



Manufactured by
Superior
with
Solids
SWR

AirSafe

Continuous ambient air
dust monitoring



Applications

Triboelectric sensor technology from SWR has proven itself in thousands of applications for measuring dust concentrations in process systems.

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

AirSafe monitors concentrations on the basis of pre-set limit values.

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

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

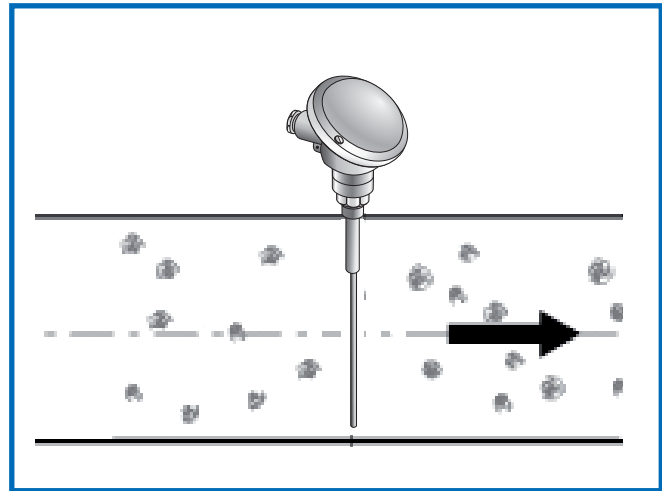
Operation

AirSafe consists of a flow duct and an integral triboelectric dust sensor.

A current of air is drawn through the duct at approximately 3,500 ft³/hr.

Dust particles carried in the air current impact the sensor probe as it passes by. This generates a charge, which is used as the measurement signal.

This signal is converted to electrical process outputs to be used for display or alarm of solid particulates in the air.



Description

The AirSafe flow duct is 19.68 inches long and 3.94 x 3.94 inch square.

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

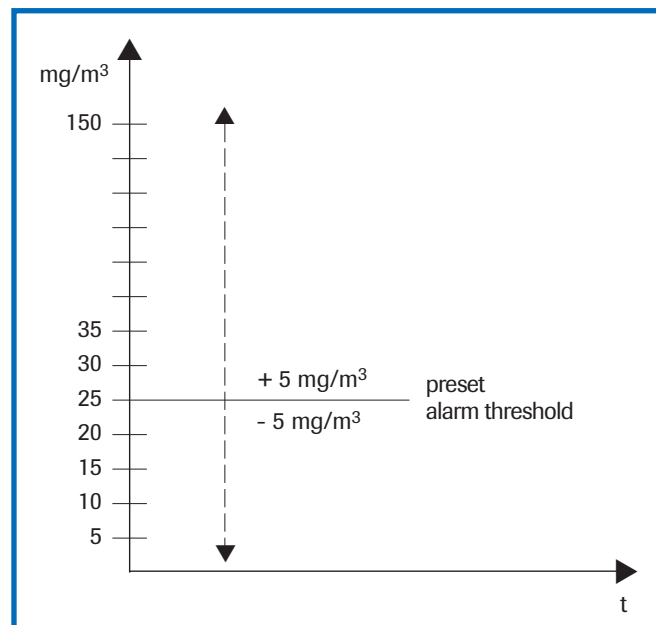
The unit is supplied pre-calibrated.

The alarm point is set to approximately 25 mg/m³ of dust.

The user can set his own alarm threshold.

This may be set within a range of approximately 5 mg/m³ to 150 mg/m³.

