



DUSTHUNTER SP100

SCATTERED LIGHT DUST MEASURING DEVICES

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
DUSTHUNTER SP100	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_SP100

Product description

The DUSTHUNTER SP100 is a type-approved measuring device with probe for very low to medium dust concentrations. Installation from one side makes it ideal for thick-walled or double-walled ducts. The measurement is based on the forward scattering of light. An automated check of the zero and reference point as well as a contamination check are on board in the device.

At a glance

- One-side installation
- For very low to medium dust concentrations
- Automatic check of zero and reference point
- Contamination check
- Hastelloy probe available for corrosive gas environments
- For small to medium duct diameters

Your benefits

- Ideal for thick- or double-walled ducts
- Approved according to EN 15267
- Low maintenance due to self-monitoring and contamination check
- Quick installation – no alignment required



Fields of application

- Emissions monitoring at power plants and waste incineration plants
- Monitoring of filter systems
- Measurements in exhaust gas or exhaust ventilation ducts

Detailed technical data

DUSTHUNTER SP100 system

Measured values	Scattered light intensity, dust concentration (after gravimetric comparison measurement)
Performance-tested measurands	Scattered light intensity
Measurement principles	Scattered light forward
Spectral range	640 nm ... 660 nm Laser, protection class 2, power < 1 mW
Measuring ranges	Dust concentration 0 ... 5 mg/m ³ / 0 ... 200 mg/m ³ Higher measuring ranges on request
Certified measuring ranges	Scattered light intensity 0 ... 15 SI / 0 ... 5 SI / 0 ... 20 SI / 0 ... 50 SI / 0 ... 100 SI / 0 ... 200 SI
Response time (t₉₀)	1 s ... 600 s Freely adjustable
Accuracy	≤ 2 % Of measuring range full scale
Process temperature	Standard version DHSP-T2xx: -40 °C ... +220 °C High temperature version DHSP-T2xx: -40 °C ... +400 °C
Process pressure	With MCU-P control unit: -50 hPa ... 10 hPa With external purge air unit: -50 hPa ... 30 hPa With instrument air (provided by the customer): -50 hPa ... 100 hPa
Process gas humidity	Non-condensing
Duct diameter	≥ 0.25 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-11 compliant
Electrical safety	CE
Test functions	Automatic self-test (linearity, contamination, drift, aging) Contamination limit values: Warning at 30%; fault at 40% Manual linearity test with reference filter

DHSP-Txxx sender/receiver unit

Ambient temperature	-40 °C ... +60 °C
Enclosure rating	IP 66
Dimensions (W x H x D)	For details see dimensional drawings
Weight	Nominal length 435 mm: ≤ 6.5 kg Nominal length 735 mm: ≤ 7.8 kg

		Nominal length 1035 mm: ≤ 9.5 kg Nominal length 1335 mm: ≤ 11 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		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

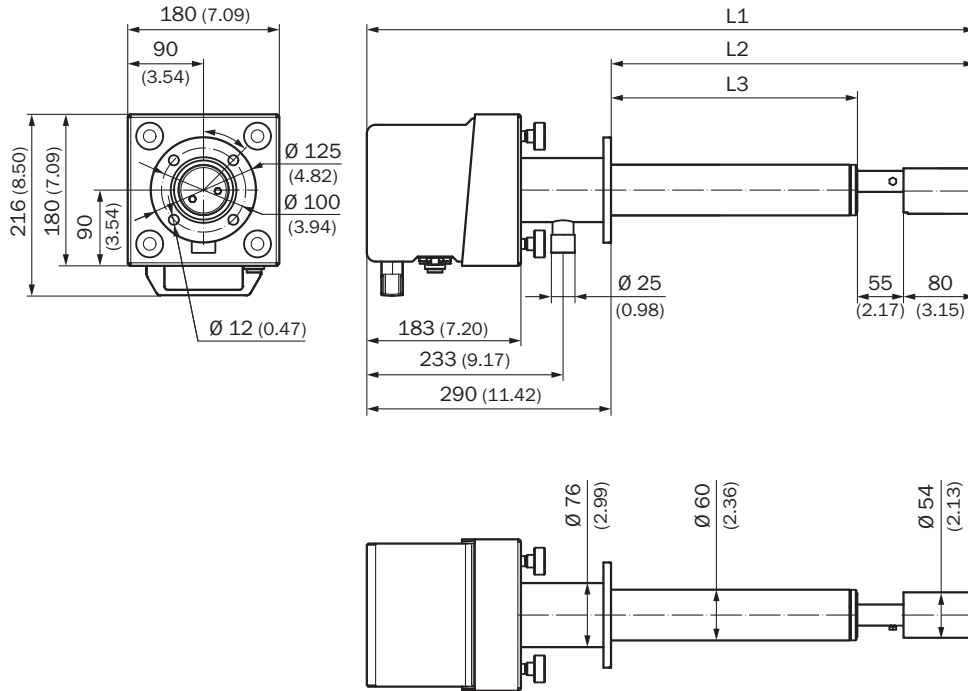
Description	Unit to provide dust-free air for flushing of optical surfaces	
Gas flow rate	38 m³/h ... 63 m³/h At 30 hPa counter pressure, depending on low pressure inside the filter	
Ambient temperature	-20 °C ... +40 °C	
Enclosure rating	IP 54	
Dimensions (W x H x D)	550 mm x 550 mm x 258 mm (for details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

