Online data sheet

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

CE

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	
Transmittance	100 ... 50 % / 100 ... 0 %
Opacity	0 ... 50 % / 0 ... 100 %
Relative opacity	0 ... 50 % / 0 ... 100 %
Extinction	0 ... 0.3 / 0 ... 1
Dust concentration	0 ... 200 mg/m³ / 0 ... 10,000 mg/m³
	The measurement depends on measuring distance and dust properties
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 ... 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	Analyzer unit of the cross-duct measuring system
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	
Voltage	24 V
	Supply via control unit
Power consumption	≤ 15 W

DHT-R5x reflector unit

Description	Reflector unit with triple reflector

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: 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

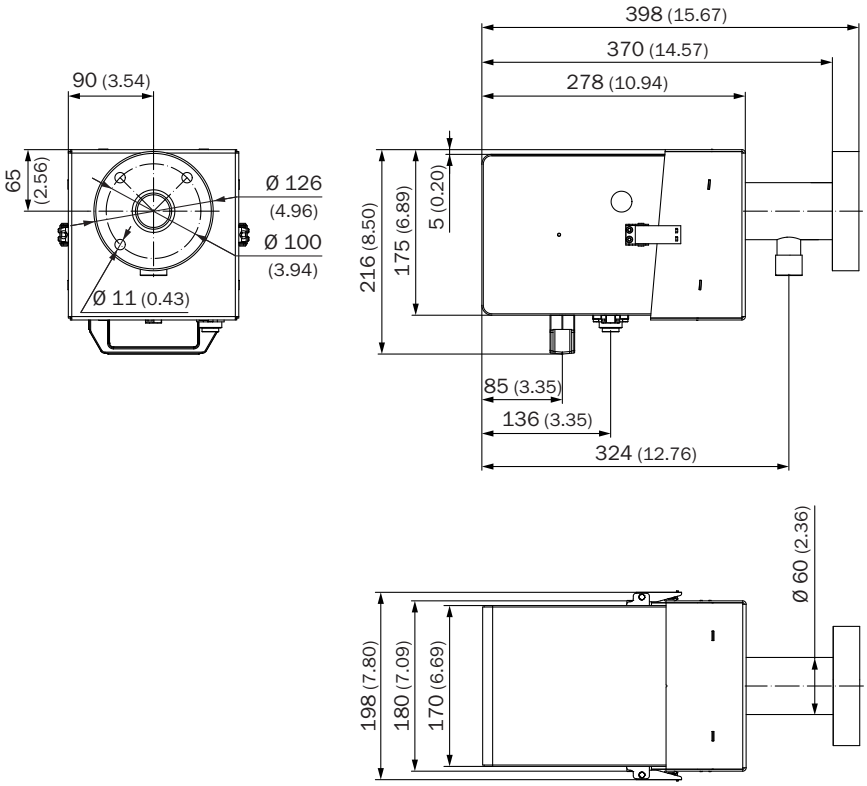
Analog outputs	1 output: 0/2/4 ... 20 mA, 750 Ω Electrically isolated; two additional outputs if using I/O modules (option)
Analog inputs	2 inputs: 0 ... 20 mA Not electrically isolated; two additional inputs if using I/O modules (option)
Digital outputs	5 relay contacts: 48 V, 1 A Potential-free; for status signals
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)	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

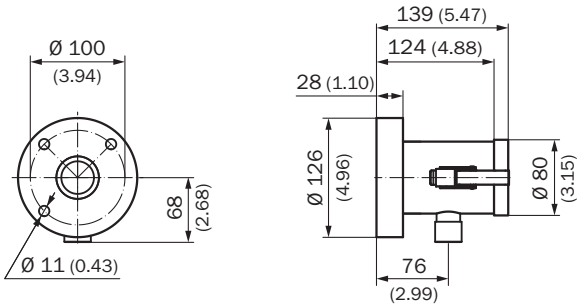
Description	Unit to provide dust-free air for flushing of optical surfaces
Gas flow rate	38 m³/h ... 63 m³/h At 30 hPa counter pressure, depending on low pressure inside the filter
Ambient temperature	–20 °C ... +40 °C
Enclosure rating	IP 54
Dimensions (W x H x D)	550 mm x 550 mm x 258 mm (for details 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))