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

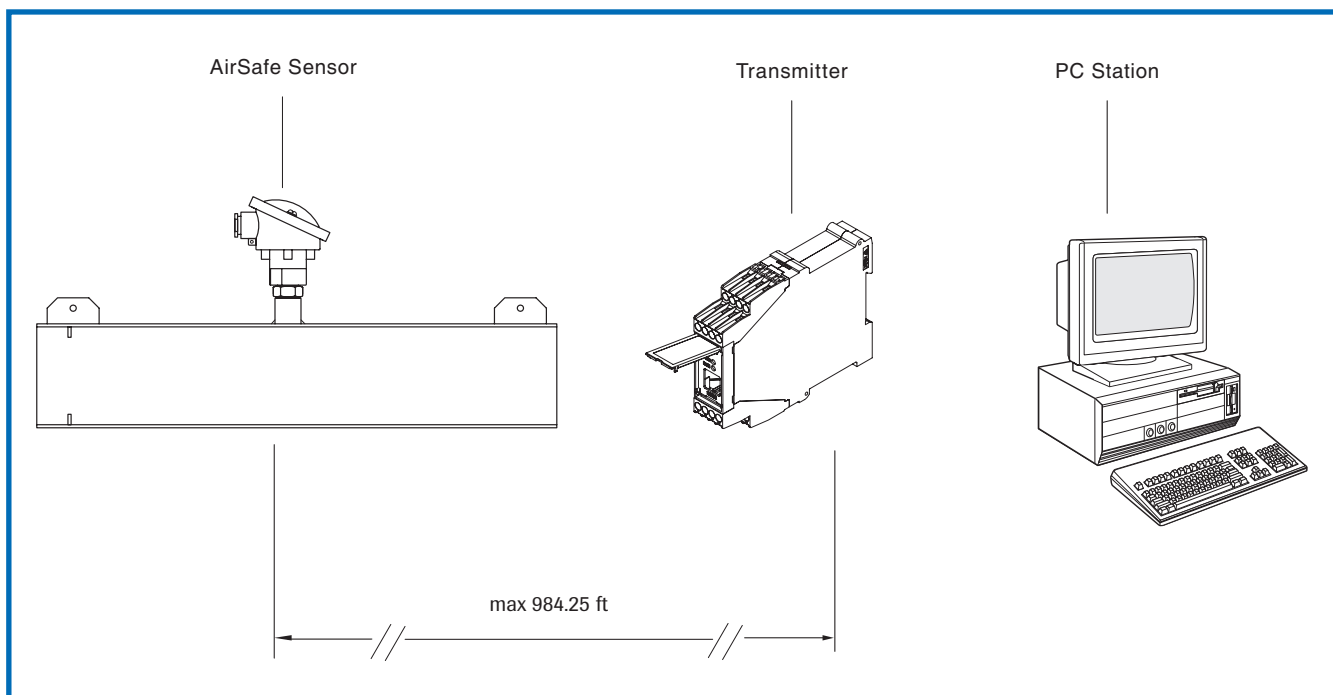


Product Information

As well as a relay output, the sensor also has an RS 485 which can be connected to a wall mount or DIN-rail mount transmitter.

The output from the transmitter is a standard 4...20 mA and a ModBus RTU RS 485 output.

By using the visualization software, up to 10 measuring points can be displayed, saved and interfaced to other computer programs, e. g. Excel.



Assembly and installation

AirSafe can be installed anywhere in a room.

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

AirSafe can be wall-mounted using brackets provided.

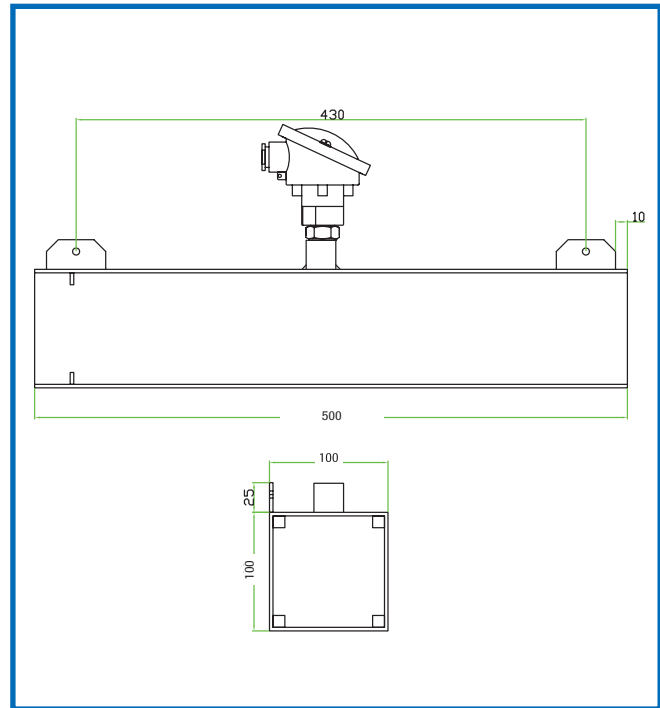
Benefits

- The creation of dust explosion zones can be prevented.
- Dust concentrations at work stations are safely monitored.
- Possible dust leaks from system parts is quickly detected.

Technical data

AirSafe duct detector

Measured objects	Solid particles in a gas stream
Particle size	0.3 µm or larger
Measurement range	From 0.1 mg/m³
Ambient temperature	- 4 ... + 140 °F
Humidity	95 % RH (non-condensing)
Measurement principle	Triboelectric
Damping time	1 s
Output signals	Relay output, either NC or NO
Dimensions	166 x 33 x 80 (L x W x H)
Housing material	Sensor: Aluminium Flow duct: St52 power-coated
Power supply	24 ± 10 % V DC
Rating	Max. 10 W
Electrical connection	Screw terminals
Weight	12.12 lbs



Transmitter (DIN rail)

Power supply	24 ± 10 % V DC
Power consumption	20 W / 24 V
Protection type	IP 40 to EN 60529
Ambient operating temperature	14 ... 113 °F
Dimensions	23 x 90 x 118 mm (W x H x D)
Weight	Approx. 6.06 oz
Connection terminals conductor cross-section	0.2 - 2.5 mm² [AWG 24-14]
Current output signal	4 ... 20 mA, load < 500 Ω
Switch output measurement alarm	Relay with switchover contact Max. 250 V AC, 1 A
Interface	ModBus (RS 485)
Data backup	Flash memory

