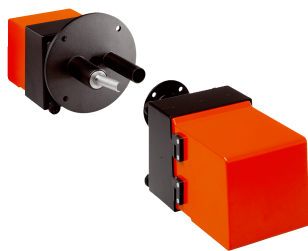


# DUSTHUNTER C200

TRANSMITTANCE DUST MEASURING DEVICES

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
DUSTHUNTER C200	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\\_C200](http://www.sick.com/DUSTHUNTER_C200)

### Product description

The DUSTHUNTER C200 is a type-approved measuring device which combines the advantages of the measuring principles of transmittance and forward scattered light. It is, therefore, ideal for measuring very low to high dust concentrations. Automatic self-alignment optimizes the position of the measuring beam and prevents incorrect measurement. An automated check of the zero and reference point as well as a contamination check are on board in the device.

### At a glance

- Combination of transmittance and scattered light measurement
- For very low to high dust concentrations
- Automatic check of zero and reference point
- Contamination monitoring and compensation on both sides
- Automatic self-alignment
- For medium to large duct diameters

### Your benefits

- Suitable for highly fluctuating dust concentrations
- Reliable application due to redundant measurement
- Low maintenance due to self-monitoring function
- Prepared for the future to monitor decreasing limit values
- Type-approved according to EN 15267



## Fields of application

- Emissions monitoring at power plants and waste incineration plants
- Monitoring of filter systems
- Measurement of dust concentration in exhaust gas and exhaust air ducts upstream and downstream of filters

## Detailed technical data

### DUSTHUNTER C200 system

<b>Measured values</b>	Transmittance, opacity, relative opacity, extinction, dust concentration (scattered light), dust concentration (transmittance), scattered light intensity												
<b>Performance-tested measurands</b>	Scattered light intensity, extinction												
<b>Measurement principles</b>	Transmittance measurement, scattered light forward												
<b>Spectral range</b>	Transmittance measurement: 450 nm ... 700 nm Scattered light forward: 640 nm ... 660 nm Laser, protection class 2, power < 1 mW												
<b>Measuring ranges</b>	<table> <tr> <td>Transmittance</td> <td>100 ... 90 % / 100 ... 0 %</td> </tr> <tr> <td>Opacity</td> <td>0 ... 10 % / 0 ... 100 %</td> </tr> <tr> <td>Relative opacity</td> <td>0 ... 10 % / 0 ... 100 %</td> </tr> <tr> <td>Extinction</td> <td>0 ... 0.045 / 0 ... 2</td> </tr> <tr> <td>Dust concentration (scattered light)</td> <td>0 ... 5 mg/m<sup>3</sup> / 0 ... 200 mg/m<sup>3</sup></td> </tr> <tr> <td>Dust concentration (transmittance)</td> <td>0 ... 200 mg/m<sup>3</sup> / 0 ... 10,000 mg/m<sup>3</sup></td> </tr> </table> <p>The transmittance measurement depends on measuring distance and dust properties</p>	Transmittance	100 ... 90 % / 100 ... 0 %	Opacity	0 ... 10 % / 0 ... 100 %	Relative opacity	0 ... 10 % / 0 ... 100 %	Extinction	0 ... 0.045 / 0 ... 2	Dust concentration (scattered light)	0 ... 5 mg/m <sup>3</sup> / 0 ... 200 mg/m <sup>3</sup>	Dust concentration (transmittance)	0 ... 200 mg/m <sup>3</sup> / 0 ... 10,000 mg/m <sup>3</sup>
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Dust concentration (transmittance)	0 ... 0.1 Ext / 0 ... 0.05 Ext / 0 ... 0.2 Ext / 0 ... 0.5 Ext / 0 ... 1 Ext												
<b>Response time (t<sub>90</sub>)</b>	1 s ... 600 s Adjustable												
<b>Accuracy</b>	≤ ± 2 %												
<b>Process temperature</b>	-40 °C ... +300 °C												
<b>Process pressure</b>	With MCU-P control unit: -50 hPa ... 2 hPa With external purge air unit: -50 hPa ... 30 hPa												
<b>Process gas humidity</b>	Non-condensing												
<b>Duct diameter</b>	With reflector/scattered light receiver DHC-R0: 0.5 m ... 3 m With reflector/scattered light receiver DHC-R1: 2.5 m ... 8 m												
<b>Conformities</b>	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 U.S. EPA PS-1 compliant												
<b>Electrical safety</b>	CE												
<b>Corrective functions</b>	Automatic self-alignment												
<b>Test functions</b>	Automatic self-test (linearity, contamination, drift, aging)												

