Online data sheet

DUSTHUNTER T200

TRANSMITTANCE DUST MEASURING DEVICES

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
DUSTHUNTER T200	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_T200

Product description

The DUSTHUNTER T200 is a measuring device for dust at medium to high concentrations. Basic measuring value is transmittance. Opacity and extinction can be calculated and displayed as well as the dust concentration after gravimetric calibration. Furthermore, it has an integrated contamination check of the sender/receiver and reflector unit as well as an automatic self-alignment of the optical assembly. The DUSTHUNTER T200 is approved according to EN 15267.

At a glance

- Integrated contamination check for sender/receiver and reflector unit
- Automatic self-alignment of the optical assembly
- Automatic check of zero and reference point
- For medium to high dust concentrations
- For small to large measuring distances

Your benefits

- Easy installation, commissioning and operation
- Measurement independent of gas velocity, humidity and particle charge
- Low maintenance due to self-monitoring and contamination check
- Approved according to EN 15267

Fields of application

- Emissions monitoring at power plants and waste incineration plants
- Monitoring of filter systems
- Monitoring of dust load in factory halls
- Control of fresh air and exhaust air units

Detailed technical data

DUSTHUNTER T200 system

Measured values	Transmittance, opacity, relative opacity, extinction, dust concentration
Performance-tested measurands	Dust concentration
Measurement principles	Transmittance measurement
Spectral range	450 nm ... 700 nm
Length of measuring path	0.5 m ... 2.5 m 2 m ... 5 m 4 m ... 12 m
Measuring ranges	
Transmittance	100 ... 90 % / 100 ... 0 %
Opacity	0 ... 10 % / 0 ... 100 %
Relative opacity	0 ... 10 % / 0 ... 100 %
Extinction	0 ... 0.045 / 0 ... 2
Dust concentration	0 ... 200 mg/m³ / 0 ... 10,000 mg/m³
	The measurement depends on measuring distance and dust properties
Certified measuring ranges	
Dust concentration (transmittance)	0 ... 0.1 Ext / 0 ... 0.05 Ext / 0 ... 0.2 Ext / 0 ... 0.5 Ext / 0 ... 1 Ext
Response time (t_{90})	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 ... 12 m
Conformities	Approved for plants requiring approval 2001/80/EC (13. BImSchV) 2000/76/EC (17. BImSchV) 27.BImSchV TA-Luft (Prevention of Air Pollution) EN 15267 EN 14181 MCERTS 2010/75/EU U.S. EPA PS-1 compliant
Electrical safety	CE
Corrective functions	Automatic self-alignment
Test functions	Automatic self-test (linearity, contamination, drift, aging) Contamination limits: at 30% warning, at 40% failure

	Manual linearity test with reference filter
Options	External purge air unit

DHT-T10 and DHT-T21 sender/receiver unit

Description	Analyzer unit of the cross-duct measuring system
Ambient temperature	–40 °C ... +60 °C
Enclosure rating	IP 66
Dimensions (W x H x D)	212 mm x 241 mm x 429 mm (for details see dimensional drawings)
Weight	≤ 10 kg
Power supply	
Voltage	24 V
	Supply via control unit
Power consumption	≤ 15 W

DHT-R0x and DHT-R1x reflector unit

Description	Reflector unit with triple reflector
Enclosure rating	IP 66
Dimensions (W x H x D)	212 mm x 241 mm x 364 mm (for details see dimensional drawings)
Weight	DHT-R10, DHT-R11, DHT-R12: ≤ 5 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	3 outputs: 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
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 Status LEDs: "Power", "Maintenance" and "Failure"
Operation	Via LC-display 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

