Fine dust sensor

Dr. Födisch
Umweltmesstechnik AG

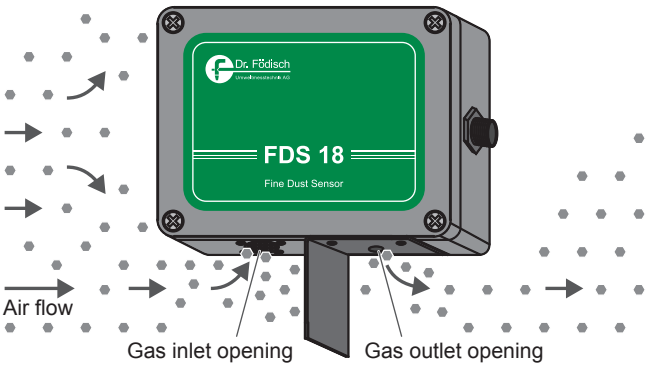
Optical sensor for continuous measurement and monitoring of fine dust contents PM2.5 for immission control in the environment

APPLICATION

By means of the FDS 18 it is possible to determine the current particulate matter concentration of the environment and make out health hazards.

The continuous monitoring of the air quality is usable indoor and outdoor in the environment and at work places.

SCHEME OF AIR FLOW



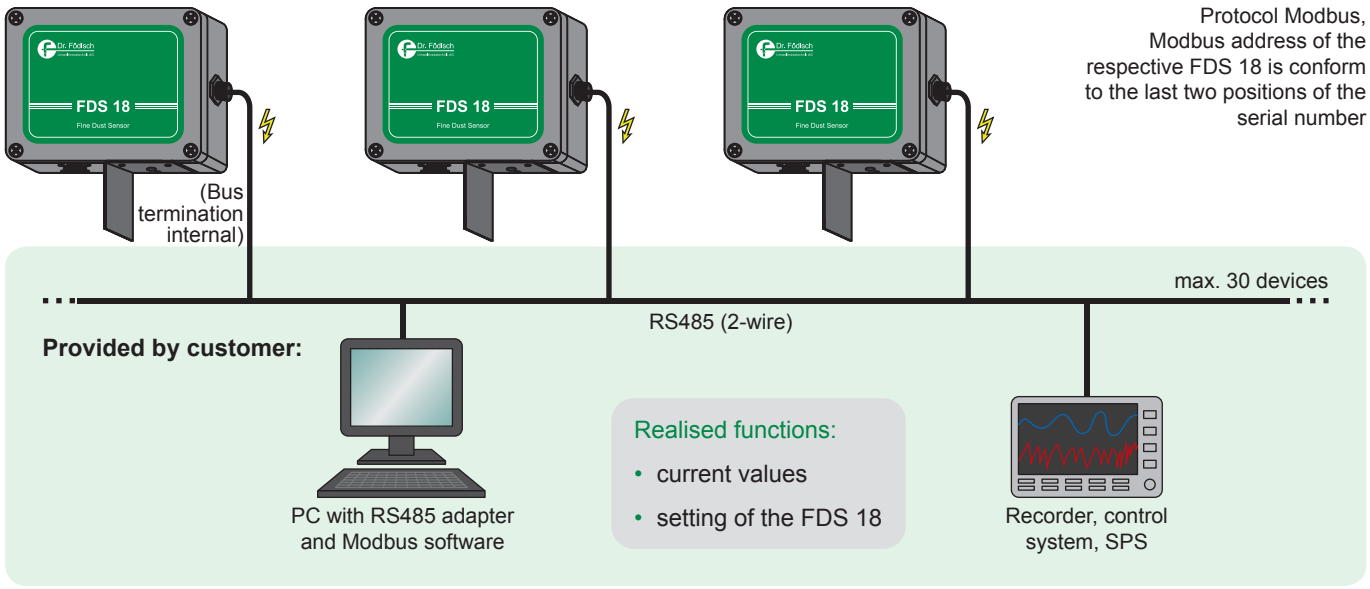
YOUR BENEFITS AT A GLANCE

- real-time measurement of PM2.5 for continuous monitoring of air quality
- active suction
- pre-separation for particles bigger than 2.5 µm
- patented electrostatic precipitator for zero point setting
- network-compatible
- easy installation without special tool
- long-lasting components

PRECONDITIONS ON SITE

- ambient temperature: -20...+50 °C
- relative humidity: 0…95%
- place with representative dust loading
- protection against draught (optional partition plate for mounting in a duct)
- rain and splash water protected
- no direct solar radiation
- location free of percussion
- air flow up to 8 m/s (in observance of flow direction)
- M12 plug-in connection with 12 V DC power supply and RS485 RTU interface

INSTALLATION EXAMPLE



TECHNICAL DATA

Housing:	lightweight and compact sensor housing made of plastic; IP33
Dimensions:	128 mm x 132 mm x 80 mm (w x h x d)
Weight:	approx. 500 g
Ambient temperature:	-20...+50 °C
Relative humidity:	0...95%
Measuring method:	scattered light measurement
Average dust contents:	up to 500 µg
Detection limit:	2 µg/m³
Internal flow:	approx. 0.5 l/min
Sensor:	optical sensor with pre-separation and heating
Zero point setting:	automatic, interval 2-8 h (by internal electrostatic precipitator with high voltage module, approx. 10 kV)
Fan:	for flow enforcement
Conditioning:	heating for measuring gas (compliance with the dew-point spread), integrated over temperature protection
Connections:	M12 connection, for data output and power supply
Interface:	RS485 (Modbus)
Power supply:	12 V DC, 1.8 A