Contamination limits: at 30% warning, at 40% failure  
Manual linearity test with reference filter

### DHC-T sender/receiver unit

<b>Description</b>	Analyzer unit of the cross-duct measuring system
<b>Ambient temperature</b>	-40 °C ... +60 °C
<b>Enclosure rating</b>	IP 66
<b>Dimensions (W x H x D)</b>	212 mm x 241 mm x 429 mm (for details see dimensional drawings)
<b>Weight</b>	≤ 9.5 kg
<b>Power supply</b>	
	Voltage 24 V
	Supply via control unit
	Power consumption ≤ 17 W
<b>Auxiliary gas connections</b>	Purge air

### DHC-R0 reflector/scattered light receiver

<b>Description</b>	Combination of reflector unit for transmittance measurement and receiver for scattered light measurement
<b>Length of measuring path</b>	≤ 0.1 m Effective measuring distance for scattered light measurement
<b>Ambient temperature</b>	-40 °C ... +60 °C
<b>Enclosure rating</b>	IP 66
<b>Dimensions (W x H x D)</b>	212 mm x 241 mm x 420 mm (for details see dimensional drawings)
<b>Weight</b>	≤ 8 kg
<b>Auxiliary gas connections</b>	Purge air

### DHC-R1 reflector/scattered light receiver

<b>Description</b>	Combination of reflector unit for transmittance measurement and receiver for scattered light measurement
<b>Length of measuring path</b>	≤ 0.3 m Effective measuring distance for scattered light measurement
<b>Ambient temperature</b>	-40 °C ... +60 °C
<b>Enclosure rating</b>	IP 66
<b>Dimensions (W x H x D)</b>	265 mm x 308 mm x 549 mm (for details see dimensional drawings)
<b>Weight</b>	≤ 12 kg
<b>Auxiliary gas connections</b>	Purge air

### MCU-N control unit

<b>Description</b>	Unit to control the system components and to evaluate and output the data provided by them
<b>Ambient temperature</b>	-40 °C ... +60 °C
<b>Enclosure rating</b>	IP 66
<b>Analog outputs</b>	3 outputs: 0/2/4 ... 20 mA, 750 Ω Electrically isolated; two additional outputs if using I/O modules (option)
<b>Analog inputs</b>	2 inputs: 0 ... 20 mA Not electrically isolated; two additional inputs if using I/O modules (option)
<b>Digital outputs</b>	5 relay contacts:

	48 V, 1 A Potential-free; for status signals
<b>Digital inputs</b>	4 potential-free contacts
<b>Interfaces and bus protocols</b>	
	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
<b>Indication</b>	LC display Status LEDs: "Power", "Maintenance" and "Failure"
<b>Operation</b>	Via LC-display or software SOPAS ET
<b>Dimensions (W x H x D)</b>	210 mm x 340 mm x 120 mm
<b>Weight</b>	≤ 3.7 kg
<b>Power supply</b>	
	Voltage 90 ... 250 V Version with 24 V DC available as an option
	Frequency 47 ... 63 Hz
	Power consumption ≤ 15 W
<b>Options</b>	Interface module(s) I/O module(s)

MCU-P control unit

<b>Description</b>	Unit to control the system components and to evaluate and output the data provided by them. With integrated purge air unit.
<b>Gas flow rate</b>	≤ 20 m³/h
<b>Ambient temperature</b>	-40 °C ... +45 °C Intake temperatures for purge air
<b>Enclosure rating</b>	IP 66
<b>Analog outputs</b>	3 outputs: 0/2/4 ... 20 mA, 750 Ω Electrically isolated; two additional outputs if using I/O modules (option)
<b>Analog inputs</b>	2 inputs: 0 ... 20 mA Not electrically isolated; two additional inputs if using I/O modules (option)
<b>Digital outputs</b>	5 relay contacts: 48 V, 1 A Potential-free; for status signals
<b>Digital inputs</b>	4 potential-free contacts
<b>Interfaces and bus protocols</b>	
	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)