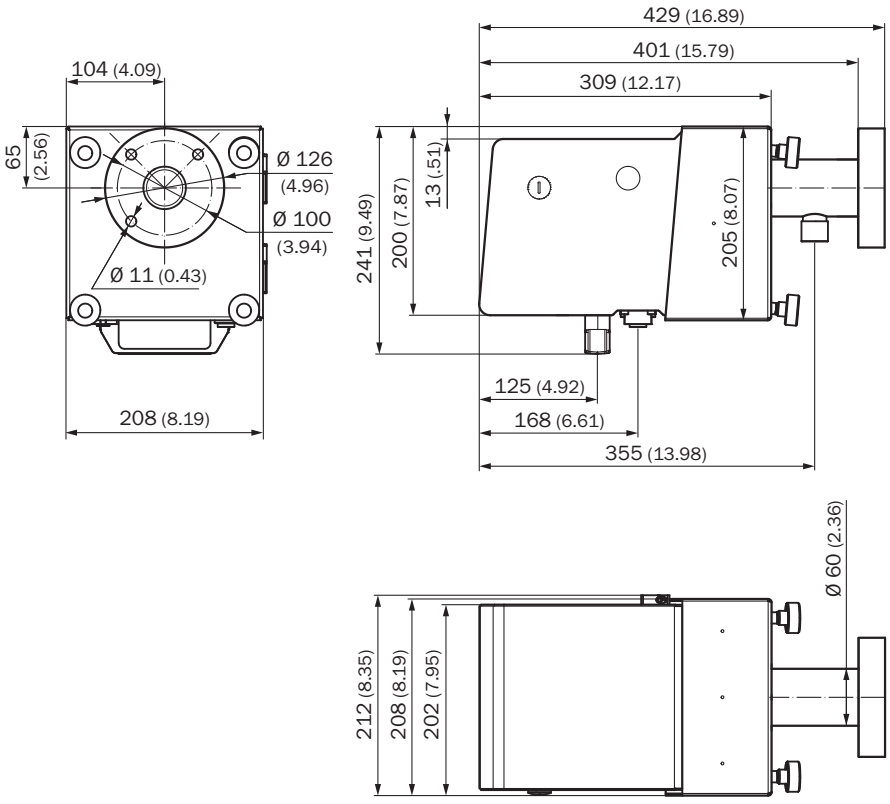
Description	Unit to control the system components and to evaluate and output the data provided by them. With integrated purge air unit.
Gas flow rate	≤ 20 m³/h
Ambient temperature	–40 °C ... +45 °C Intake temperatures for purge air
Enclosure rating	IP 66
Analog outputs	3 outputs: 0/2/4 ... 20 mA, 750 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
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 Status LEDs: "Power", "Maintenance" and "Failure"
Operation	Via LC-display or software SOPAS ET
Dimensions (W x H x D)	300 mm x 455 mm x 220 mm
Weight	≤ 13.5 kg
Power supply	
Voltage	90 ... 250 V
	Version with 24 V DC available as an option
Frequency	47 ... 63 Hz
Power consumption	≤ 70 W
Auxiliary gas connections	Purge air
Options	Interface module(s) I/O module(s)

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

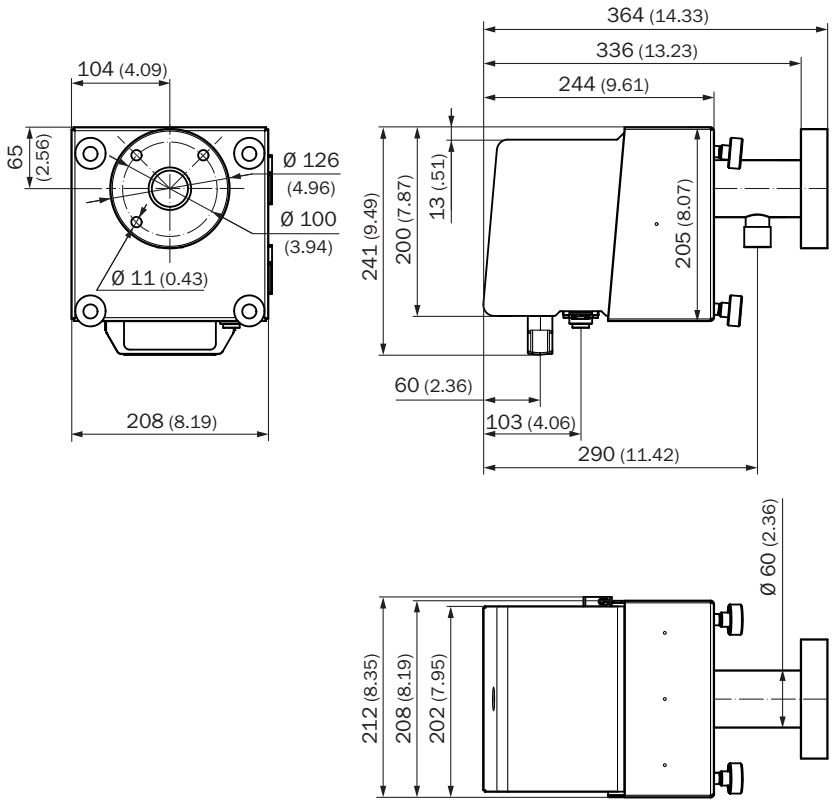
Description	Unit to provide dust-free air for flushing of optical surfaces
Gas flow rate	38 m³/h ... 63 m³/h At 30 hPa counter pressure, depending on low pressure inside the filter
Ambient temperature	–20 °C ... +40 °C
Enclosure rating	IP 54
Dimensions (W x H x D)	550 mm x 550 mm x 258 mm (for details see dimensional drawings)
Weight	18 kg
Power supply	
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
Auxiliary gas connections	Purge air: 40 mm
Test functions	Pressure switch (switching point –35 hPa)
Integrated components	2-step air filter, type Europiclon, dust capacity 200 g

