



# DUSTHUNTER SB30

SCATTERED LIGHT DUST MEASURING DEVICES

**SICK**  
Sensor Intelligence.



### Ordering information

| Type            | Part no.   |
|-----------------|------------|
| DUSTHUNTER SB30 | 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\\_SB30](http://www.sick.com/DUSTHUNTER_SB30)

### Product description

The DUSTHUNTER SB30 is a measuring device, designed to detect very low to moderate dust concentrations, such as in hot or volatile gases. Measurement is based on the tried-and-tested measurement principle of backward light scattering. Installation is easy and is only carried out on one side of the channel. Two different penetration depths are possible for adapting the measuring device to various channel diameters.

### At a glance

- For low to medium dust content
- Easy one-sided installation
- Automatic check of zero and reference point
- For medium to large duct diameters

### Your benefits

- Easy installation, commissioning, and operation
- Tried-and-tested measurement, not dependent on gas velocity, humidity, or particle load
- Cost-effective thanks to easy mounting on just one side; no alignment necessary
- Very low-maintenance thanks to self-monitoring
- Demand-controlled maintenance notifications



Fields of application

- Emissions monitoring in industrial plants including, for example, power plants, heating systems, waste incineration plants, in steel production, and in cement plants
- Monitoring of dust concentrations downstream of filter plants
- Dust concentration measurements in flue gas ducts upstream and downstream of dust filters

Detailed technical data

DUSTHUNTER SB30 system

|                                       |   |
|---------------------------------------|---|
| <b>Measured values</b>                | Scattered light intensity, dust concentration (after gravimetric comparison measurement)  |
| <b>Measurement principles</b>         | Scattered light backward  |
| <b>Spectral range</b>                 | 640 nm ... 660 nm<br>Laser, protection class 2, power < 1 mW  |
| <b>Measuring ranges</b>               | Scattered light intensity 0 ... 30 SI / 0 ... 3,000 SI<br>Measuring ranges freely selectable; three measuring ranges pre-configured (0 ... 30/500/3.000 SI) |
| <b>Response time (t<sub>90</sub>)</b> | 1 s ... 600 s<br>Freely adjustable via SOPAS ET software  |
| <b>Accuracy</b>                       | ± 2 %<br>Of measuring range full scale  |
| <b>Process temperature</b>            | -40 °C ... +600 °C  |
| <b>Process pressure</b>               | With MCU-P control unit: -50 hPa ... 2 hPa<br>With external purge air unit: -50 hPa ... 30 hPa  |
| <b>Duct diameter</b>                  | ≥ 500 mm  |
| <b>Conformities</b>                   | TUEV type-examination<br>China's EPA compliant  |
| <b>Electrical safety</b>              | CE  |
| <b>Analog outputs</b>                 | 1 output:<br>0/2/4 ... 20 mA, 750 Ω   |
| <b>Test functions</b>                 | Automatic self-test (linearity, drift, aging)<br>Manual linearity test with reference filter  |
| <b>Options</b>                        | MCU control unit<br>SCU control unit<br>External purge air unit   |

DHSB-T30 sender/receiver unit

|                               |   |
|-------------------------------|---|
| <b>Description</b>            | Analyzer unit of the measuring system   |
| <b>Ambient temperature</b>    | -40 °C ... +60 °C   |
| <b>Enclosure rating</b>       | IP 66   |
| <b>Analog outputs</b>         | 1 output:<br>0/4 ... 20 mA, 750 Ω<br>Electrically isolated  |
| <b>Digital outputs</b>        | 3 relay contacts:<br>48 V, 1 A<br>For status signals  |
| <b>Digital inputs</b>         | 2 potential-free contacts:<br>For external maintenance switch, automatic self-test or linearity measurement |
| <b>Dimensions (W x H x D)</b> | For details see dimensional drawings  |

|                     |   |
|---------------------|---|
| <b>Weight</b>       | 7 kg  |
| <b>Power supply</b> | Voltage 24 V  |
|                     | Supply via MCU control unit or an external power supply |
|                     | Power consumption ≤ 4 W                                 |

