



FDS 17

Product Information

The fine dust sensor FDS 17 is an optical sensor for continuous, simultaneous measurement and control of fine dust contents PM10 and PM2.5. It can be integrated into several applications.

Application

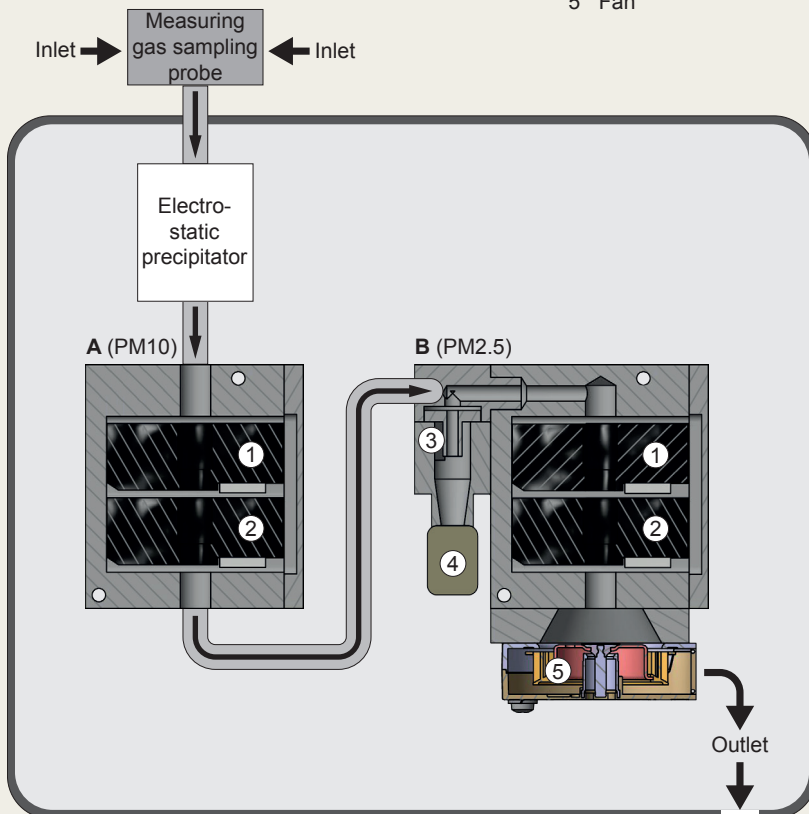
By means of the FDS 17 it is possible to determine the current fine dust loading of the environment by simultaneous measurement of PM10 and PM2.5 and to make out health hazards.



Schematic design

A: Sensor module for measurement of PM10
B: Sensor module for measurement of PM2.5

- 1 Measuring sensor
- 2 Reference sensor
- 3 Pre-separator
- 4 Residual dust reservoir
- 5 Fan



Application examples:

- monitoring of air quality (ambient air near industrial areas etc.)
- monitoring of fine dust in the range of production (workshops, factory buildings etc.)
- monitoring of room air quality in offices and public institutions (hospitals, schools etc.) or in the private domain
- upgrading of weather stations



Function

The determination of the dust content in the FDS 17 is based on the method of scattered light measurement.

After the fine dust of the ambient air has entered the device via a measuring gas probe and has passed the electrostatic precipitator, the fine dust concentrations for PM10 and PM2.5 are measured in succession by the respective sensor module. For the analysis of alveolar particle fractions (PM2.5) an integrated pre-separator with residual dust reservoir is used.

In the device there is a periodic control and correction of zero point and reference point which is realised by the electrostatic precipitator with integrated high voltage module. A high zero point stability is achieved by evaluation of the internal measuring signals.

Highlights of the device

- simultaneous measurement of PM10 and PM2.5
- patented zero point control by electrostatic precipitator
- robust design
- low-noise operation
- active suction
- long-term stability
- cross linking of several FDS 17
- network-compatible, WLAN
- easy installation without special tool
- low operational costs
- first-class price-performance ratio

Technical data

Housing:	compact sensor housing made of aluminium, IP 33
Dimensions:	200 mm x 297 mm x 121 mm (w x h x d)
Weight:	approx. 4.0 kg
Power supply:	100-240 V AC, 0.7 A, 50-60 Hz (optional 12-24 V DC, 2.1 A); pre-fuse min. 5 A
Ambient temperature:	-20...+50 °C
Relative humidity:	0...95%
Measuring method:	scattered light measurement
Zero point setting:	by internal high voltage module, approx. 10 kV
Sensors:	2x sensor module with two optical sensors for each; separated control and signal evaluation
Flow:	2 l/min
Interface:	RS485 (Modbus)
Clip contacts:	max. 0.5 mm; power supply connection: max. 2.5 mm
Fan:	for flow enforcement
Heating:	for conditioning of measuring gas (compliance with the dew-point spread)
Average dust contents:	up to 500 µg/m ³ (max. 2000 µg/m ³)
Detection limit:	2 µg/m ³
Optional:	- 4...20 mA current loop - WLAN module

Special models are possible on request.