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.

Ex certificated according to **ATEX**

TECHNOLOGY

APPLICATIONS

Electrodynamic sensor technology from ENVEA Process 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.
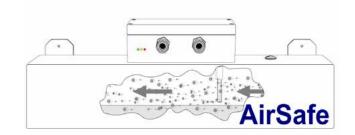
OPERATION

AirSafe 2 consists of a flow duct and integral electro-dynamic dust sensor.

A current of air is drawn through the duct at approximately 100 m³/h.

Dust particles, carried in the air current, passes 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 garanty the validity of the measurement.
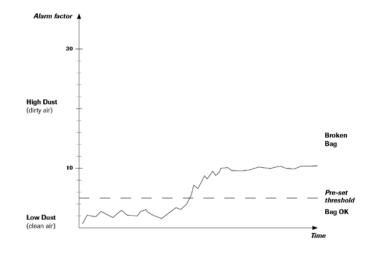

DESCRIPTION

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 device is delivered with a pre-set alarm level. This pre-set allow to detect filter failure in most case. It can be individually adjusted to the respective application by the operator.

The sensor allows the user to set the alarm threshold himself. This could be done using the on-button method or via our software (Dust Base).

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: ⟨Ex⟩ **II 3D Ex ic tc IIIC T120 °C Dc**

**Hazardous Area
DustEx-Zone 22**

**Non-hazardous
Area**

This product complies with: EN 60079-0:2012 + A11:2013, EN 60079-31:2014, EN 60079-11:2012.

SPECIFICATIONS

TECHNICAL DATA

Sensor

Measured objects	Solid particles in a gas stream
Particle size	0.3 µm or larger
Measurement range	From 0.1 mg/m³
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	IP66 (IP20 for functionality according EN DIN 60529: 2014-09)
Air Flow	Std 100 m³/h EX 130 m³/h
Dimensions	500 x 100 x 240 mm (L x W x H)
Housing material	Sensor: Aluminium Flow duct: St37 powder-coated
Power supply	24 V DC ± 10 %
Rating	Max. 10 W
Electrical connection	Screw terminals
Weight	5.5 kg

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