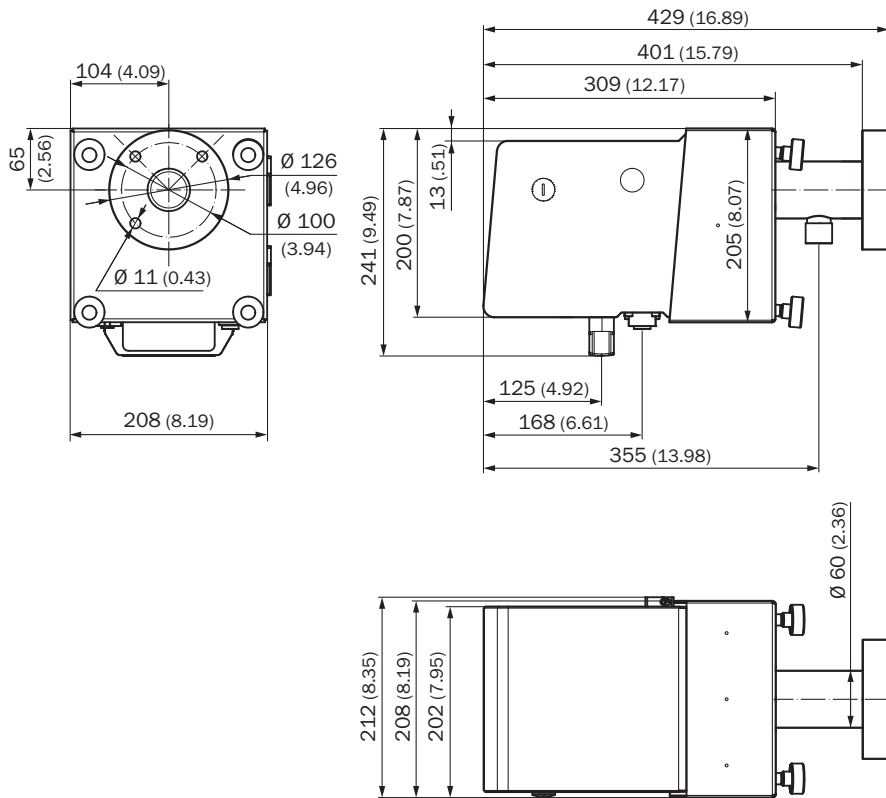
	USB	SOPAS ET
<b>Indication</b>		LC display Status LEDs: "Power", "Maintenance" and "Failure"
<b>Operation</b>		Via LC-display or software SOPAS ET
<b>Dimensions (W x H x D)</b>		300 mm x 455 mm x 220 mm
<b>Weight</b>		≤ 13.5 kg
<b>Power supply</b>		
	Voltage	90 ... 250 V Version with 24 V DC available as an option
	Frequency	47 ... 63 Hz
	Power consumption	≤ 70 W
<b>Auxiliary gas connections</b>		Purge air
<b>Options</b>		Interface module(s) I/O module(s)

