

## Continuous dust monitoring in ambient air with fan control

PROCESS MONITORING SYSTEMS FOR SOLIDS

Product Information



### FEATURES:

- The creation of dust explosion zones can be prevented.
- Dust concentrations at work stations are safely monitored.
- Possible dust escape from system parts is quickly detected.
- AirSafe 2 can be used as early detection for dust which could endanger the workplace.
- Available for applications in zone 22 dust (EX 3D)
- With our fan control system, you are sure of the validity of the measurement.



certificated  
according to **ATEX**

# TECHNOLOGY

## APPLICATIONS

Electrodynamic sensor technology from ENVEA – SWR engineering has proven itself in thousands of applications for measuring dust concentrations in process systems.

AirSafe 2 is a new measuring instrument which can monitor the dust concentration in ambient air, for example in control system areas, silo areas, boiler houses or work stations.

AirSafe 2 monitors concentrations on the basis of preset limit values.

For example, to avoid the accumulation of dust in explosion zones or to detect unnoticed accumulation of dust from processes.

AirSafe 2 can be used as early detection for dust which could endanger the workplace.

## OPERATION

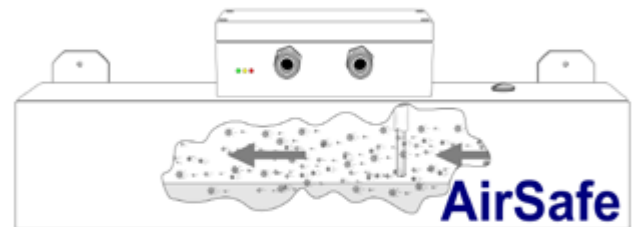
AirSafe 2 consists of a flow duct and integral electrodynamic dust sensor.

A current of air is drawn through the duct at approximately 100 m<sup>3</sup>/h.

Dust particles, carried in the air current, pass the sensor, this generates a charge transfer, which is used as the measurement signal.

This signal is converted to electrical process outputs which could be used for display or control.

The fan is fully monitored and will provide an alarm in case of failure. This guarantees the validity of the measurement.



## DESCRIPTION

The AirSafe 2 flow duct is 500 mm long and 100 x 100 mm square.

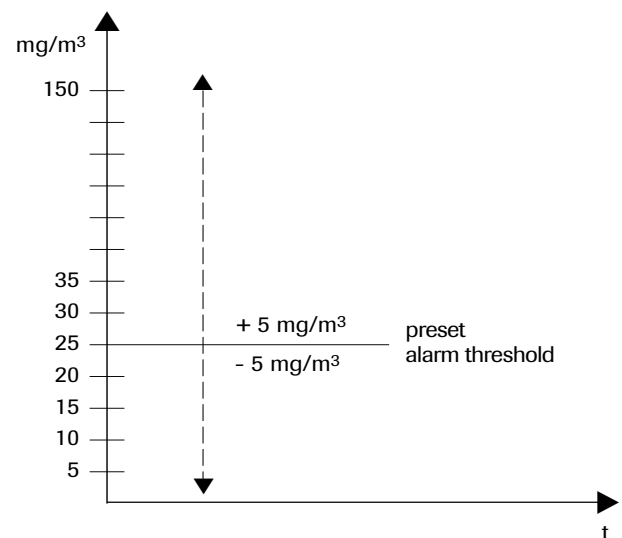
The integral dust sensor has a relay output which energises when the set limit value is exceeded.

The unit is supplied pre-calibrated.

The alert point is set to approximately 25 mg/m<sup>3</sup> of dust.

The user can set his own alarm threshold.  
The measuring range starts at 0.1 mg/m<sup>3</sup>.

The alert point can be changed in steps of 5 mg by simply pressing a button.



# TECHNOLOGY

## SYSTEM

The sensor has a relay output for alarms, an analog 4 ... 20 mA active output and can also communicate with a PC or a PLC via Modbus RTU RS 485.

Using our PRO software version, up to 10 sensors can be displayed and recorded simultaneously.

## ASSEMBLY AND INSTALLATION

AirSafe 2 can be installed anywhere in a room.

Except of high ambient temperatures, there is no need to maintain distances from units or walls.

AirSafe 2 can be wall-mounted using brackets provided.

This is a versatile instrument that can be used in various environment and multiple application.

A stand alone version is also available.



## BENEFITS

- Fan is fully monitored. This allow to be 100 % of the measurement validity.
- The creation of dust explosion zones can be prevented.
- Dust concentrations at work stations are safely monitored.
- Possible dust escape from system parts is quickly detected.

## USAGE IN EX AREAS

Marking AirSafe 2 EX 3D:  $\text{Ex}$  II 3D Ex ic tc IIIC T 120 °C Dc

**Hazardous Area  
DustEx-Zone 22**

**Non-hazardous  
Area**



This product comply with EN60079-0 standard.

## TECHNICAL DATA

### Sensor

Measured objects	Solid particles in a gas stream
Particle size	0.3 µm or larger
Measurement range	From 0.1 mg/m <sup>3</sup>
Ambient temperature	-20 ... +60 °C
Humidity	95 % RH (non-condensing)
Measurement principle	Electrodynamic
Fan failure detection	Yes
Damping time	1 s
Output signals	Relay output, either NC or NO Analog output 4 ... 20 mA ModBus RTU 485
Protection	Std IP 66 EX IP 66
Air Flow	Std 100 m <sup>3</sup> /h EX 130 m <sup>3</sup> /h
Dimensions	500 x 100 x 240 mm (L x W x H)
Housing material	Sensor: Aluminium Flow duct: St52 power-coated
Power supply	24 V DC ± 10 %
Rating	Max. 10 W
Electrical connection	Screw terminals
Weight	5.5 kg

