

# FDS 15

## Fine Dust Sensor

### Product Information

The Fine Dust Sensor FDS 15 is an optical device for continuous measurement and control of fine dust (PM10 and PM2.5) particles, and can be used both to monitor plant performance and ambient levels for occupational health.

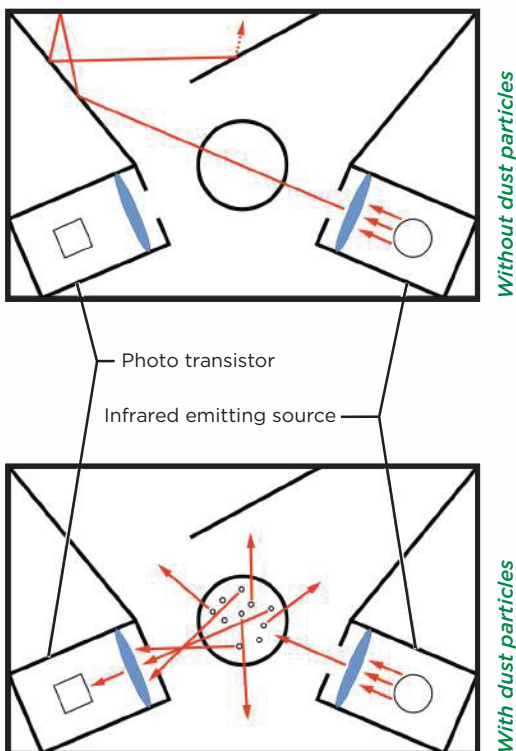


### APPLICATION

The FDS 15 allows the fine dust loading in the environment to be determined for monitoring and to alert for potential health hazards.

### INSTALLATION EXAMPLE

Light path in the sensor housing



### APPLICATION EXAMPLES

- Monitoring of fine dust in production areas (workshops, factory buildings etc.)
- Monitoring of room air quality in offices and public institutions (hospitals, schools etc.) or in the private domain.
- Monitoring of ambient air.
- Weather stations.

### TECHNOLOGY

The FDS 15 uses the scattered light principle to determine ambient dust content. The integrated fan pulls air into the analyser at a specific velocity chosen to representatively determine the dust particles. Sampled air is pre-heated to 50°C. For the analysis of alveolar particle fractions (PM2.5) and integrated pre-separator is used.

The FDS 15 carried out periodic control and correction of the zero and reference point. Evaluation of the internal measurement signals allows a high level of stability to be achieved.



• EN 15267-3 Tested  
• QAL1 Certified  
• TÜV Approved  
• Annual inspection



• ISO 9001:2015  
• ISO 14001:2015  
• ISO 45001:2018



• Certified in compliance with MCERTS Performance Standards  
• Certificate no: Sira MC170329/00

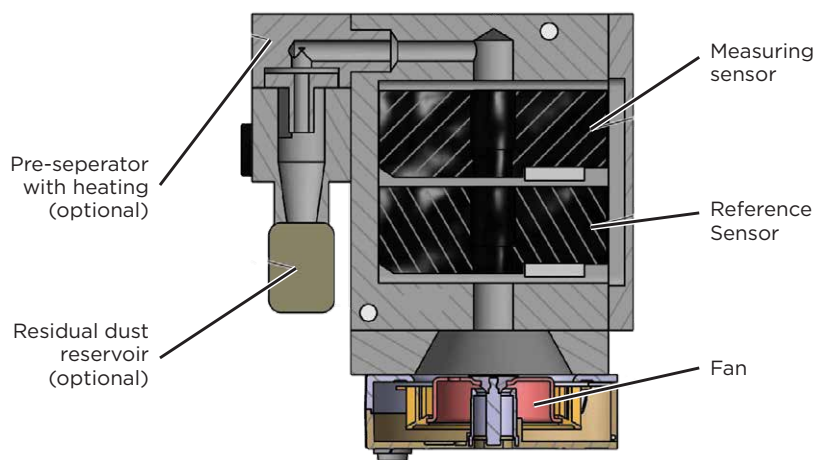


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**SENSOR DESIGN**



**Features and Benefits**

- small but robust design
- low-noise operation
- measurement and alarms of potentially dangerous levels of PFM2.5/PM10 in the workplace
- gives early indication of failing filtration/ extraction plant
- cross linking of several FDS 15
- network-compatible, WLAN
- easy installation
- low operational costs
- Reassurance to neighbours and/or protection from nuisance emissions

**TECHNICAL DATA**

|                        |                                                                                                                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Housing:               | compact sensor housing made of aluminium; integrated pre-separator for measurement of fine dust (PM2.5) according to DIN EN481                                                          |
| 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 (PM <sub>2.5</sub> ) according to DIN EN 481                                                                                     |
| 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>- WLAN module</li> <li>- pre-separator with regulated heating</li> <li>- electrostatic precipitator</li> </ul> |

Special models are possible on request.

**V2.0 .0**



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