

# S130 / S132

## Laser Particle Counter



ECO (0.3 < d ≤ 5.0 μm) **S130**



**S132** PRO (0.1 < d ≤ 5.0 μm)



**PARTICLE MEASUREMENT**  
According to ISO-8573 Standard



**EASY INSTALLATION**  
Plug and Play Solution



**PRO VERSION S132**  
Smallest channel 0.1 < d ≤ 0.5 μm



**ECO VERSION S130**  
Smallest channel 0.3 < d ≤ 0.5 μm



## Benefits

- ✓ Accurate compressed air quality measurements and monitoring with particle size ranges:  
0.1 < d ≤ 0.5 μm / 0.5 < d ≤ 1.0 μm / 1.0 < d ≤ 5.0 μm / d > 5.0 μm
- ✓ Classify the compressed air systems according to ISO 8573-1 while being in compliance with the ISO 8573-4
- ✓ Easy connection to compressed air system through a 6 mm hose with quick connectors
- ✓ Integrated pressure diffuser suitable for inlet pressure ranges of 3 ... 15 bar(g)
- ✓ Optional 5" touch screen integrated for live data readings and data logging functions
- ✓ Designed to be used in stationary monitoring solutions, as well as in portable audit measurements

## Reliable particulates counts in compressed air systems

The SUTO S130 / S132 Laser Particle Counters are optimized for 24/7 compressed air quality monitoring. Unlike its competition, the SUTO laser particle counters are coming with integrated pressure diffusers to reduce the line pressure inside the instrument. Users are enabled to use the laser particle counters directly at the compressed air system, without installing pressure reducers and therefore being in compliance with the ISO 8573-4 standard.

The measurement values are displayed in counts per volume (cn/m<sup>3</sup>), but can also display alternative volume units like cubic-feet or liter.

The integrated display offers live readings for all channels, signal output settings as well as an integrated data logger, to store the measurement data on the device.

## Applications

Particle free compressed air is not an easy task to be achieved. Monitoring is a must in many industries and applications to avoid contamination in products and health risks for humans.

- Medical air
- Pharmaceuticals
- Breathable air for rescue workers and divers
- Food and beverage
- Semiconductor fabs
- Conveyance of hygroscopic food
- High tech processes

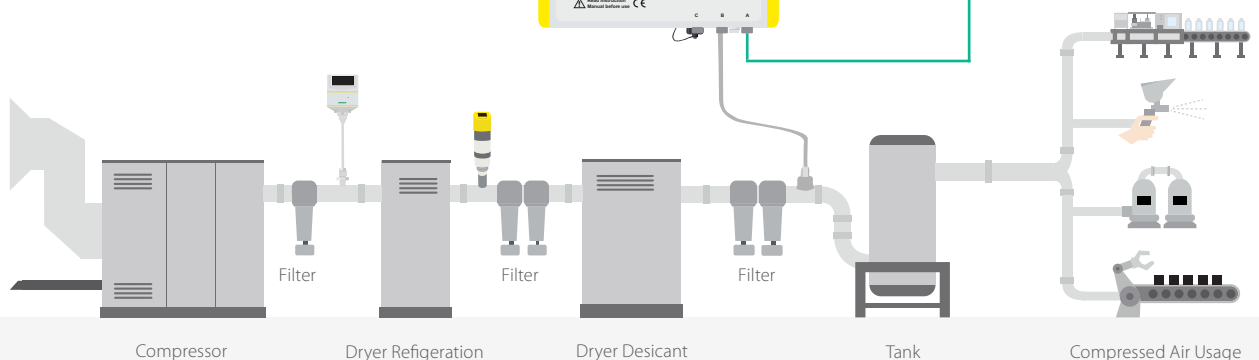
### S130/S132

Portable and stationary Solution



### Output Signals

- 4 ... 20 mA analog output
- Modbus/RTU and Modbus/TCP (TCP only with Display version)
- Alarm Relay





## Particulates in Paint Shops

In a modern paint shop, the painting quality highly depends on the quality of the compressed air. Modern paint systems inject the paint into the paint gun, where compressed air is driving the paint through the nozzle. When exiting the nozzle, the paint atomizes into a fine and uniform mist. These tiny paint particles repel each other as they are leaving the nozzle and stick to the object being painted.

Excess impurities in the compressed air will cause the paint particles to "clump", resulting in uneven coverage and an inconsistent finish.

The only way to secure this high-quality painting process is by monitoring the particle concentration of the compressed air supply.

## Air Quality Monitoring according to the ISO 8573-1

The ISO 8573-1 defines the compressed air purity classes for particulates in a compressed air system by providing the limit values for each channel.

The S132 Laser Particle Counter measures the channels as defined by the ISO 8573-1:

- $0.1 < d \leq 0.5 \mu\text{m}$
- $0.5 < d \leq 1.0 \mu\text{m}$
- $1.0 < d \leq 5.0 \mu\text{m}$



For these 3 channels, the limit values are defined and divided into classes.

But furthermore, as stated in the ISO 8573, the fourth channel must be measured as well:

- $d > 5.0 \mu\text{m}$

This channel value must be 0 for the classes 0 ... 5, as otherwise the classification falls into class 6 or worse, where a mass concentration is defined as limit values.

Certain industries like the pharmaceutical and food industry require high-quality compressed air. By meeting the ISO 8573-1 standard requirements you can:

- 
**Ensure Process and Product Safety:**  
 Contaminants mixing with applications affect product results and can create safety concerns.
- 
**Prevent production downtime:**  
 Processes and machines are stopped to find and eliminate the contamination issues.

