



DUSTHUNTER T50

TRANSMITTANCE DUST MEASURING DEVICES

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
DUSTHUNTER T50	On request

The exact device specifications and performance data of the product may deviate from the information provided here, and depend on the application in which the product is being used and the relevant customer specifications.

Our regional sales organization will help you to select the optimum device configuration.

Other models and accessories → www.sick.com/DUSTHUNTER_T50

Product description

The DUSTHUNTER T50 is an economic measuring device for dust at medium to high concentrations in gases above the dew point. Transmittance is the basic measuring value. Opacity and extinction can be calculated and displayed as well as the dust concentration after gravimetric calibration.

At a glance

- For medium to high dust concentrations
- Automated thorough check of zero and reference point
- For low to medium measuring distances

Your benefits

- Easy installation, commissioning, and operation
- Measurement not dependent on gas velocity, humidity, or particle load
- Self-monitoring for low maintenance



Fields of application

- Emission monitoring in heating systems
- Monitoring of dust concentrations upstream of filter systems
- Dust concentration measurements in cement plants

Detailed technical data

DUSTHUNTER T50 system

Measured values	Transmittance, opacity, relative opacity, extinction, dust concentration
Measurement principles	Transmittance measurement
Spectral range	450 nm ... 700 nm
Measuring ranges	<p>Transmittance 100 ... 50 % / 100 ... 0 %</p> <p>Opacity 0 ... 50 % / 0 ... 100 %</p> <p>Relative opacity 0 ... 50 % / 0 ... 100 %</p> <p>Extinction 0 ... 0.3 / 0 ... 1</p> <p>Dust concentration 0 ... 200 mg/m³ / 0 ... 10,000 mg/m³</p> <p>The measurement depends on measuring distance and dust properties</p>
Response time (t₉₀)	1 s ... 600 s Freely adjustable
Accuracy	± 2 %
Process temperature	-40 °C ... +600 °C
Process pressure	With MCU-P control unit: -50 hPa ... 2 hPa With external purge air unit: -50 hPa ... 30 hPa
Process gas humidity	Non-condensing
Duct diameter	0.5 m ... 2.5 m 2 m ... 5 m 4 m ... 8 m
Electrical safety	CE
Test functions	Automatic self-test (linearity, drift, aging) Manual linearity test with reference filter
Options	External purge air unit

DHT-T00 sender/receiver unit

Description	Cross-duct measurement system analyzer unit
Ambient temperature	-40 °C ... +60 °C
Enclosure rating	IP 66
Dimensions (W x H x D)	198 mm x 216 mm x 398 mm (for details see dimensional drawings)
Weight	≤ 5 kg
Power supply	<p>Voltage 24 V</p> <p>Supply via control unit</p> <p>Power consumption ≤ 15 W</p>

DHT-R5x reflector unit

Description	Reflector unit with triple reflector
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Enclosure rating	IP 66
Dimensions (W x H x D)	126 mm x 131 mm x 139 mm (for details see dimensional drawings)
Weight	DHT-R50, DHT-R51: ≤ 1 kg

MCU-N control unit

Description	Unit to control the system components and to evaluate and output the data provided by them	
Ambient temperature	-40 °C ... +60 °C	
Enclosure rating	IP 66	
Analog outputs	1 output: 0/2/4 ... 20 mA, 750 Ω Electrically isolated; two additional outputs if using I/O modules (option)	
Analog inputs	2 inputs: 0 ... 20 mA Not electrically isolated; two additional inputs if using I/O modules (option)	
Digital outputs	5 relay contacts: V 48 V, 1 A Potential-free; for status signals	
Digital inputs	4 potential-free contacts	
Interfaces and bus protocols	Ethernet	Modbus TCP (via optional interface module)
	Ethernet	OPC (via optional interface module)
	Ethernet	SOPAS ET (via optional interface module)
	RS-485	Modbus RTU (via optional interface module)
	RS-485	PROFIBUS DP (via optional interface module)
	RS-485	SOPAS ET (via optional interface module)
	USB	SOPAS ET
Indication	LC display (option) Status LEDs: "Power", "Maintenance" and "Failure"	
Operation	Via LC-display (option) or software SOPAS ET	
Dimensions (W x H x D)	210 mm x 340 mm x 120 mm	
Weight	≤ 3.7 kg	
Power supply	Voltage	90 ... 250 V Version with 24 V DC available as an option
	Frequency	47 ... 63 Hz
	Power consumption	≤ 15 W
Options	Interface module(s) I/O module(s)	

MCU-P control unit

Description	Unit to control the system components and to evaluate and output the data provided by them. With integrated purge air unit.	
Gas flow rate	≤ 20 m³/h	
Ambient temperature	-40 °C ... +45 °C Intake temperatures for purge air	
Enclosure rating	IP 66	
Analog outputs	1 output: 0/2/4 ... 20 mA, 750 Ω	