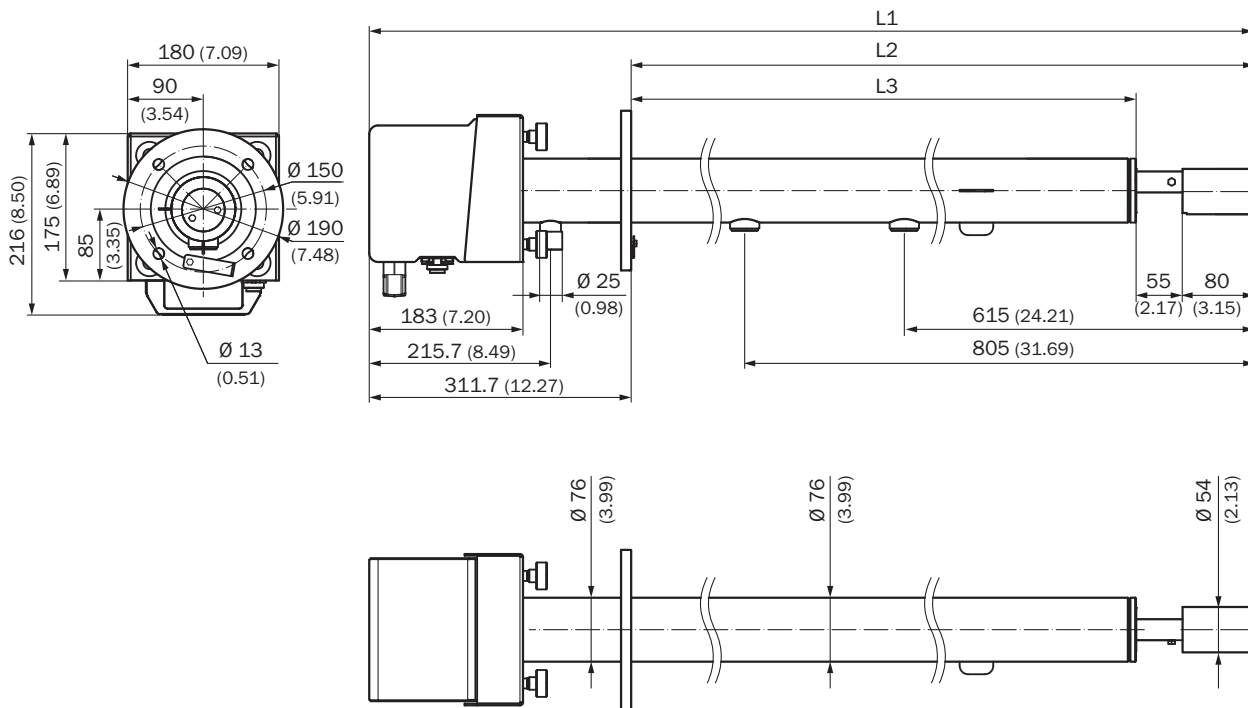
DHSP-Txx1/-Txx2 sender/receiver unit



Sender/receiver unit Type	L1	Nominal length of the probe L2	L3
DHSP-Txx1	725	435	300
DHSP-Txx2	1,025	735	600

