

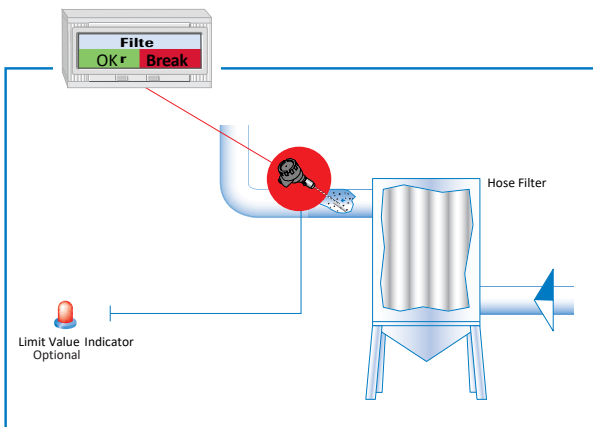


TECHNOLOGY

This has been specially developed to monitor treated sides after filters reliably and without time delay for filter breaks.

It can be used in metallic ducts in which dust particles are to be detected in the gas flow. Its area of application begins at dust levels of 0.1 mg/m³. It can be used in Ex zones (Dust zone 22 / Gas zone 2). Thanks to its speed and reliability, it can also be used optimally as an alternative and/or extension to the "police filter", as well as an alternative to differential pressure measurement.

This sensor works on the basis of the electrodynamic principle. A charge transfer occurs as soon as particles flow past the measuring probe. A measuring signal is generated from this, which triggers a switching contact as soon as a limit value is reached. USE / FUNCTION Limit



FEATURES:

- Detects all dust types
- Can be used in all purge gas and dust ducts
- Immediate detection of filter damages
- Simple commissioning (Plug & Play)
- Prevention of process-induced dust Ex zones
- Individual choice of alarm threshold
- Rapid and easy retrofitting
- 4 ... 20 mA output at sensor



How does it work?

This filter monitoring sensor is based on the electrodynamic technology: dust particles streaming past or impinging on the probe exchange the smallest electrical charges with the probe. These small electrical charges result in a signal which is proportional to the dust content in the air flowing past, even if particles accumulate on the probe. A reliable measured value can consequently be obtained with this virtually maintenance-free and wear-free measuring system.

After switching on, a short flash sequence indicates that the sensor is connected: The red LED then flashes during the internal system check. After this, the yellow LED flashes according to the multiplier setting for the alarm threshold.

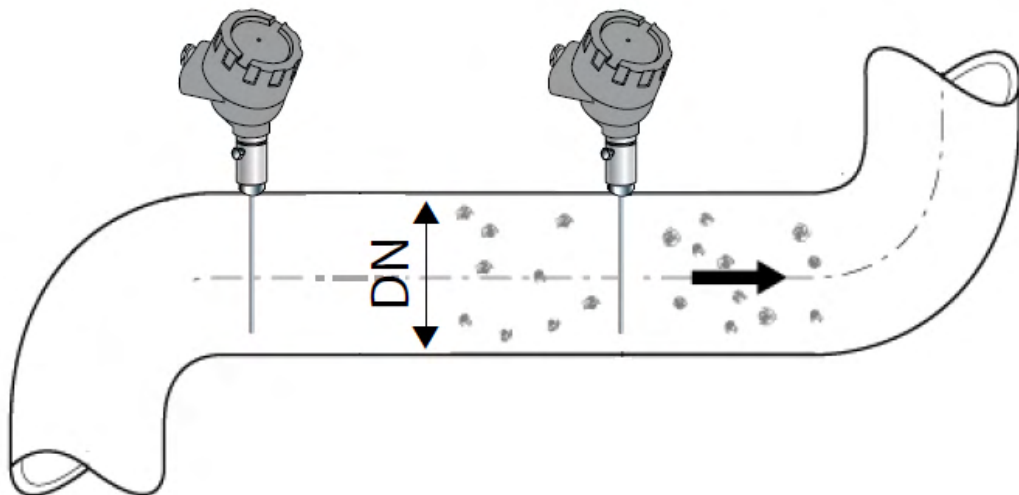
The sensor then starts to monitor the dust content. This is indicated by the flashing green LED. The flashing frequency indicates the ratio of the measured value to the alarm threshold: the lower the flashing frequency, the lower the dust content – the higher the flashing frequency, the closer the measured value is to the alarm threshold. The green LED goes out if the alarm threshold is reached or exceeded, and the yellow LED indicates the alarm situation. At the same time, the yellow LED indicates that the relay is switched.