### S130



### S132



# Technical Data

## Measurement

### Particle

|   |  |
|---|--|
| Measuring range                           | S130: $0.3 < d \leq 5.0 \mu\text{m}$<br>S132: $0.1 < d \leq 5.0 \mu\text{m}$   |
| Measuring channels                        | S130:<br>CH1: $0.3 < d \leq 0.5 \mu\text{m}$<br>CH2: $0.5 < d \leq 1.0 \mu\text{m}$<br>CH3: $1.0 < d \leq 5.0 \mu\text{m}$<br>CH4: $5.0 \mu\text{m} < d$ (configurable)<br>S132:<br>CH1: $0.1 < d \leq 0.5 \mu\text{m}$<br>CH2: $0.5 < d \leq 1.0 \mu\text{m}$<br>CH3: $1.0 < d \leq 5.0 \mu\text{m}$<br>CH4: $5.0 \mu\text{m} < d$ (configurable) |
| Counting efficiency according ISO 21501-4 | S130:<br>30 ... 70 % of $d > 0.3 \mu\text{m}$ ,<br>90 ... 110 % of $d \geq 0.45 \mu\text{m}$<br>S132:<br>30 ... 70 % of $d > 0.1 \mu\text{m}$ ,<br>90 ... 110 % of $d \geq 0.3 \mu\text{m}$  |
| Principle of measurement                  | Laser detection  |
| Sensor                                    | LED-laser  |

### Consumption

|                  |   |
|------------------|---|
| Selectable units | $\text{cn}/\text{m}^3, \text{cn}/\text{ft}^3$ |
|------------------|---|

## Signal / Interface & Supply

### Analog output

|        |   |
|--------|---|
| Signal | 4 ... 20 mA (2-wire)                              |
| Alarm  | Switch output, normally open, max. 40 VDC, 200 mA |

### Fieldbus

|          |   |
|----------|---|
| Protocol | Modbus/RTU, , Modbus/TCP (with Display version) |
|----------|---|

### Supply

|                     |   |
|---------------------|---|
| Voltage supply      | 24 VDC / 10 W (without Display)<br>24 VDC / 20 W (with Display) |
| Current consumption | 420 mA (without Display)<br>840 mA (with Display)               |

### Data interface

|     |                            |
|-----|----------------------------|
| USB | USB Micro with OTG support |
|-----|----------------------------|

## General data

### Configuration

|        |  |
|--------|--|
| Others | Device comes pre-configured<br>Configuration can be done via on-screen touch |
|--------|--|

### Display

|            |                       |
|------------|-----------------------|
| Integrated | 5" color touch screen |
|------------|-----------------------|

### Data Logger

|         |  |
|---------|--|
| Storage | 30 million measurement values (optional) |
|---------|--|

### Miscellaneous

|                       |   |
|-----------------------|---|
| Electrical connection | 3X M12  |
| Protection class      | IP65  |
| Process connection    | 6 mm quick connect (pressurized version), barb connection (ambient version) |
| Material              | PC, Al alloy  |
| Weight                | S130: 1.9 kg<br>S132: 3.2 kg  |
| Dimensions            | S130: 271 x 205 x 91 mm<br>S132: 300 x 240 x 120 mm                         |

### Operating conditions

|                       |  |
|-----------------------|--|
| Medium                | Compressed air and gases free of corrosive, aggressive, caustic and flammable constituents |
| Flow rate             | 2.83 l/min   |
| Sample rate           | One sample per minute  |
| Medium quality        | ISO 8573-4   |
| Medium temperature    | 0 ... +40 °C   |
| Medium humidity       | < 90 %, no condensation  |
| Operating pressure    | 0.3 ... 1.5 MPa  |
| Ambient temperature   | +10 ... +40 °C   |
| Ambient humidity      | 0 ... 90 % rH  |
| Storage temperature   | -10 ... +50 °C   |
| Storage humidity      | < 90 % with no condensation  |
| Transport temperature | -30 ... +70 °C Without display<br>-10 ... +60 °C with display                              |

## Ordering

Please use the following tables to assist in placing your order with our sales staff.

### Particle Counter for Compressed Air: P = 0.3 ... 1.5 Mpa

#### Order No. Description

|           |   |
|-----------|---|
| S604 1303 | S130, Particle Counter for Compressed Air, size range d: $0.3 < d \leq 5.0 \mu\text{m}$ , 2.83 l/min                  |
| S604 1305 | S130, Particle Counter for Compressed Air, size range d: $0.3 < d \leq 5.0 \mu\text{m}$ , 2.83 l/min, display, logger |
| S604 1308 | S132, Particle Counter for Compressed Air, size range d: $0.1 < d \leq 5.0 \mu\text{m}$ , 2.83 l/min                  |
| S604 1309 | S132, Particle Counter for Compressed Air, size range d: $0.1 < d \leq 5.0 \mu\text{m}$ , 2.83 l/min, display, logger |

### Accessories

#### Order No. Description

|           |                                   |
|-----------|-----------------------------------|
| A554 0120 | Transport case S120 / S130        |
| A554 0116 | Transport case S132               |
| A554 1204 | Zero count filter                 |
| R200 0130 | Calibration particle counter S130 |
| R200 0131 | Calibration particle counter S132 |



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