All dimensions in mm

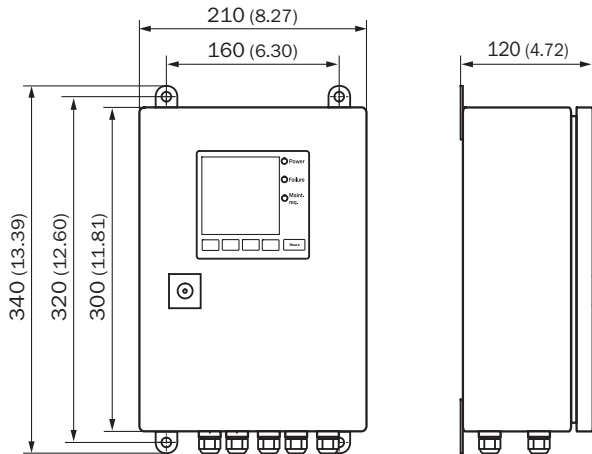
DHSP-Txx3/-Txx4/-Txx5/-Txx6/-Txx7 sender/receiver unit



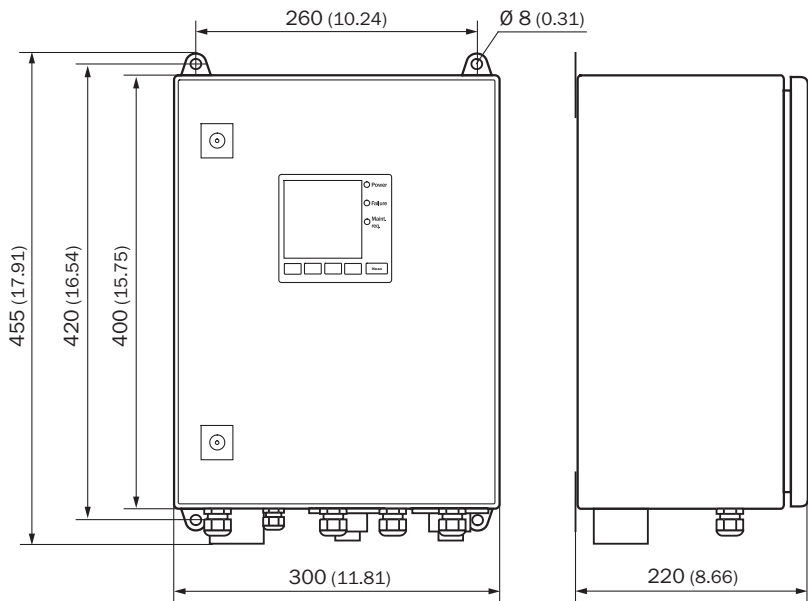
Sender/receiver unit Type	L1	Nominal length of the probe L2	L3
DHSP-Txx3	1,347	1,035	900
DHSP-Txx4	1,647	1,335	1,200
DHSP-Txx5	1,947	1,635	1,500
DHSP-Txx6	2,147	1,835	1,700
DHSP-Txx7	2,397	2,085	1,950

All dimensions in mm

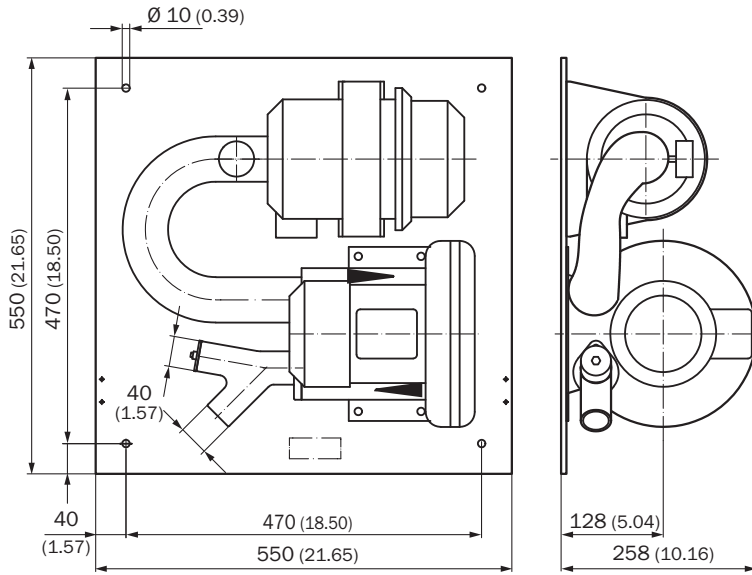
MCU-N control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



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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