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

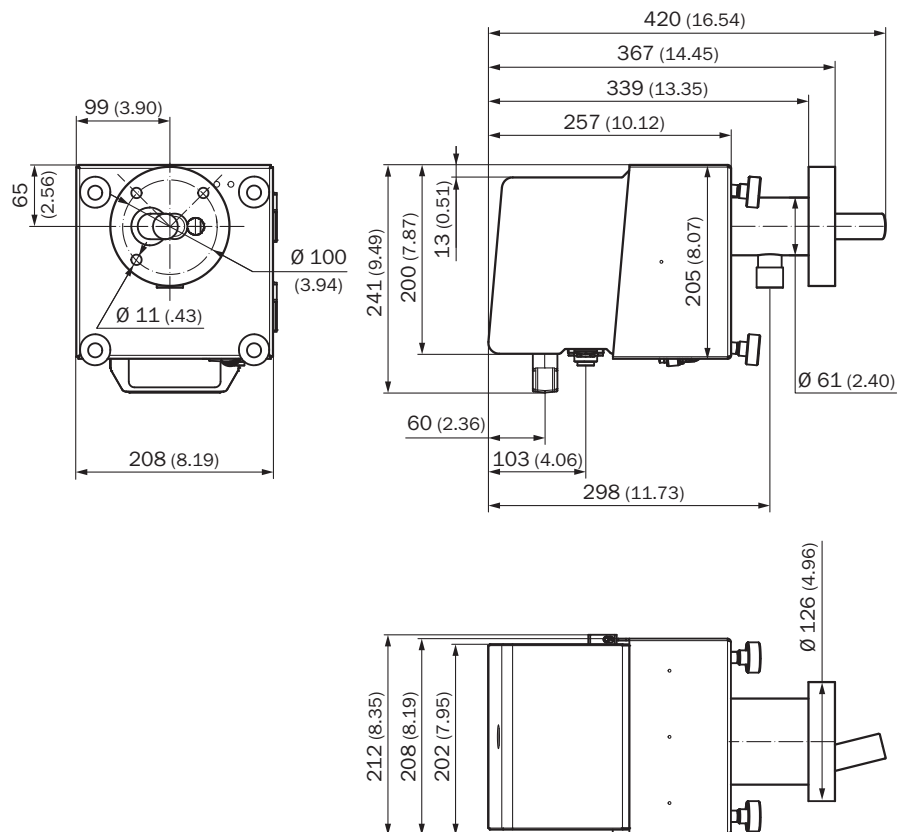
<b>Description</b>		Unit to provide dust-free air for flushing of optical surfaces
<b>Gas flow rate</b>		38 m <sup>3</sup> /h ... 63 m <sup>3</sup> /h At 30 hPa counter pressure, depending on low pressure inside the filter
<b>Ambient temperature</b>		-20 °C ... +40 °C
<b>Enclosure rating</b>		IP 54
<b>Dimensions (W x H x D)</b>		550 mm x 550 mm x 258 mm (for details see dimensional drawings)
<b>Weight</b>		18 kg
<b>Power supply</b>		
	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
<b>Auxiliary gas connections</b>		Purge air: 40 mm
<b>Test functions</b>		Pressure switch (switching point -35 hPa)
<b>Integrated components</b>		2-step air filter, type Europiclon, dust capacity 200 g

