

# DUSTHUNTER C

## Transmission and Scattered Light Measuring Device

Continuous measurement of dust for  
very low and high concentrations



**SICK**  
Sensor Intelligence.

# DUSTHUNTER C200

## With two measuring principles prepared for the future

### 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

#### TRANSMISSOMETRY

- For measurement in medium to high dust concentrations
- Automatic zero and reference point measurement
- Soiling measurement and correction on both sides
- Automatic self-alignment of optical axis
- With suitability test

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#### SCATTERED LIGHT MEASUREMENT

- For measurement in very low and medium dust concentrations
- Automatic zero and reference point measurement
- Contamination measurement and correction
- Automatic self-alignment of optical axis
- With suitability test

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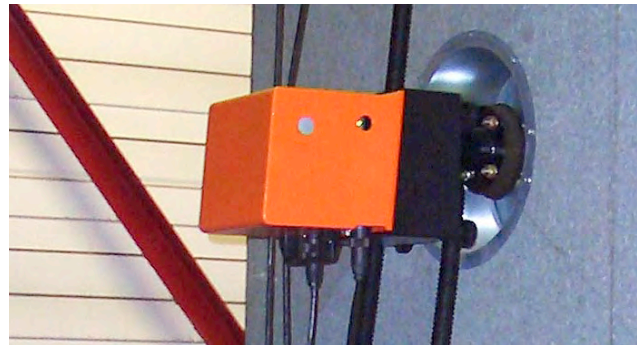
#### DUSTHUNTER C200

- For measurement in very low and high dust concentrations
- Ensures future options
  - For stricter limit values
  - For changing dust concentrations
- Redundant dust measurement
- With suitability test

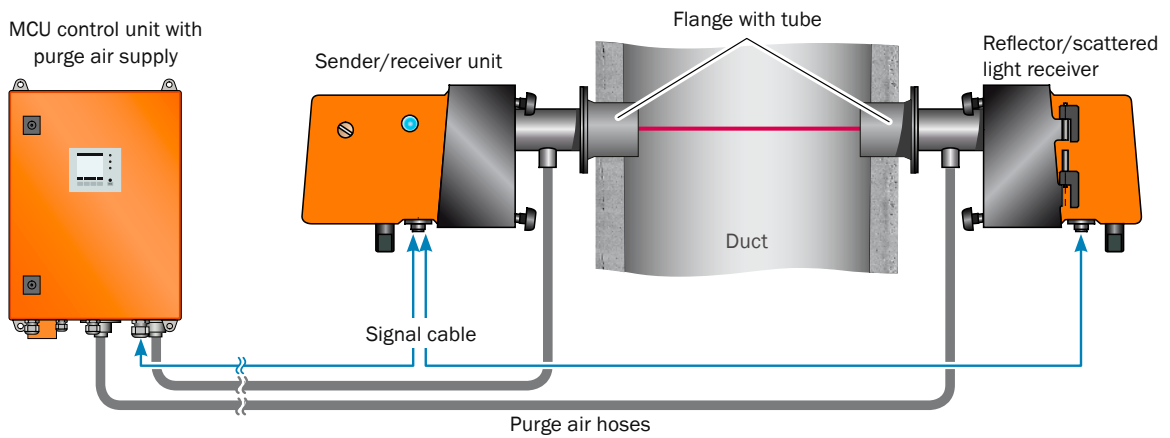
### PERFORMANCE FEATURES

- Combination of both measuring principles
- Reliable application through redundant measuring technology
- Self-monitoring function
- Scattered light measuring principle for very low dust concentrations ( $< 5 \text{ mg/m}^3$ )
- Transmission measuring principle for high dust concentrations ( $< 10,000 \text{ mg/m}^3$ )
- Contamination measurement and correction on both sides
- Long maintenance intervals