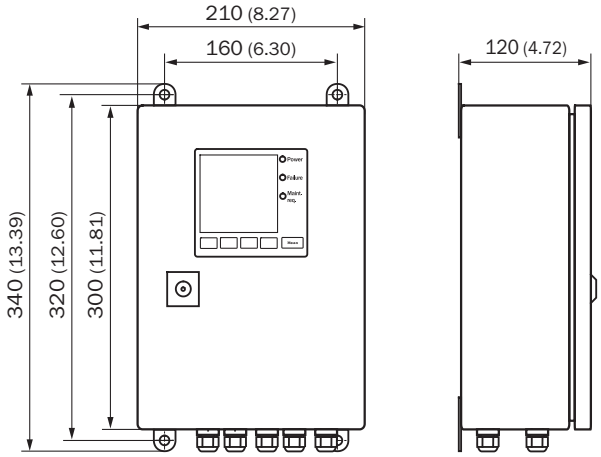
DHT-T00 sender/receiver unit



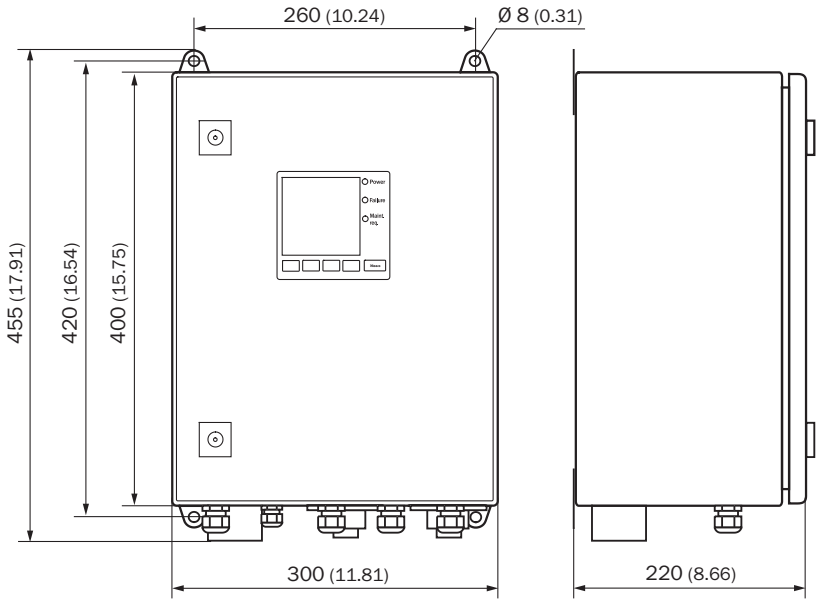
DHT-R5x reflector unit



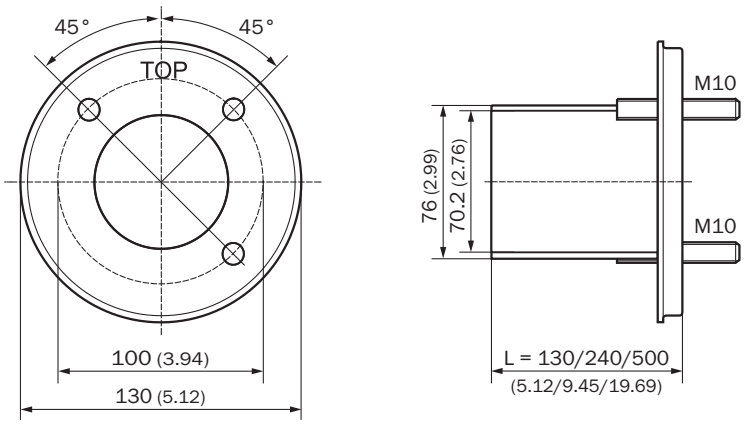
MCU-N control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