### 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>               | 1 output:<br>0/2/4 ... 20 mA, 750 Ω<br>Electrically isolated; two additional outputs if using I/O modules (option) |
| <b>Analog inputs</b>                | 2 inputs:<br>0 ... 20 mA<br>Not electrically isolated; two additional inputs if using I/O modules (option)         |
| <b>Digital outputs</b>              | 5 relay contacts:<br>48 V, 1 A<br>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 (option)<br>Status LEDs: "Power", "Maintenance" and "Failure"   |
| <b>Operation</b>                    | Via LC-display (option) 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)<br>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.<br>With integrated purge air unit. |
| <b>Gas flow rate</b>       | ≤ 20 m³/h  |
| <b>Ambient temperature</b> | -40 °C ... +45 °C<br>Intake temperatures for purge air   |
| <b>Enclosure rating</b>    | IP 66  |

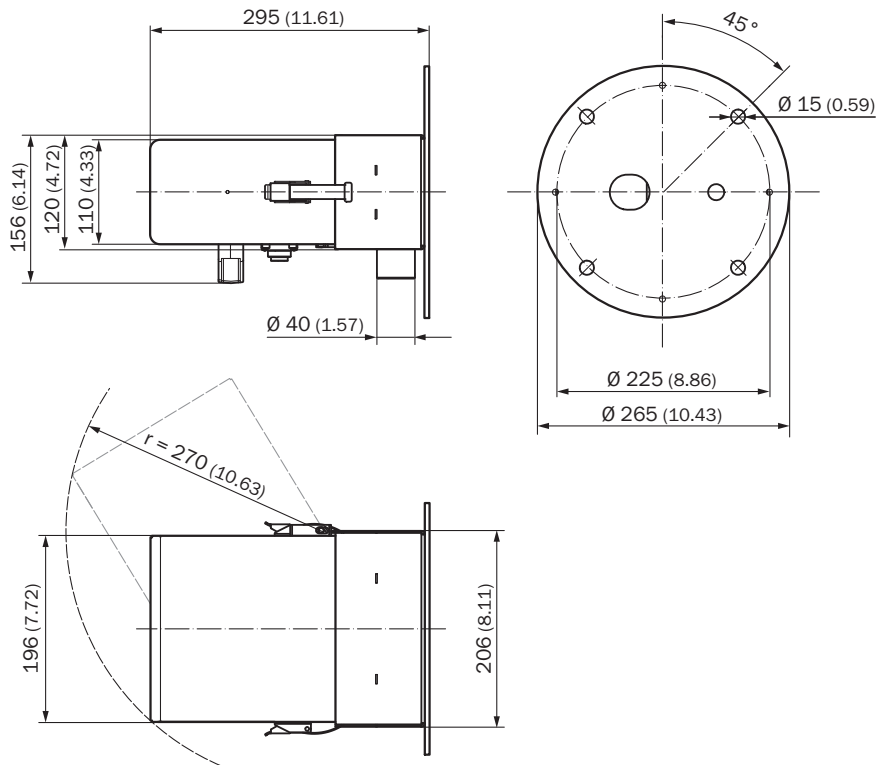
|                                     |   |          |   |           |                                     |                   |  |        |  |        |   |        |  |     |          |
|-------------------------------------|---|----------|---|-----------|-------------------------------------|-------------------|--|--------|--|--------|---|--------|--|-----|----------|
| <b>Analog outputs</b>               | 1 output:<br>0/2/4 ... 20 mA, 750 Ω<br>Electrically isolated; two additional outputs if using I/O modules (option)  |          |   |           |                                     |                   |  |        |  |        |   |        |  |     |          |
| <b>Analog inputs</b>                | 2 inputs:<br>0 ... 20 mA<br>Not electrically isolated; two additional inputs if using I/O modules (option)  |          |   |           |                                     |                   |  |        |  |        |   |        |  |     |          |
| <b>Digital outputs</b>              | 5 relay contacts:<br>48 V, 1 A<br>Potential-free; for status signals  |          |   |           |                                     |                   |  |        |  |        |   |        |  |     |          |
| <b>Digital inputs</b>               | 4 potential-free contacts   |          |   |           |                                     |                   |  |        |  |        |   |        |  |     |          |
| <b>Interfaces and bus protocols</b> | <table border="0"> <tr> <td>Ethernet</td> <td>Modbus TCP (via optional interface module)</td> </tr> <tr> <td>Ethernet</td> <td>OPC (via optional interface module)</td> </tr> <tr> <td>Ethernet</td> <td>SOPAS ET (via optional interface module)</td> </tr> <tr> <td>RS-485</td> <td>Modbus RTU (via optional interface module)</td> </tr> <tr> <td>RS-485</td> <td>PROFIBUS DP (via optional interface module)</td> </tr> <tr> <td>RS-485</td> <td>SOPAS ET (via optional interface module)</td> </tr> <tr> <td>USB</td> <td>SOPAS ET</td> </tr> </table> | 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 |
| 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 (option)<br>Status LEDs: "Power", "Maintenance" and "Failure"  |          |   |           |                                     |                   |  |        |  |        |   |        |  |     |          |
| <b>Operation</b>                    | Via LC-display (option) 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>                 | <table border="0"> <tr> <td>Voltage</td> <td>90 ... 250 V<br/>Version with 24 V DC available as an option</td> </tr> <tr> <td>Frequency</td> <td>47 ... 63 Hz</td> </tr> <tr> <td>Power consumption</td> <td>≤ 70 W</td> </tr> </table>   | Voltage  | 90 ... 250 V<br>Version with 24 V DC available as an option | Frequency | 47 ... 63 Hz                        | Power consumption | ≤ 70 W                                   |        |  |        |   |        |  |     |          |
| Voltage                             | 90 ... 250 V<br>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)<br>I/O module(s)  |          |   |           |                                     |                   |  |        |  |        |   |        |  |     |          |

