

# FDS 15

The fine dust sensor FDS 15 is an optical sensor for continuous measurement and control of fine dust contents. It can be integrated into several applications.

## APPLICATION

The FDS 15 can determine the current amount of fine dust load in the air and alert if there are health hazards.

The FDS 15 detects PM10 / PM2.5 particles.

Application examples:

- Monitoring of fine dust in ambient air on urban roads like intersections, in residential areas or on highways
- Upgrading of weather stations

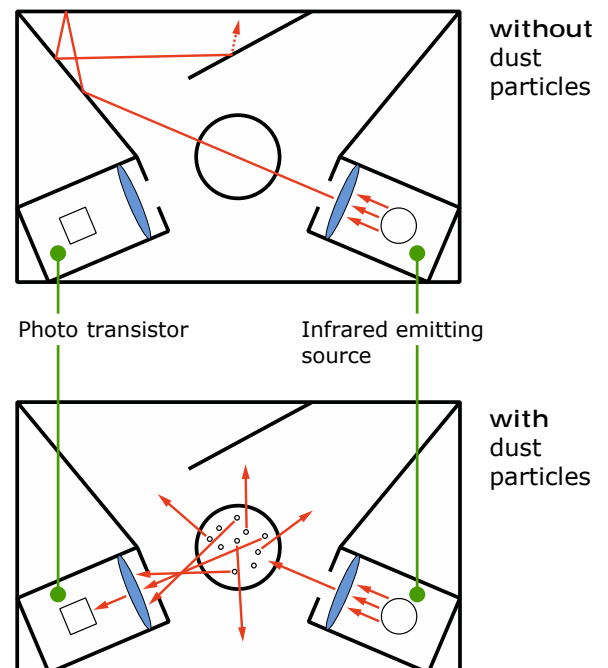


## FUNCTION

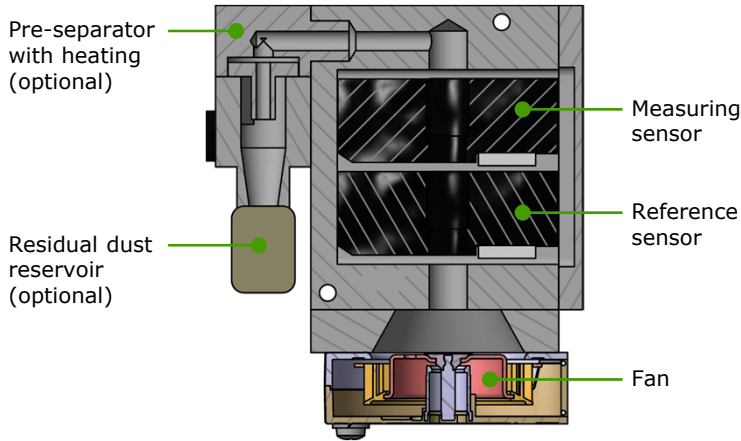
The method of which the FDS 15 determines the dust content is based on scattered light measurement. The collected air is pre-heated to 50 °C and the flow of the air is regulated by the integrated fan (2 l/min). The velocity of which the gas is measured is determined by the presence of particles.

In the FDS 15 a periodic control and correction of zero point and reference point is conducted. By evaluation of the internal measuring signals, a high zero point stability is achieved.

## LIGHT PATH IN THE SENSOR HOUSING



### SENSOR DESIGN



### HIGHLIGHTS OF THE DEVICE

- robust design
- low-noise operation
- active suction
- long-term stability due to two sensors
- cross linking of several FDS 15
- network-compatible, Wi-Fi
- easy installation without special tool
- low operational costs
- first-class price-performance ratio

### TECHNICAL DATA

Housing:	compact sensor housing made of aluminium
Dimensions:	130 mm x 160 mm x 90 mm (w x h x d)
Weight:	approx. 2 kg
Protection degree:	IP 33
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 → measurement of fine dust PM2.5 (according to DIN EN 481) or PM10; PM1 in progress
Sensors:	2x optical sensor; 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 200 µg/m <sup>3</sup> (with electrostatic precipitator 500 µg)
Detection limit:	2 µg/m <sup>3</sup>
Optional:	<ul style="list-style-type: none"> <li>• 4...20 mA current loop</li> <li>• Wi-Fi module</li> <li>• pre-separator with regulated heating</li> <li>• electrostatic precipitator</li> </ul>

Special models are possible on request.