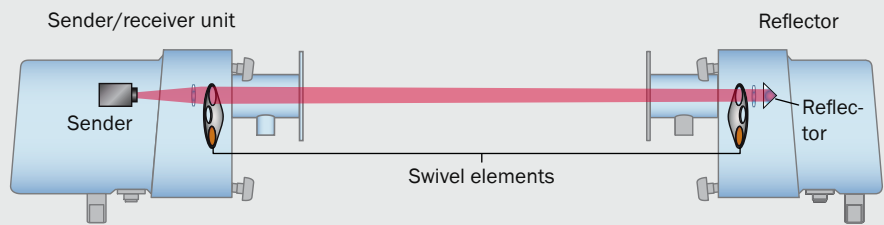


## SYSTEM COMPONENTS

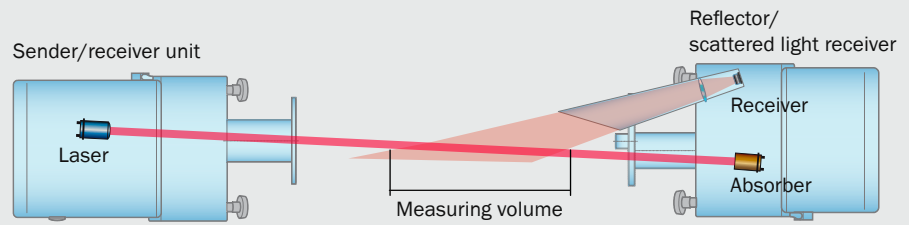


## TWO MEASURING PRINCIPLES IN THE DUSTHUNTER C200

**Transmission measurement**



**Scattered light measurement, forward**



Technical Data		DUSTHUNTER C200 – transmission and scattered light measuring device	
Device models	C200		
<b>Measuring Parameters</b>			
Measuring values	Transmission, opacity, extinction, dust concentration		
Available measuring ranges	Min.	Max.	
• Transmission	100 ... 90 %	100 ... 0 %	
• Opacity	0 ... 10 %	0 ... 100 %	
• Extinction	0 ... 0.045	0 ... 2.0	
• Dust concentration <sup>1)</sup>	Min. 0 ... 5 mg/m <sup>3</sup> , max. 0 ... 200 mg/m <sup>3</sup> , scattered light measurement Min. 0 ... 200 mg/m <sup>3</sup> , max. 0 ... 10.000 mg/m <sup>3</sup> , transmission measurement		
Distance (flange – flange)	0.5 ... 8 m		
Measurement uncertainty	< ±2%		
<b>Measuring Conditions</b>			
Sample gas temperature <sup>2)</sup>	-25 ... +300 °C		
Sample gas pressure	-50 ... +2 hPa -50 ... +30 hPa with external purge air unit option		
<b>Ambient Conditions</b>			
Ambient temperature	-40 ... +60 °C -40 ... +45 °C for MCU control unit with integrated purge air supply		
<b>Approvals</b>			
Conformities	<ul style="list-style-type: none"> <li>• EN 15267-3, EN 14181 and DIN ISO 14956</li> <li>• TÜV-tested for equipment subject to authorization (2001/80/EC, 2000/76/EC) and plants of 27<sup>th</sup> FICA</li> <li>• GOST, MCERTS in preparation</li> <li>• U.S. EPA in preparation</li> </ul>		
Protection class	<ul style="list-style-type: none"> <li>• IP 66 for sender/receiver unit, reflector, MCU</li> <li>• IP 54 for external purge air unit</li> </ul>		
Electrical safety	CE		
<b>Control Unit Inputs and Outputs</b>			
Analog outputs <sup>3)</sup>	3 outputs: 0/2/4 ... 22 mA, max. load 750 Ω		
Analog inputs <sup>3)</sup>	2 inputs: 0 ... 5/10 V or 0 ... 20 mA		
Digital outputs <sup>3)</sup>	5 outputs: 30 V DC/2 A, 120 V AC/1 A; potential-free Status signals: operation/malfunction, maintenance, function check, service requirement, limit value		
Digital inputs <sup>3)</sup>	4 inputs to connect potential-free contacts		
Interfaces	<ul style="list-style-type: none"> <li>• USB</li> <li>• RS232 (service)</li> </ul>	<ul style="list-style-type: none"> <li>• RS485 by optional interface module</li> <li>• Ethernet by optional interface module</li> </ul>	
Bus protocol	<ul style="list-style-type: none"> <li>• TCP/IP via Ethernet (optional interface module)</li> <li>• PROFIBUS-DP via RS485 (optional interface module)</li> </ul>		
<b>General</b>			
System components	<ul style="list-style-type: none"> <li>• Sender/receiver unit</li> <li>• Reflector/scattered light receiver</li> <li>• MCU-P control unit with integrated purge air</li> <li>• MCU-N control unit with ext. purge air (option)</li> </ul>	<ul style="list-style-type: none"> <li>• Connection cable</li> <li>• Purge air hose</li> <li>• Flanges with tube</li> <li>• Hood for weather protection (option)</li> </ul>	
Operation	Via SOPAS ET software and/or display		
Check function	<ul style="list-style-type: none"> <li>• Zero and reference point test</li> <li>• Soiling correction</li> <li>• Automatic self-alignment</li> </ul>		

<sup>1)</sup> Depending on particle size and active measuring path

<sup>2)</sup> Above dew point

<sup>3)</sup> Extendable with additional I/O modules