

DUSTHUNTER S Scattered Light Measuring Device

Continuous measurement of dust for
low and medium concentrations



SICK
Sensor Intelligence.

DUSTHUNTER S

Modular system in four configurations

AREAS OF APPLICATION

- Emission monitoring, for example in:
 - Power stations and heating plants
 - Waste incineration plants and waste disposal
 - Metal processing (steel and aluminum plants, smelting works, foundries)
 - Cement plants
- Monitoring of filter systems
- Measurement of dust concentration in exhaust gas and exhaust air ducts before and after dust filters

DUSTHUNTER SB50 Scattered light Backward

- For measurement in low and medium dust concentrations
- One-sided installation
- No light absorber
- Automatic zero and reference point measurement

DUSTHUNTER SB100 Scattered light Backward

- For measurement in low and medium dust concentrations
- One-sided installation
- No light absorber
- Automatic zero and reference point measurement
- Contamination measurement and correction
- With suitability test

DUSTHUNTER SP100 Scattered light Probe

- For measurement in low and medium dust concentrations
- One-sided installation (probe)
- For large wall thickness or double-walled stacks
- Automatic zero and reference point measurement
- Soiling measurement and correction
- With suitability test

DUSTHUNTER SF100 Scattered light Forward

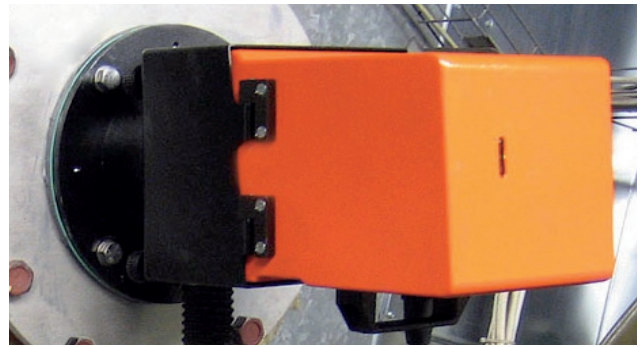
- For measurement in very low to medium dust concentrations
- Two-sided installation
- Automatic zero and reference point measurement
- Soiling measurement and correction
- With suitability test

KEY FEATURES

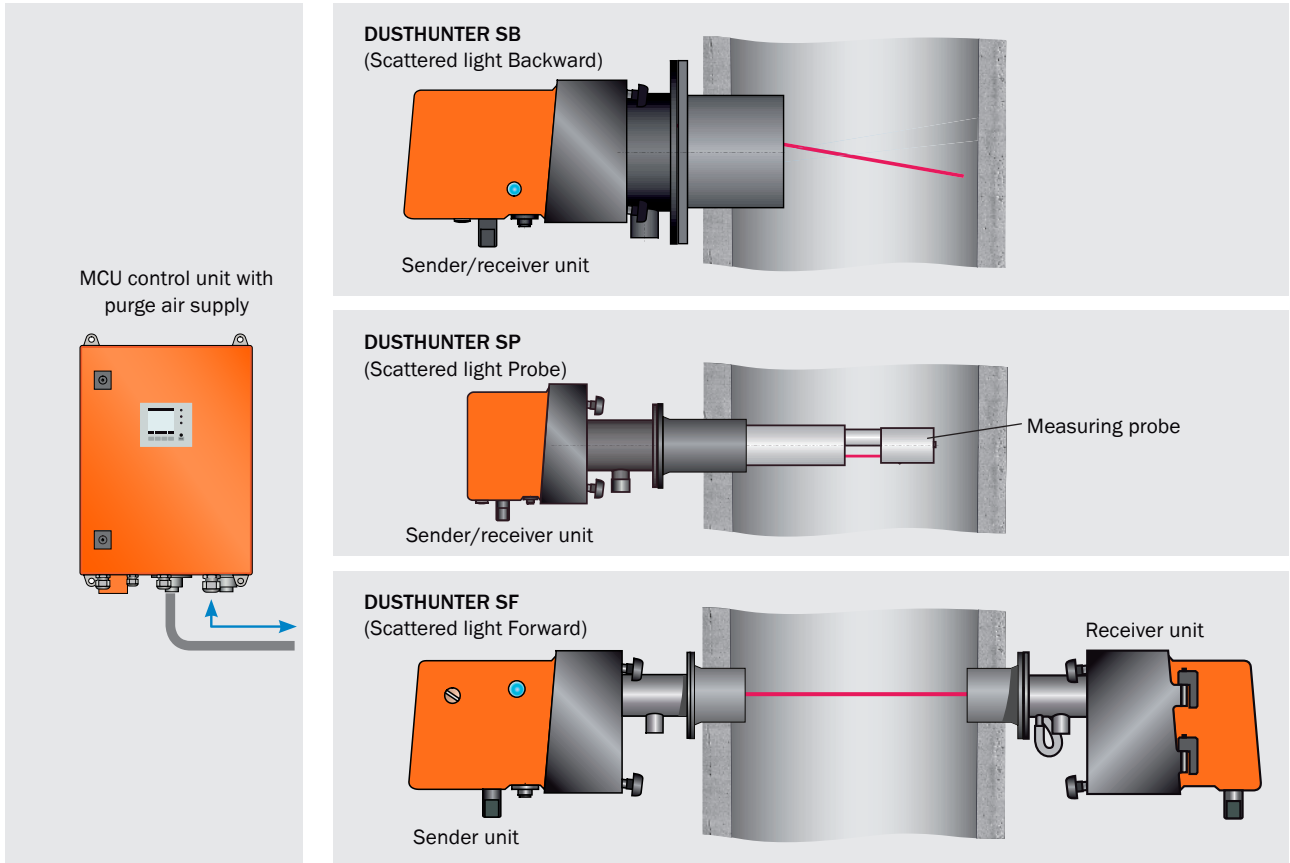
- Measurement of dust concentrations irrespective of gas velocity, moisture or charging of the particles
- Simple installation and start-up as well as comfortable operation
- Long maintenance intervals
- Status-dependent maintenance message
- Inputs/outputs extendable with additional modules