Dimensional drawings (Dimensions in mm (inch))

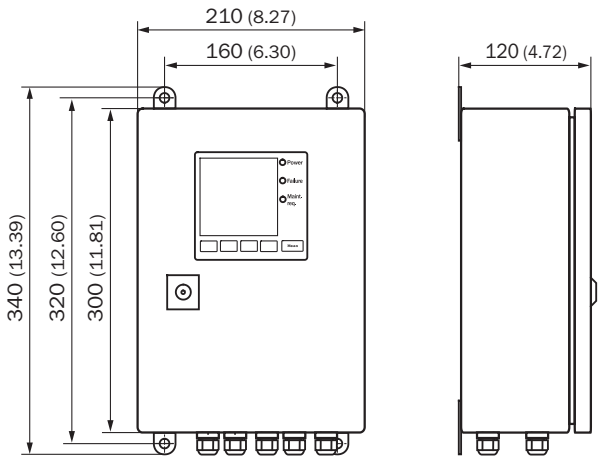
DHT-T21 sender/receiver unit



DHT-R1x reflector unit



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



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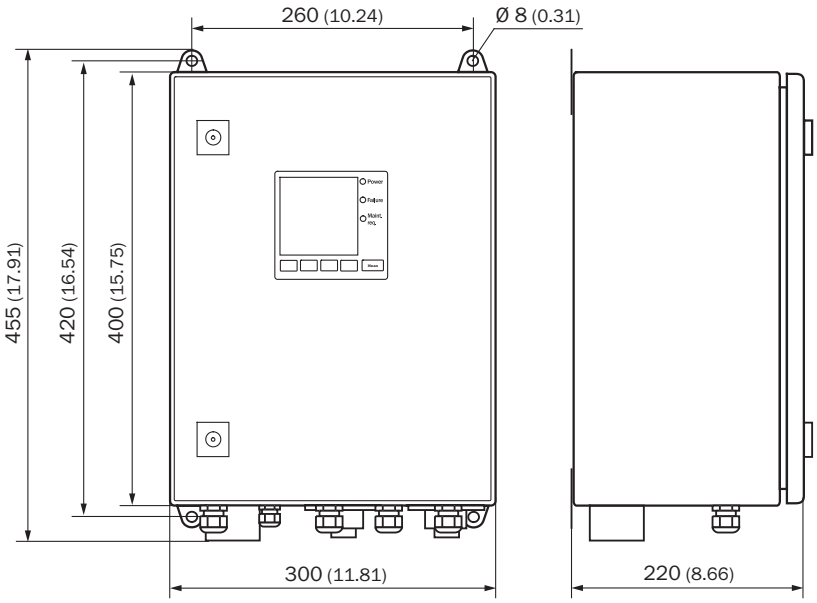
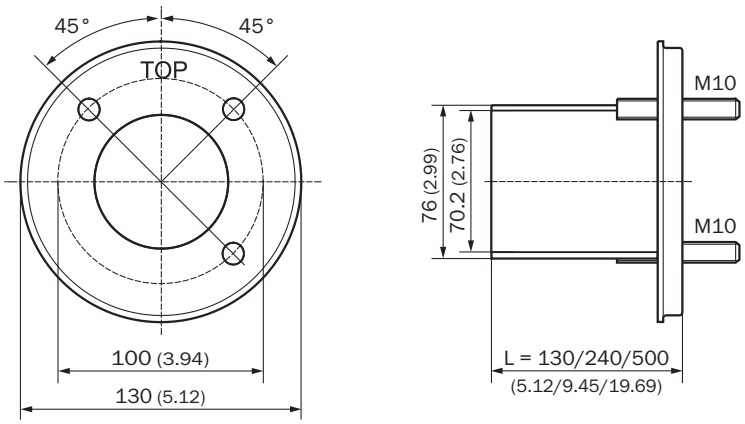
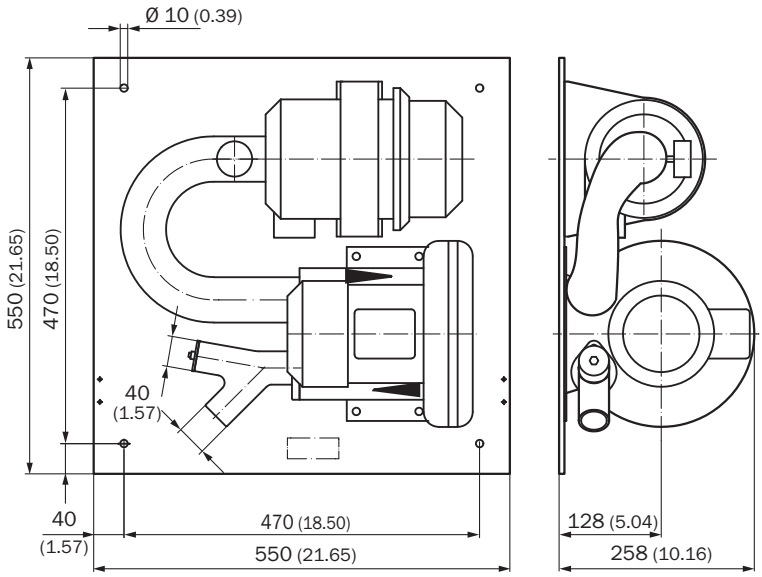


