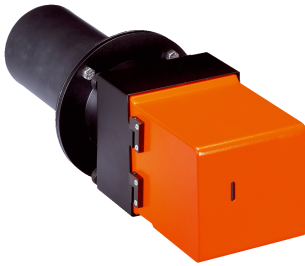




DUSTHUNTER SB50

SCATTERED LIGHT DUST MEASURING DEVICES

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
DUSTHUNTER SB50	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_SB50

Product description

The DUSTHUNTER SB50 is a measuring device for dust at low to medium concentrations in challenging applications, e. g., in hot or corrosive gases. The measurement is based on the backward scattering of light. Installation is from one side only. Two different penetration depths are possible. Automatic compensation of background radiation, therefore no light absorber required.

At a glance

- For low to medium dust concentrations
- One-sided installation
- Automated thorough check of zero and reference point
- Automated compensation of background radiation, therefore no light absorber required
- For medium to large duct diameters

Your benefits

- Easy installation, commissioning and operation
- Measurement independent of gas velocity, humidity and particle charge
- Low maintenance due to self-monitoring



Fields of application

- Emission monitoring of heating installations
- Monitoring of dust concentrations downstream of filter plants
- Dust concentration measurement in cement plants

Detailed technical data

DUSTHUNTER SB50 system

Measured values	Scattered light intensity, dust concentration (after gravimetric comparison measurement)
Measurement principles	Scattered light backward
Spectral range	640 nm ... 660 nm Laser, protection class 2, power < 1 mW
Measuring ranges	Dust concentration 0 ... 20 mg/m ³ / 0 ... 200 mg/m ³ Higher measuring ranges on request
Response time (t₉₀)	1 s ... 600 s Freely adjustable
Accuracy	± 2 % Of measuring range full scale
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	≥ 500 mm
Electrical safety	CE
Test functions	Automatic self-test (linearity, drift, aging) Manual linearity test with reference filter

DHSB-T00/-T01 sender/receiver unit

Ambient temperature	-40 °C ... +60 °C
Enclosure rating	IP 66
Dimensions (W x H x D)	265 mm x 274 mm x 691 mm (for details see dimensional drawings)
Weight	≤ 9 kg
Power supply	Voltage 24 V Supply via control unit
	Power consumption ≤ 4 W

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)

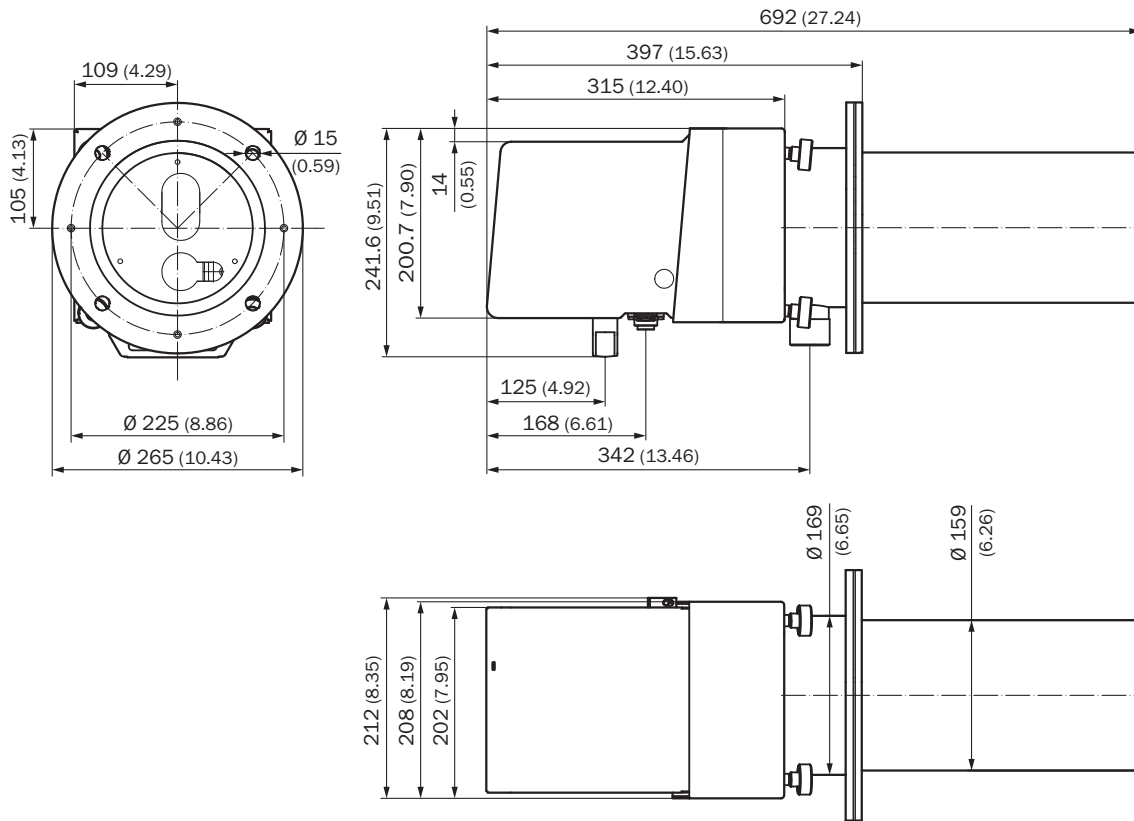
	RS-485	Modbus RTU (via optional interface module)
	RS-485	PROFIBUS DP (via optional interface module)
	RS-485	SOPAS ET (via optional interface module)
	USB	SOPAS ET
Indication		LC display (option) Status LEDs: "Power", "Maintenance" and "Failure"
Operation		Via LC-display (option) or software SOPAS ET
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

