

DUSTHUNTER T Transmissiometer

Continuous measurement of dust for
medium and high concentrations



SICK
Sensor Intelligence.

DUSTHUNTER T

Modular system in three 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
- Monitoring of the dust load in workshops, control of exhaust air/fresh air systems

DUSTHUNTER T50

- For measurement in medium to high dust concentrations
- Small to medium active measuring paths (0.5 to 8 m)
- Automatic zero and reference point measurement

DUSTHUNTER T100

- For measurement in medium to high dust concentrations
- Small to large active measuring paths (0.5 to 12 m)
- Automatic zero and reference point measurement
- Contamination measurement and correction
- With suitability test

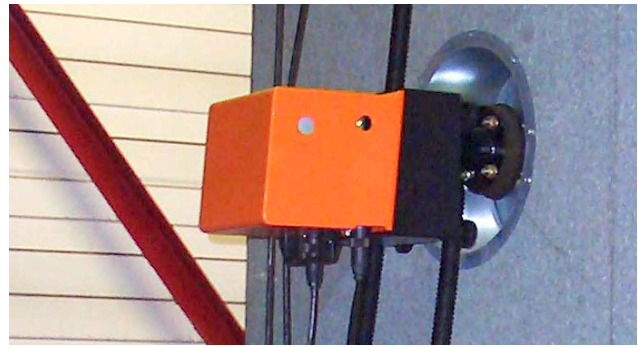
DUSTHUNTER T200

- For measurement in medium to high dust concentrations
- Small to large active measuring paths (0.5 to 12 m)
- Automatic zero and reference point measurement
- Contamination measurement and correction on both sides
- With suitability test
- Automatic self-alignment of optical axis

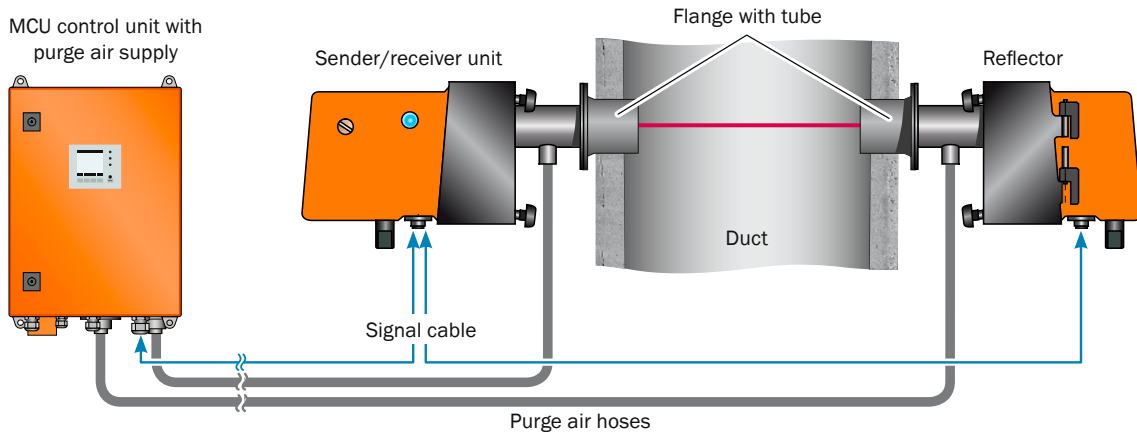
PERFORMANCE FEATURES

- Measurement of dust concentrations irrespective of gas velocity, humidity 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 module