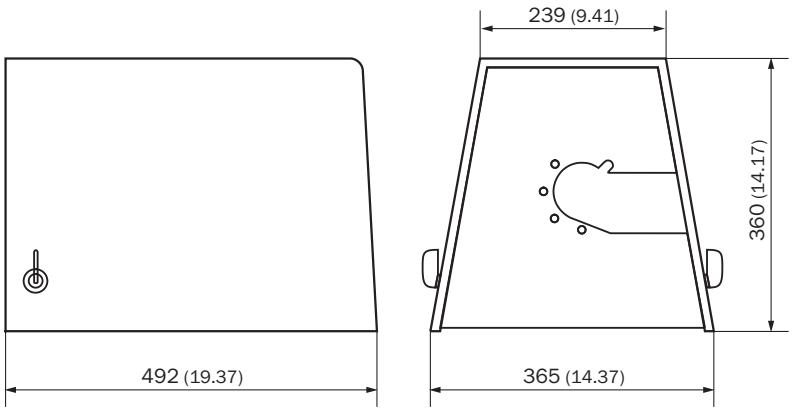
Mounting flange, D_i=70.2 mm



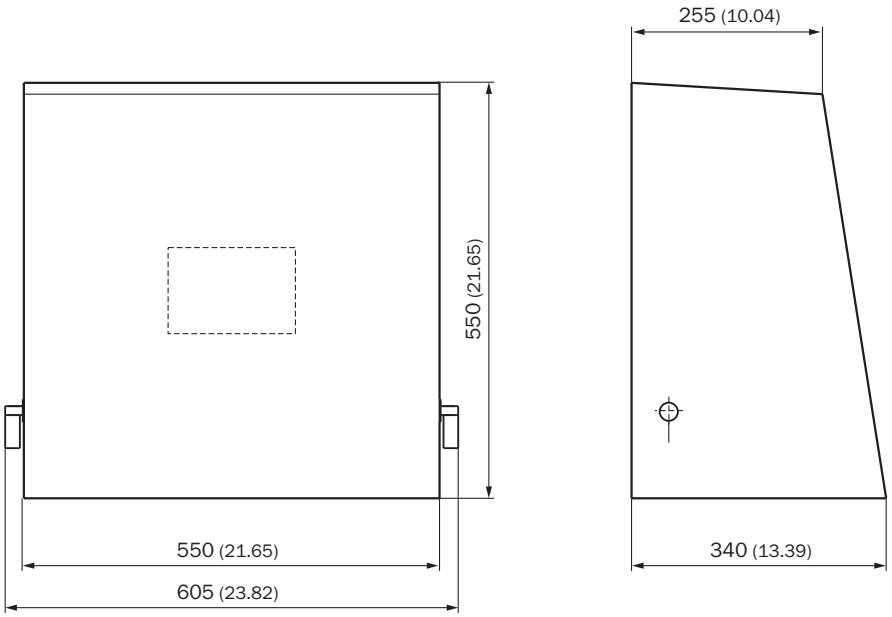
SLV4-2 purge air unit, 2BH1300



Weather protection cover for sender/receiver unit



Weather hood for SLV4/SLV5/SLV7 purge air unit



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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