**Dimensional drawings** (Dimensions in mm (inch))

DHC-T sender/receiver unit

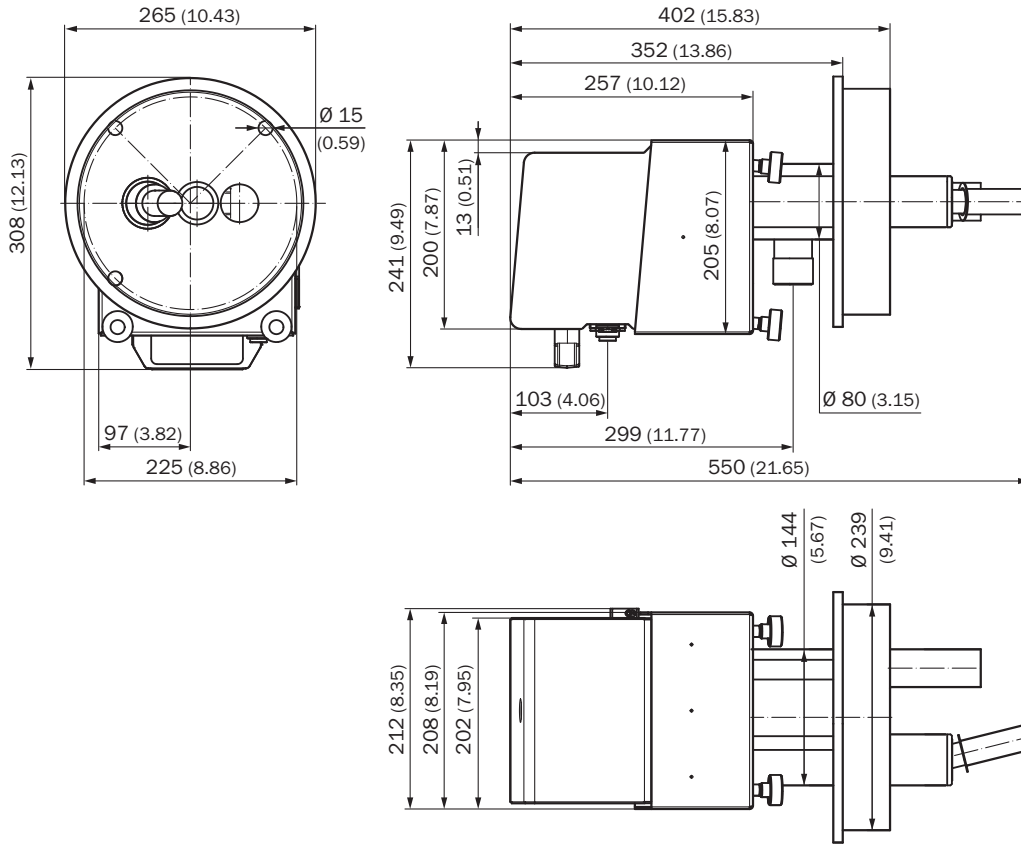


DHC-R0 reflector/scattered light receiver

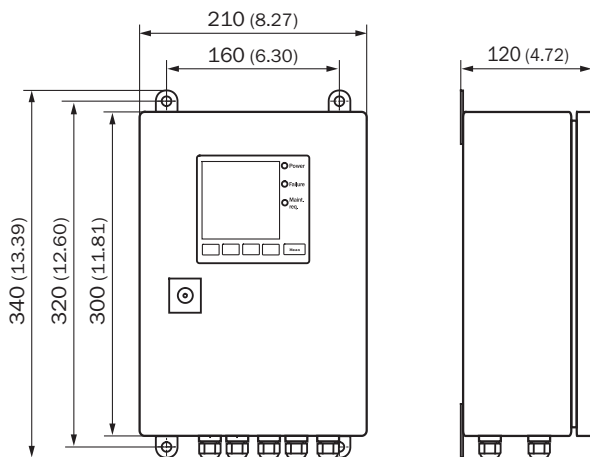




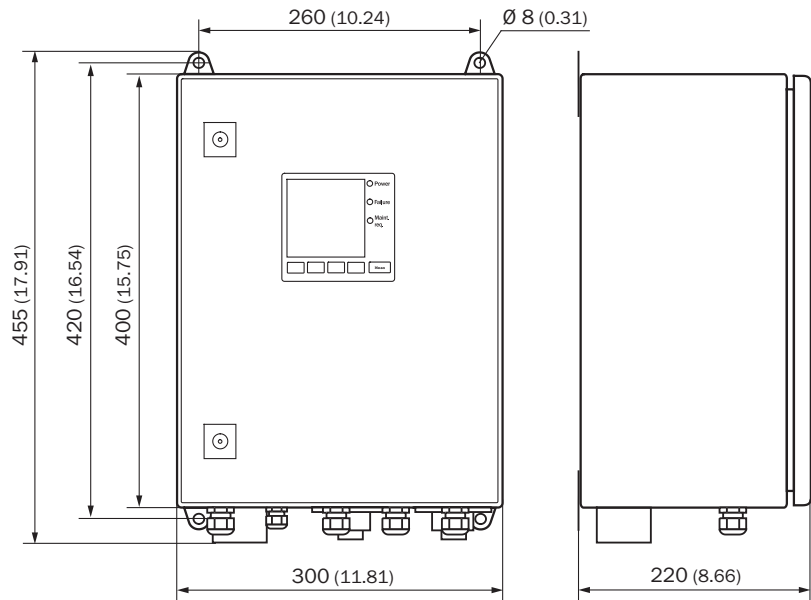
DHC-R1 reflector/scattered light receiver