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

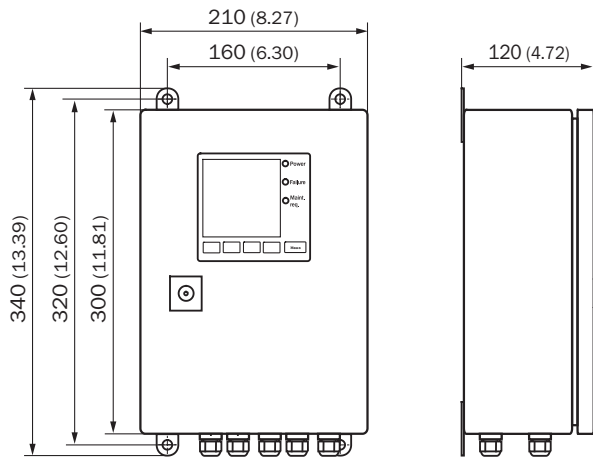
|                                  |  |                     |  |
|----------------------------------|--|---------------------|--|
| <b>Description</b>               | Unit to provide dust-free air for flushing of optical surfaces   |                     |  |
| <b>Gas flow rate</b>             | 38 m³/h ... 63 m³/h<br>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>              | <table border="0"> <tr> <td>Three-phase current</td> <td>3-phase, Δ: 200 ... 240 V, 50 Hz, 2.6 A, 350 W<br/>3-phase, Δ: 220 ... 275 V, 60 Hz, 2.3 A, 450 W<br/>3-phase, Y: 345 ... 415 V, 50 Hz, 1.5 A, 350 W<br/>3-phase, Y: 380 ... 480 V, 60 Hz, 1.3 A, 450 W</td> </tr> </table> | Three-phase current | 3-phase, Δ: 200 ... 240 V, 50 Hz, 2.6 A, 350 W<br>3-phase, Δ: 220 ... 275 V, 60 Hz, 2.3 A, 450 W<br>3-phase, Y: 345 ... 415 V, 50 Hz, 1.5 A, 350 W<br>3-phase, Y: 380 ... 480 V, 60 Hz, 1.3 A, 450 W |
| Three-phase current              | 3-phase, Δ: 200 ... 240 V, 50 Hz, 2.6 A, 350 W<br>3-phase, Δ: 220 ... 275 V, 60 Hz, 2.3 A, 450 W<br>3-phase, Y: 345 ... 415 V, 50 Hz, 1.5 A, 350 W<br>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 Europiclone, dust capacity 200 g   |                     |  |