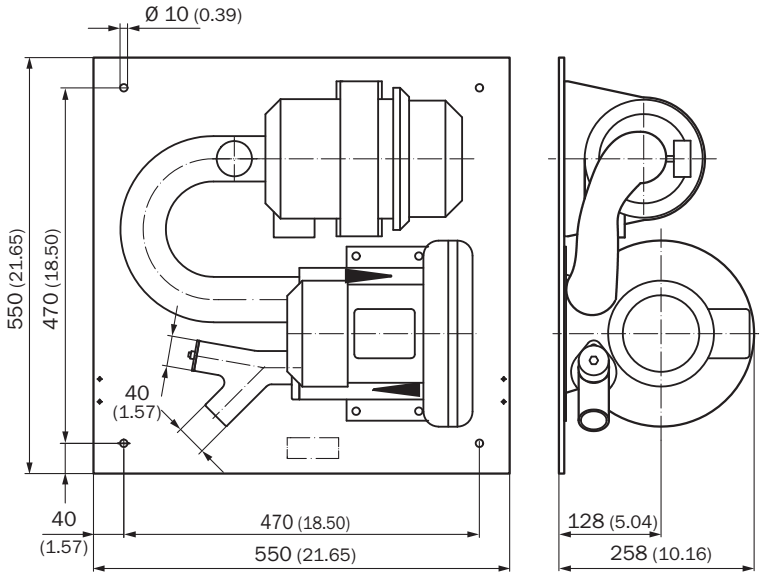
MCU-P control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



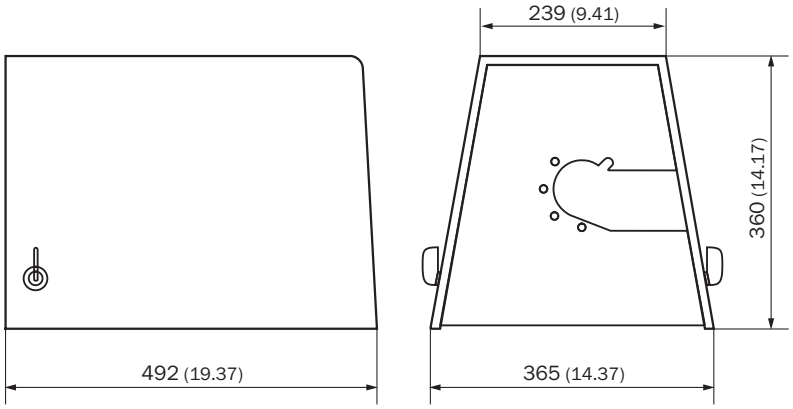
Mounting flange, D_i=70.2 mm



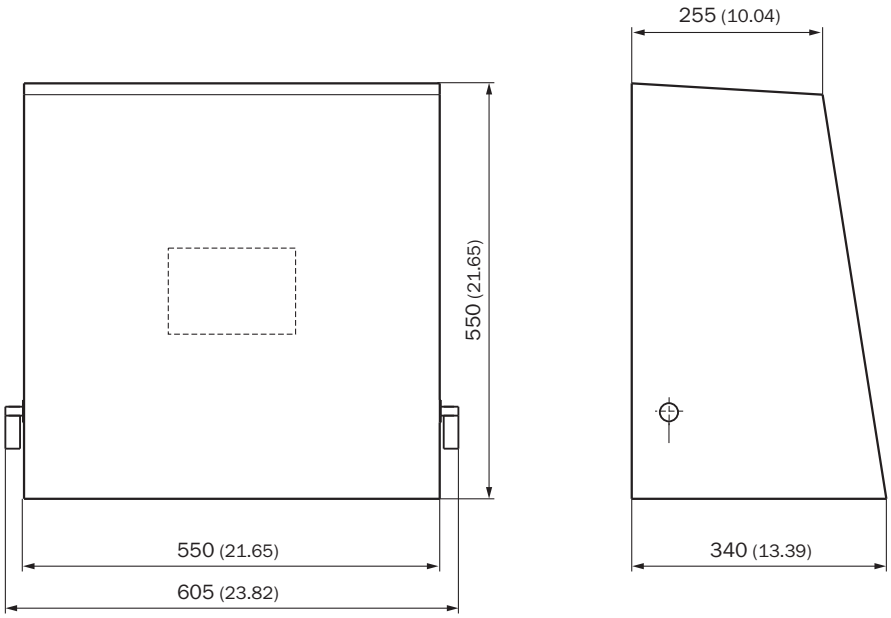
SLV4-2 purge air unit, 2BH1300



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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com