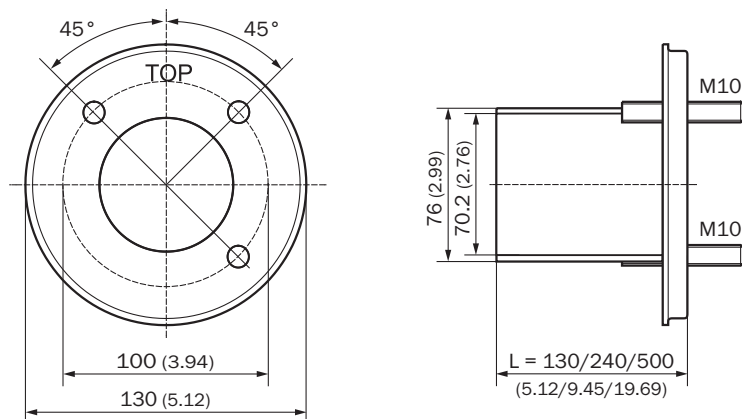
MCU-N control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



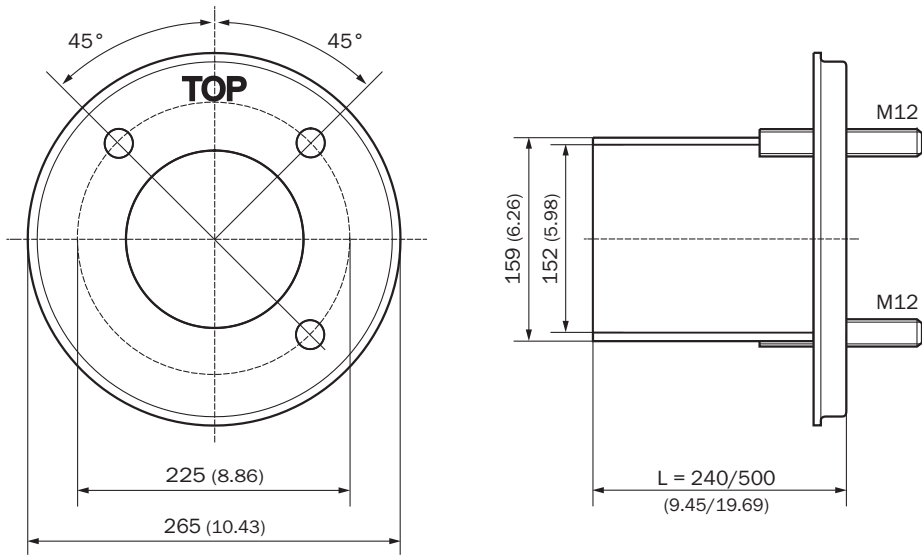
MCU-P control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