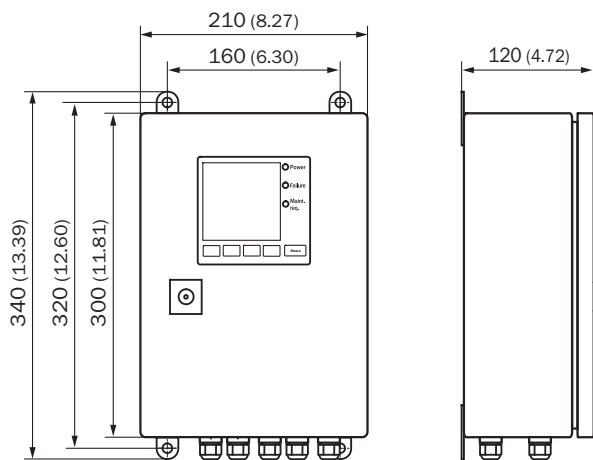
Description	Unit to provide dust-free air for flushing of optical surfaces
Gas flow rate	38 m ³ /h ... 63 m ³ /h At 30 hPa counter pressure, depending on low pressure inside the filter
Ambient temperature	-20 °C ... +40 °C
Enclosure rating	IP 54
Dimensions (W x H x D)	550 mm x 550 mm x 258 mm (for details 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 Europiclone, dust capacity 200 g

Dimensional drawings (Dimensions in mm (inch))

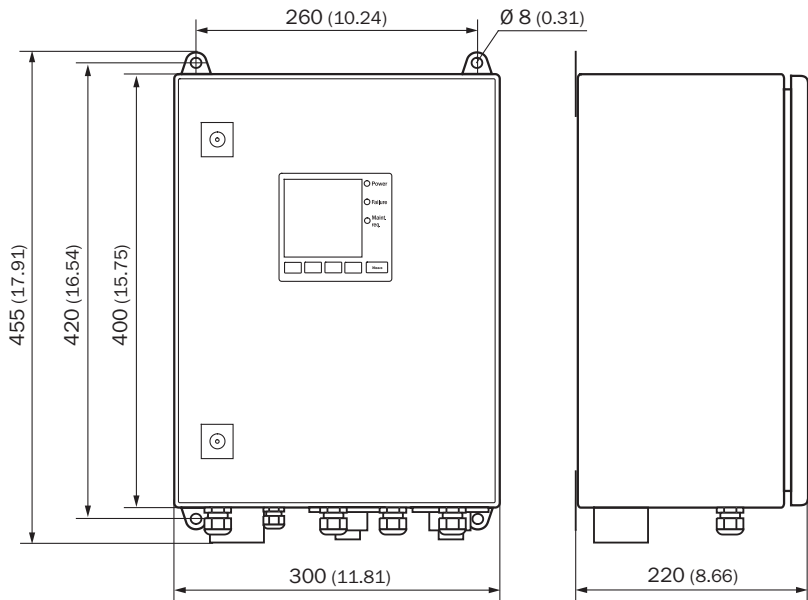
DHSB-T00/-T01 sender/receiver unit



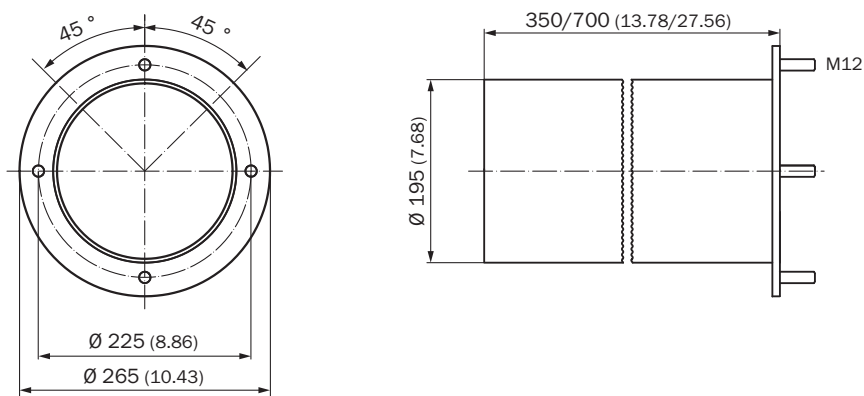
MCU-N control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