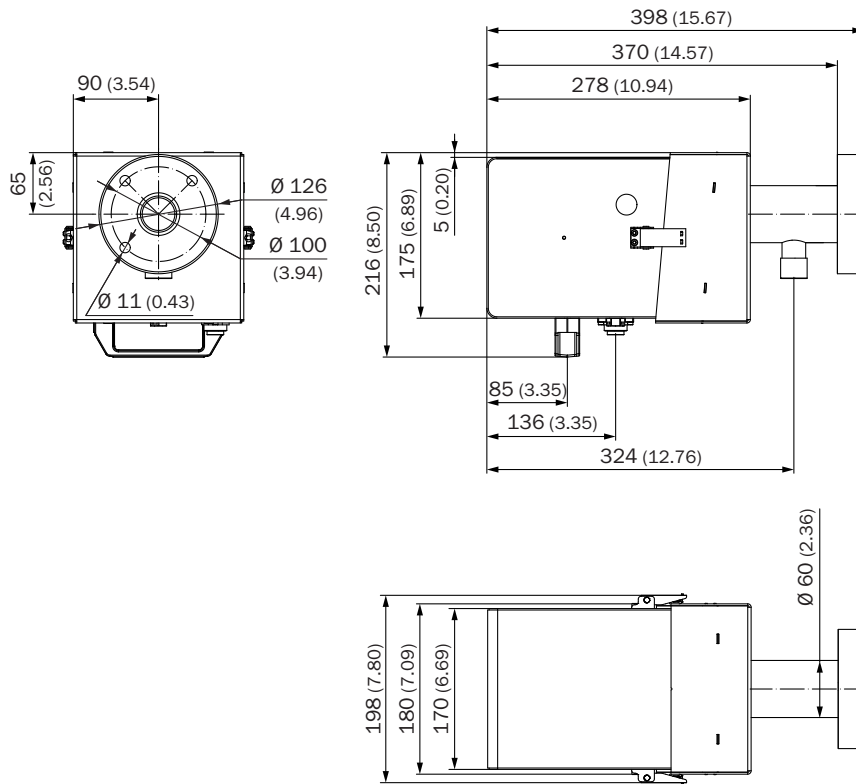
	Electrically isolated; two additional outputs if using I/O modules (option)														
Analog inputs	2 inputs: 0 ... 20 mA Not electrically isolated; two additional inputs if using I/O modules (option)														
Digital outputs	5 relay contacts: 48 V, 1 A Potential-free; for status signals														
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Indication	LC display (option) Status LEDs: "Power", "Maintenance" and "Failure"														
Operation	Via LC-display (option) or software SOPAS ET														
Dimensions (W x H x D)	300 mm x 455 mm x 220 mm														
Weight	≤ 13.5 kg														
Power supply	<table border="0"> <tr> <td>Voltage</td> <td>90 ... 250 V Version with 24 V DC available as an option</td> </tr> <tr> <td>Frequency</td> <td>47 ... 63 Hz</td> </tr> <tr> <td>Power consumption</td> <td>≤ 70 W</td> </tr> </table>	Voltage	90 ... 250 V Version with 24 V DC available as an option	Frequency	47 ... 63 Hz	Power consumption	≤ 70 W								
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Auxiliary gas connections	Purge air														
Options	Interface module(s) I/O module(s)														

SLV4-2 purge air unit, 2BH1300, 3-ph

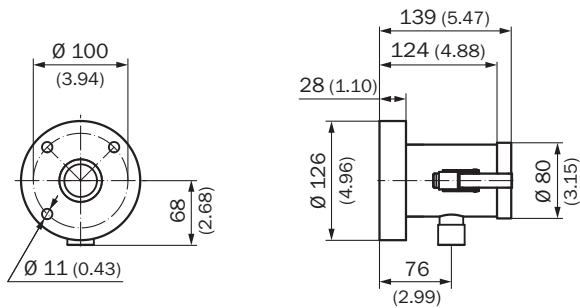
Description	Unit to provide dust-free air for flushing of optical surfaces		
Gas flow rate	38 m³/h ... 63 m³/h At 30 hPa counter pressure, depending on low pressure inside the filter		
Ambient temperature	-20 °C ... +40 °C		
Enclosure rating	IP 54		
Dimensions (W x H x D)	550 mm x 550 mm x 258 mm (for details see dimensional drawings)		
Weight	18 kg		
Power supply	<table border="0"> <tr> <td>Three-phase current</td> <td>3-phase, Δ: 200 ... 240 V, 50 Hz, 2.6 A, 350 W 3-phase, Δ: 220 ... 275 V, 60 Hz, 2.3 A, 450 W 3-phase, Y: 345 ... 415 V, 50 Hz, 1.5 A, 350 W 3-phase, Y: 380 ... 480 V, 60 Hz, 1.3 A, 450 W</td> </tr> </table>	Three-phase current	3-phase, Δ: 200 ... 240 V, 50 Hz, 2.6 A, 350 W 3-phase, Δ: 220 ... 275 V, 60 Hz, 2.3 A, 450 W 3-phase, Y: 345 ... 415 V, 50 Hz, 1.5 A, 350 W 3-phase, Y: 380 ... 480 V, 60 Hz, 1.3 A, 450 W
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Auxiliary gas connections	Purge air: 40 mm		
Test functions	Pressure switch (switching point -35 hPa)		
Integrated components	2-step air filter, type Europiclön, dust capacity 200 g		