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

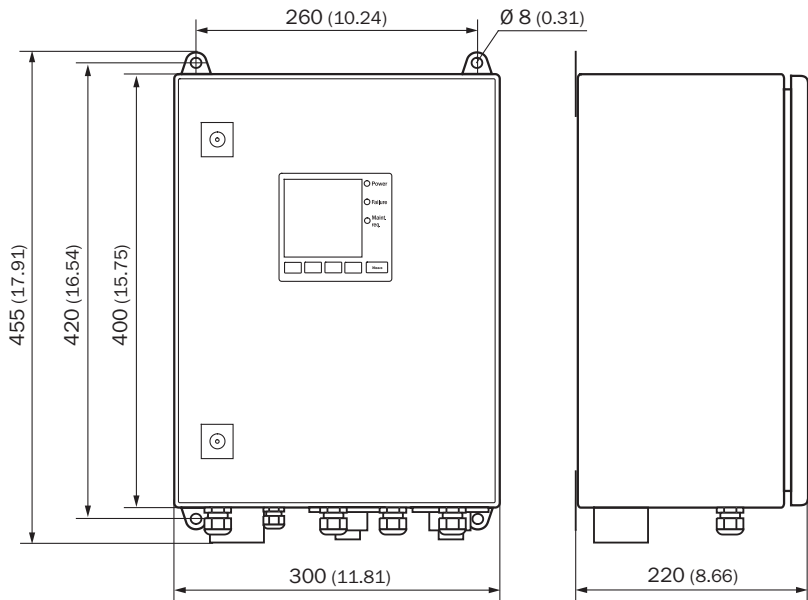
DHSB-T30 sender/receiver unit



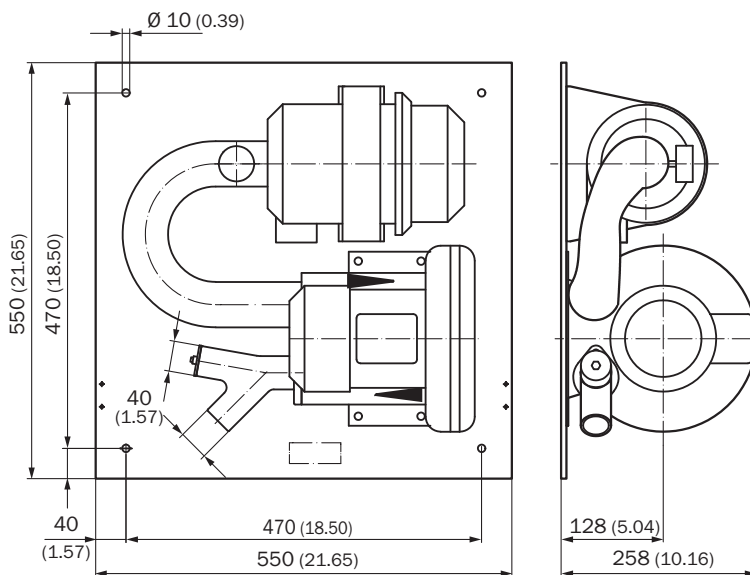
MCU-N control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



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



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.”

## WORLDWIDE PRESENCE:

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