The internal error message from the sensor also indicates any faults occurring via the relay and the current output. Its measuring system offers an integrated 4 . . . 20 mA current output as a trend display for the dust content. The sensor is designed such that the current output does not need to be calibrated. The measured value is only output by means of a linear function, whereby a current of 4 mA corresponds to a measured value of zero and a current of 12 mA corresponds to the alarm threshold value. Therefore, the alarm threshold always corresponds to half of the measuring range.

If a fault is detected during the internal function check, the current output is set to 2 mA.

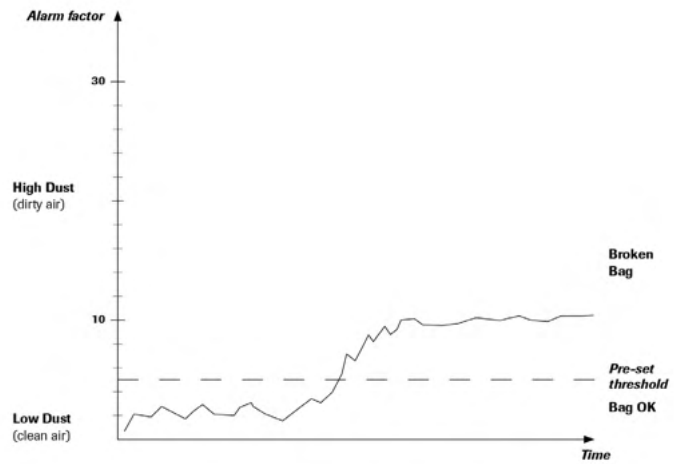
The best installation position for the sensor in a duct or pipe is located in an area in which the particles are uniformly distributed and flow past the sensor at uniform velocity.

The installation site can be in a horizontal or vertical duct. With pipeline diameters larger than DN600, the installation location should be at the output of a curve on the centrifugal force side.



SYSTEM

This is a compact device that operates on 24 V DC power supply. The device is delivered with a pre-set alarm level. This pre-set allow to detect filter failure in most case. The alarm level value correspond to an output signal of 12mA. 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).



ADVANTAGES

- Usable in all clean gas and dust channels
- All dust types can be detected
- Easy commissioning (plug & play)
- Immediate detection of filter breaks
- Avoidance of process-induced dust zones subject to explosion hazards
- Individual choice of the alarm threshold
- Fast and simple refitting
- 4 ... 20mA analog trend signal output

TECHNICAL

Sensor	
Measurement objects	Solid particles in a gas flow
Measurement range	From 0.1 mg/m ³
Process temperature	Max. 140 °C (higher temperature on request)
Ambient temperature	- 20 ... + 60 °
Pressure	Max. 2 bar
Gas velocity	Min. 4 m/s
Humidity	95 % RH (non-condensing)
Principle	Electrodynamic
Damping time	1 s
Output signals	4 ... 20mA analog output (Active) Relay
Sensor rod	Total length: 260 mm length of stainless steel rod: approx. 194 mm
Enclosure	Aluminium
Using in Ex-zones	Cat. 3 G/D (zone 2 gas / zone 22 dust)
Protection category	IP65
Power supply	24 V DC ± 10 %
Power consumption	2.5 W
Electrical connection	<ul style="list-style-type: none"> • screw-type / terminal box • M12 connector (optional)
Assembly	Via ½" thread or Tri-Clamp connection
Weight	Approx. 1kg