Dimensional drawings (Dimensions in mm (inch))

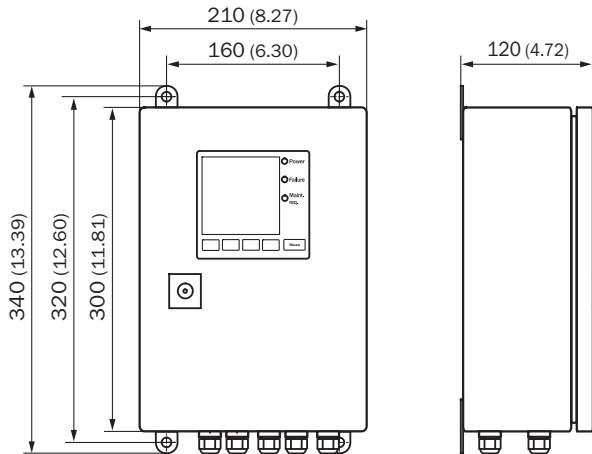
DHT-T00 sender/receiver unit



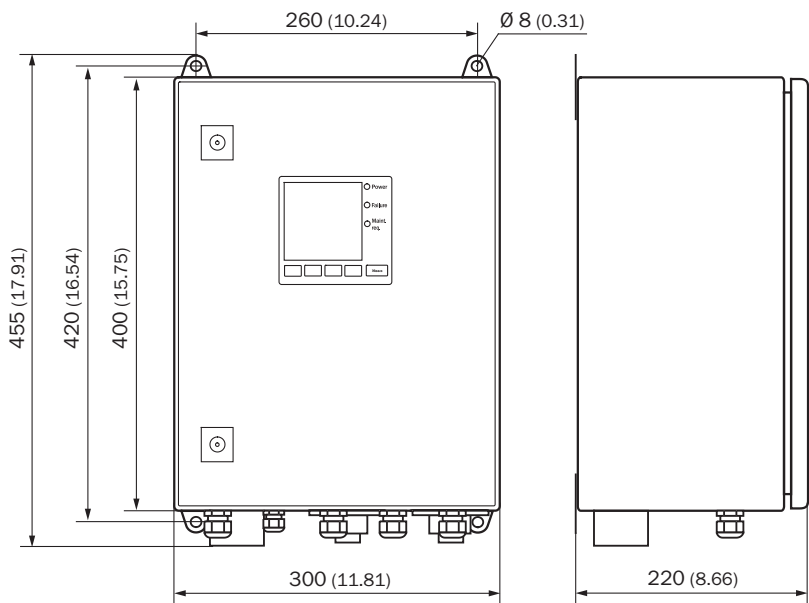
DHT-R5x reflector unit



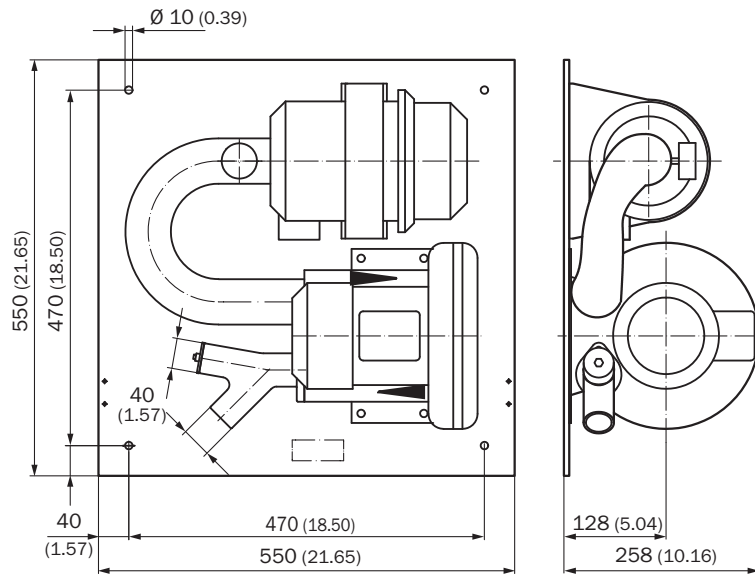
MCU-N control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



MCU-P control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



SLV4-2 purge air unit, 2BH1300



SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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