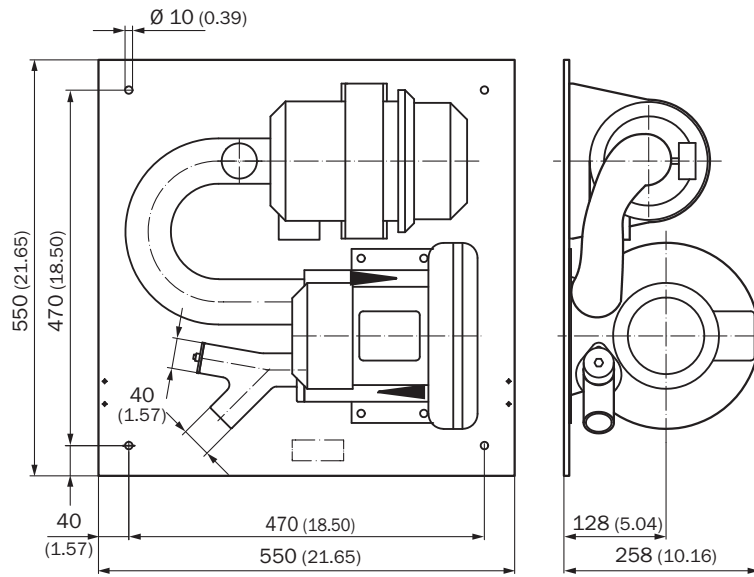
MCU-P control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



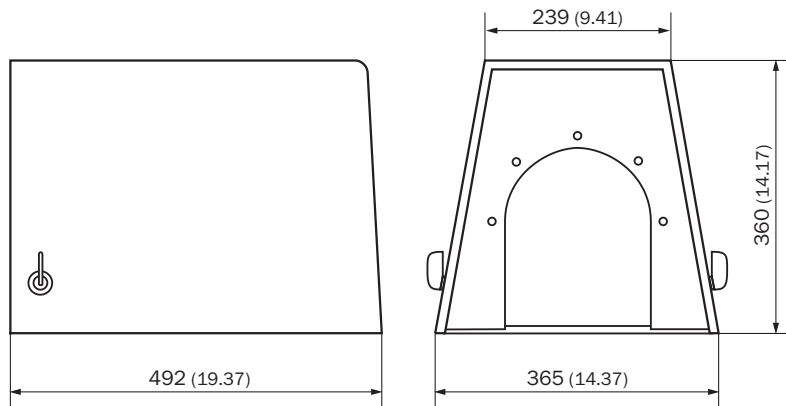
Mounting flange, $D_1=195$ mm



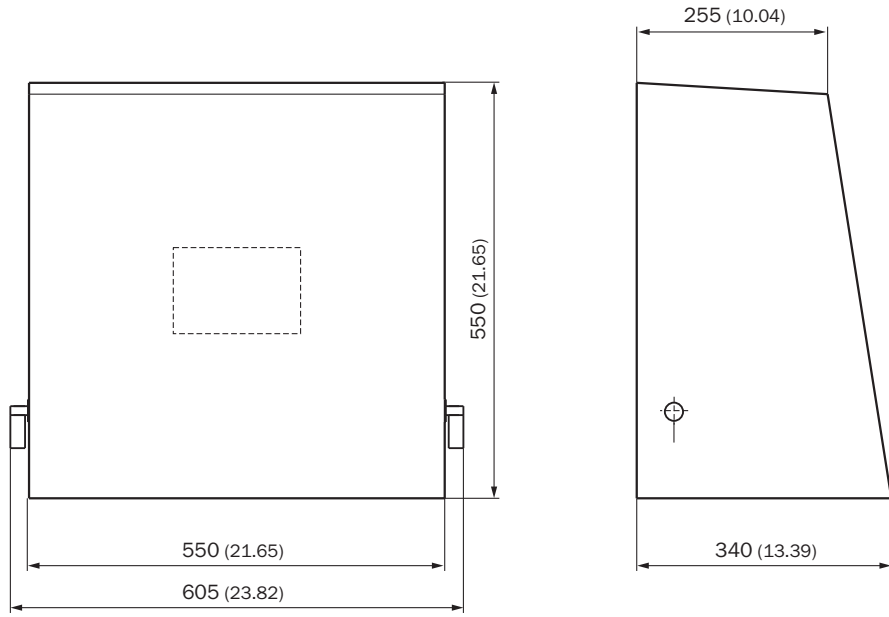
SLV4-2 purge air unit, 2BH1300



Weather hood for DHSB/DHSF-R1/DHC-R1



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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