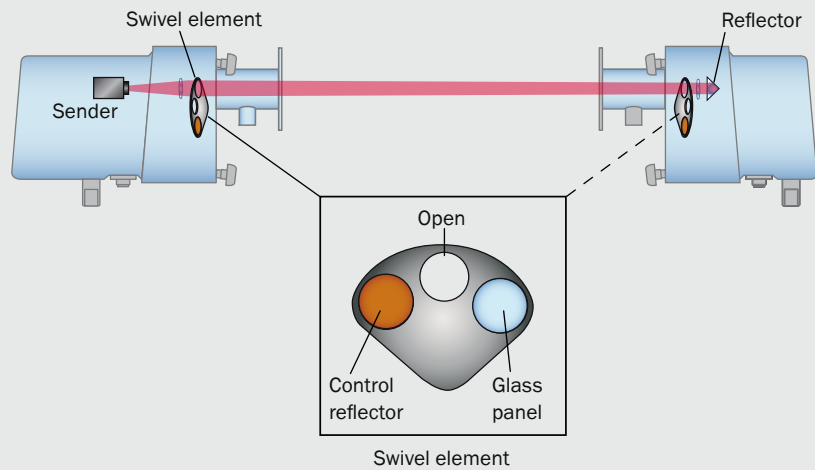


SYSTEM COMPONENTS



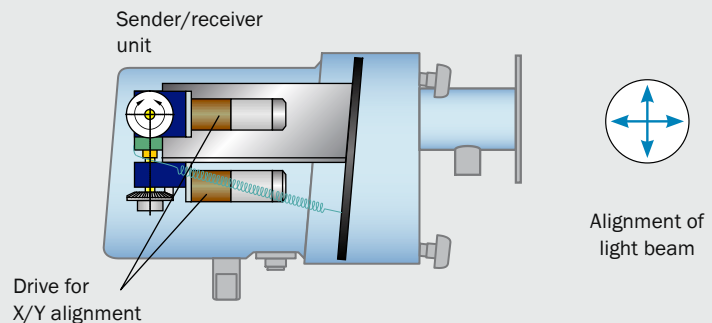
CONTAMINATION MEASUREMENT

Occurred contamination is completely compensated. During measuring operation, a glass pane is positioned in the sender beam. It is swiveled away for soiling measurement. The measured value is compensated with a correction factor. On the T200 version, contamination is determined on both sides and thus the maintenance interval doubled.



AUTOMATIC SELF-ALIGNMENT

The device compensates misadjustments of the optical axis, e.g. caused by distortion of the duct walls due to temperature fluctuations. The motors and the bevel gear move the sender module horizontally and vertically. The alignment of the sender light beam is thus automatically corrected in all directions.



Technical Data		DUSTHUNTER T – Transmissiometer				
Device models	T50	T100		T200		
Measuring Parameters						
Measuring values	Transmission, opacity, extinction, dust concentration					
Available measuring ranges	Min.	Max.	Min.	Max.	Min.	Max.
• Transmission	100 ... 50 %	100 ... 0 %	100 ... 80 %	100 ... 0 %	100 ... 90 %	100 ... 0 %
• Opacity	0 ... 50 %	0 ... 100 %	0 ... 20 %	0 ... 100 %	0 ... 10 %	0 ... 100 %
• Extinction	0 ... 0.3	0 ... 2.0	0 ... 0.1	0 ... 2.0	0 ... 0.045	0 ... 2.0
• Dust concentration ¹⁾	Min. 0 ... 200 mg/m ³ , max. 0 ... 10.000 mg/m ³					
Distance (flange – flange)	0.5 ... 2.5 m/2 ... 5 m/4 ... 8 m		0.5 ... 2.5 m/2 ... 5 m/4 ... 12 m			
Measurement uncertainty	≤ ±2%					
Measuring Conditions						
Sample gas temperature ²⁾	-25 ... +600 °C					
Inner duct pressure	-50 ... +2 hPa -50 ... +30 hPa with external purge air unit option					
Ambient Conditions						
Ambient temperature	-40 ... +60 °C -40 ... +45 °C for MCU control unit with integrated purge air supply					
Approvals						
Conformities	-		<ul style="list-style-type: none"> • 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) • GOST and MCERTS in preparation • U.S. EPA in preparation 			
Protection class	<ul style="list-style-type: none"> • IP 66 for sender/receiver unit, reflector, MCU • IP 54 for external purge air unit 					
Electrical safety	CE					
Control Unit Inputs and Outputs						
Analog outputs ³⁾	1 output: 0/2/4 ... 22 mA, max. load 750 Ω		3 outputs: 0/2/4 ... 22 mA, max. load 750 Ω			
Analog inputs ³⁾	-					
Digital outputs ³⁾	3 outputs: 30 V DC/2 A, 120 V AC/1 A; potential-free Status signals: operation/malfunction, maintenance, limit value		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 ³⁾	2 inputs to connect potential-free contacts		4 inputs to connect 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) 					
General						
System components	<ul style="list-style-type: none"> • Sender/receiver unit • Reflector • MCU-P control unit with integrated purge air • MCU-N control unit with ext. purge air (option) 		<ul style="list-style-type: none"> • Connection cable • Purge air hose • Flanges with tube • Hood for weather protection (option) 			
Operation	Via SOPAS ET software and/or display (option for T50)					
Check function	Zero and reference point test		<ul style="list-style-type: none"> • Zero + reference point test • Soiling correction 		<ul style="list-style-type: none"> • Zero + reference point test • Soiling correction • Automatic self-alignment 	

¹⁾ Depending on particle size and active measuring path

²⁾ Above dew point

³⁾ Extendable with additional I/O modules