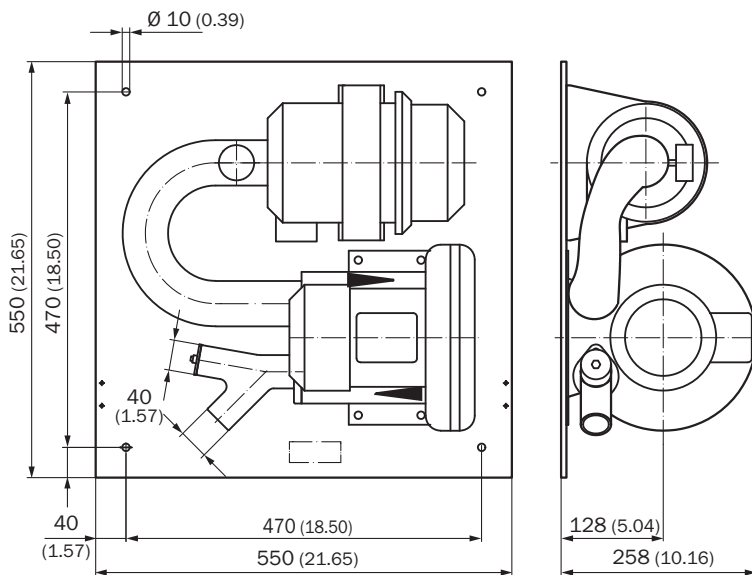
Mounting flange,  $D_f=70.2$  mm



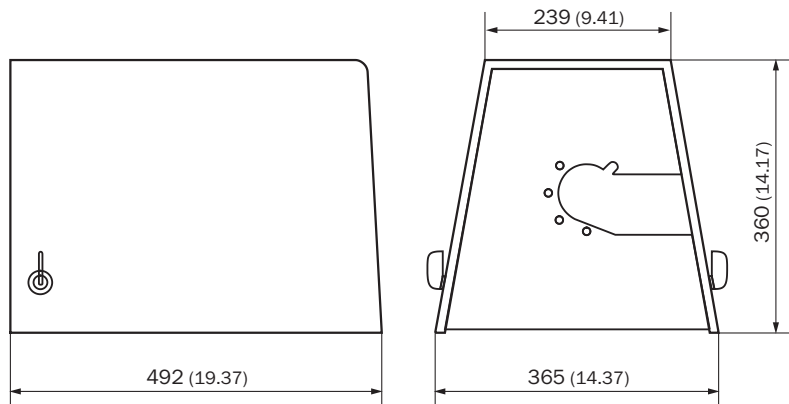
Mounting flange,  $D_f=152$  mm



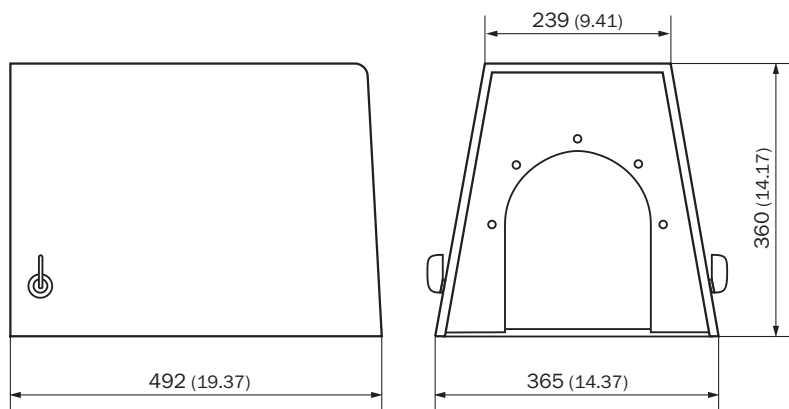
SLV4-2 purge air unit, 2BH1300



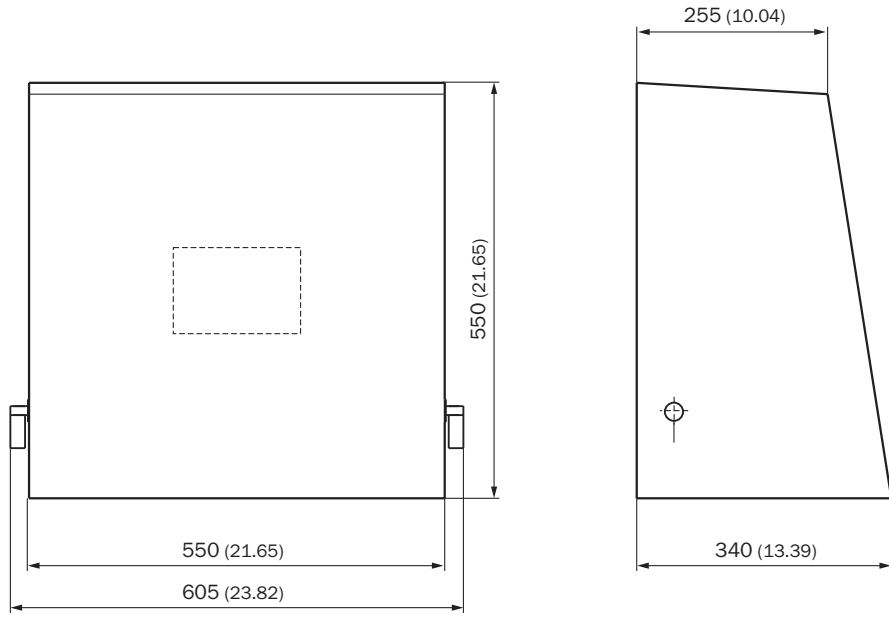
Weather protection cover for sender/receiver unit



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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Contacts and other locations –[www.sick.com](http://www.sick.com)