/m ³		0.70				≤3.0%
0 - 15mg/m ³	-0.20					≤3.0%
0 - 50mg/m ³	0.40					≤3.0%
0 - 100mg/m ³	0.40					≤3.0%
0 - 200mg/m ³			1.00			≤3.0%
0 - 500mg/m ³	0.20					≤3.0%
Influence of ambient temperature zero point (-40°C to +60°C)		0.7				<5.0%
Influence of ambient temperature reference point (-40°C to +60°C)				3.1		<5.0%
Influence of voltage variations (190V to 250V)	-0.3					<2.0%
Influence of vibration (10 to 60Hz (±0.3mm), 60 to 150Hz at 1g)			1.3			To be reported
Measurement uncertainty (For and ELV of 5mg/m ³)					Guidance - at least 25% below max permissible uncertainty 7.5%	<22.5% (30%)

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Calibration function (field)		0.76			Note 1	>0.9
Response time (field)					61s	<200s
Lack of fit (field)	0.27					<3.0%
Maintenance interval					6 months Note 2	>8 days
Zero and Span drift requirement	Zero Value measurement The transmitting diode is switched off so that no signal is received. This means possible drifts, or zero-point deviations, are detected reliably in the overall system (e.g. due to an electronic defect). A warning signal is generated when the 'zero value' is outside the specified range. Control value measurement (span test) The intensity of the transmitting light changes between 70% and 100%. The light intensity received is compared against the standard value (70%). The measuring system generates an error signal for deviations greater than $\pm 2\%$. The error message is cleared again when the next function check runs successfully. The control value is determined with high precision through statistical evaluation of a number of intensity changes. For very low dust concentrations (less than approx. 1mg/m^3) the theoretically calculated value (70%) is output.					Clause 6.13 & 10.13 Manufacturer shall provide a description of the technique to determine and compensate for zero and span drift.
Change in zero point over maintenance interval	-0.4					<3.0%
Change in reference point over maintenance interval				-2.4		<3.0%
Availability					99.5%	>95%
Reproducibility			1.8			<3.3%

Note 1: The calibration function result / R2 values are between 0.76 and 0.82. The systems passed the variability test for a limit value of 5mg/m^3 . The CEMS pass the EN14181 criteria, but not the requirement for EN15267-3.

Note 2: The Dusthunter SP100 has a maintenance interval of 6 months. In the case of a new installation the measuring system should be tested by in weekly or biweekly intervals via visual inspection.

The work detailed below must be carried out at regular intervals, depending on local conditions:

- Zero and reference point checks
- Visual inspection of the CEMS.
- Checking and cleaning of the optical interfaces
- Checking of the purge air supply
- Regular replacement of the air filter
- Carrying out a control cycle with a check of zero and span point as well as the contamination signal

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Description

The DUSTHUNTER SP100 measuring system consists of a sender receiver unit and scattered light probe for one-sided installation on stacks. It is for measurement in low and medium dust concentrations.

The measuring system works according to the scattered-light measurement principle (forward dispersion). A laser diode illuminates the dust particles in the gas flow with modulated light in the visual range. A highly sensitive detector located next to the emitter at an angle of approximately 15° to the beam axis captures the light scattered by the particles. The received signal is electronically amplified and transmitted to the measuring channel of a microprocessor as a central part of the measuring, control and processing electronics.

General Notes

1. This certificate is based upon the equipment tested. The Manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this certificate. 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 system shall be subject to regular surveillance according to 'Regulations Applicable to the Holders of CSA Group Testing UK Ltd Certificates'.
2. The design of the product certified is held and maintained by TÜV Rheinland for certificate No. CSA MC090143.
3. If a certified product is found not to comply, CSA Group should be notified immediately at the address shown on this certificate.
4. The certification marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of CSA Group Testing UK Ltd Certificates'.
5. This document remains the property of CSA Group and shall be returned when requested by CSA Group.

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