DUSTHUNTER SB

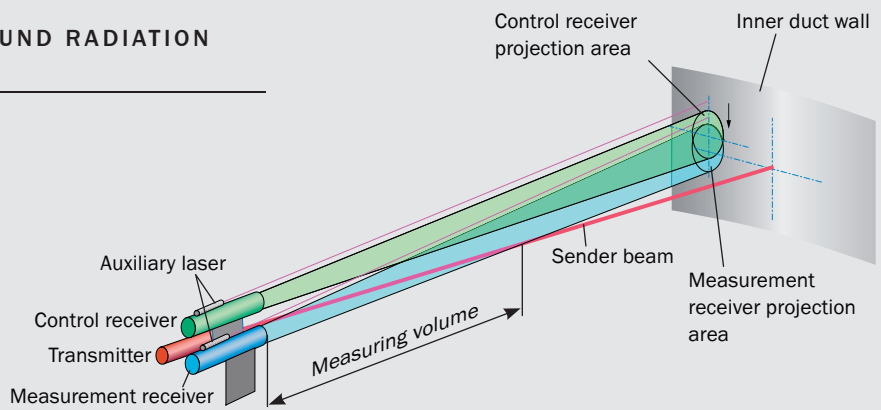


SYSTEM COMPONENTS



COMPENSATION OF BACKGROUND RADIATION ON DUSTHUNTER SB

The DUSTHUNTER SB does not require a light absorber. This enables installation on one side. Background radiation or ambient brightness is automatically compensated by means of a control receiver.



Technical Data		DUSTHUNTER S – Scattered Light Measuring Device							
Device models	SB50		SB100		SP100		SF100		
Measuring Parameters									
Measuring values	Dust concentration								
Available measuring ranges	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Dust concentration [mg/m ³]	0 ... 20	0 ... 200 ¹⁾	0 ... 10	0 ... 200 ¹⁾	0 ... 5	0 ... 200 ¹⁾	0 ... 5	0 ... 200 ¹⁾	
Inner duct diameter	> 500 mm (> 20 in)				> 200 mm (> 8 in)		0.5 ... 8 m (1.6 ... 26 ft)		
Measurement uncertainty	< ±2%								
Measuring conditions									
Sample gas temperature ²⁾	-25 ... +600 °C (-13 ... 1,112 °F)				-25 ... +400 °C (-13 ... 752 °F)		-25 ... +300 °C (-13 ... 572 °F)		
Inner duct pressure	-50 ... +2 hPa -50 ... +30 hPa with external purge air unit (option)								
Ambient Conditions									
Ambient temperature	-40 ... +60 °C (-40 ... 140 °F) -40 ... +45 °C (-40 ... 113 °F) for MCU control unit with integrated purge air supply								
Approvals									
Conformities	-		<ul style="list-style-type: none"> • U.S. EPA PS1 and PS11 • EN 15267-3, EN 14181 and DIN ISO 14956 • TÜV-tested for equipment subject to authorization (2001/80/EC, 2000/76/EC) and plants of 27th BImSchV (FICA) • MCERTS • GOST in progress 						
Protection class	<ul style="list-style-type: none"> • IP 66 for sender/receiver unit, MCU • IP 54 for external purge air unit 								
Electrical safety	CE								
Control Unit Inputs and Outputs									
Analog outputs ²⁾	1 output: 0/2/4 ... 22 mA, max. load 750 Ω		3 outputs: 0/2/4 ... 22 mA, max. load 750 Ω						
Analog inputs ²⁾	2 inputs: 0 ... 20 mA								
Digital outputs ²⁾	5 outputs: 30 V DC/2 A, 48 V AC/1 A; potential-free Status signals: operation/malfunction, maintenance, function check, service requirement, limit value								
Digital inputs ²⁾	4 inputs for the connection of potential-free contacts								
Interfaces	<ul style="list-style-type: none"> • USB • RS232 (service) 				<ul style="list-style-type: none"> • RS485 by optional interface module • Ethernet by optional interface module 				
Bus protocol	<ul style="list-style-type: none"> • TCP/IP via Ethernet (optional interface module) • PROFIBUS-DP via RS485 (optional interface module) • MODBUS ASCII/RTU via RS 485 								
General									
System components	<ul style="list-style-type: none"> • Sender/receiver unit • MCU-P control unit with integrated purge air • MCU-N control unit with external purge air (option) 				<ul style="list-style-type: none"> • Connection cable • Purge air hose • Flange(s) with tube • Hood for weather protection (option) 				
Operation	Via SOPAS ET software and/or display (option for SB50)								
Check function	Zero and reference point test		<ul style="list-style-type: none"> • Zero and reference point test • Soiling correction 						

¹⁾ More on request

²⁾ Above dew point

³⁾ Extendible by additional I/O modules