



FIDAS® SMART SYSTEM

AMBIENT AIR QUALITY MEASUREMENT

Highly Accurate Fine Dust Measurement

Made in Germany

Compact. Accurate. Certified.

FIDAS[®] SMART SYSTEM

Do you want to ensure compliance with the requirements of official immission controls? Do you want to obtain additional air quality data? FIDAS[®] SMART 100 is suitability-tested in accordance with EN 16450 and also MCERTS indicative certified, allowing a valuable contribution to your processes.

The highly advanced, certified and compact measuring device FIDAS[®] SMART 100 offers optimal conditions with regard to highly accurate fine dust measurement for industrial plants, inner-city zones, and for temporary or permanent densification of official air quality measuring networks.

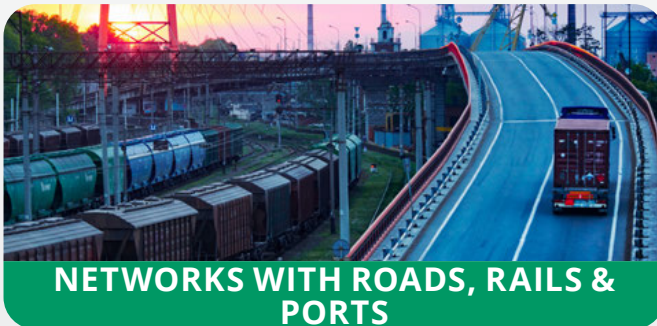
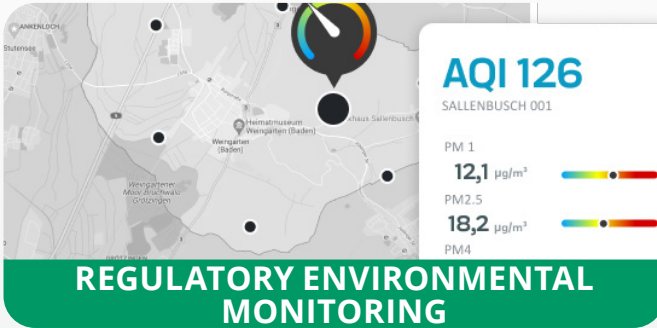
The airborne particulate matter is analyzed continuously and reliably, providing comprehensive and accurate information.

By means of integrated sensors, FIDAS[®] SMART 100 can also record pressure, temperature and relative humidity of the ambient air as a standard feature.

The measurement data can be transmitted via the Palas Cloud MyATMOSPHERE.



Application Examples



Principle of Operation

FIDAS® SMART 100 is a compact aerosol spectrometer for ambient air. By using the measuring principle of optical scattered light measurement on single particles based on the technology of the EN 16450 certified FIDAS® 200, it offers optimal conditions for air quality evaluation.

FIDAS® SMART 100 features a heated aerosol inlet. This means that the measurement result is independent of humidity or fog droplets. It is tested for compliance with EN 16450 for $PM_{2.5}$ and PM_{10} . It is also MCERTS Indicative certified for $PM_{2.5}$ and PM_{10} .



FIDAS® SMART 100 is designed for continuous operation and can easily be operated for extended periods without any need of recalibration.

Equipped with a rugged, modern weather shield, it can be combined with a variety of commercially available mounting systems via a VESA mount. The compact design simplifies installation and integration into existing infrastructure.

FIDAS[®] SMART SYSTEM

FIDAS[®] SMART SYSTEM is offered in two suitability-tested designs to meet different measurement requirements and installation situations.

- FIDAS[®] SMART 100 easy to install outside e.g., on top already existing shelters and poles
- FIDAS[®] SMART 100 E with extended inlet for existing roof openings



FIDAS[®] SMART SYSTEM is offered with different licence models:

... for regulatory entry level measurements

- FIDAS[®] SMART 100 / 100 E $PM_{2.5}$
- FIDAS[®] SMART 100 / 100 E PM_{10}

... for regulatory measurements

- FIDAS[®] SMART 100 / 100 E $PM_{2.5}$, PM_{10}

... with additional parameters

- FIDAS[®] SMART 100 PM_1 , $PM_{2.5}$, PM_4 , PM_{10} , PM_{xCE} , TSP, C_N , PSD, CO_2 , TVOC
- FIDAS[®] SMART 100 E PM_1 , $PM_{2.5}$, PM_4 , PM_{10} , TSP, C_N , PSD

Special Advantages and Benefits

LATEST TECHNOLOGY

- MCERTS Indicative certified (PM_{2.5} and PM₁₀) and EN 16450 compliant (PM_{2.5} and PM₁₀)
- High accuracy due to advanced algorithms
- Fast data interfaces
- Compact design and easy installation making it ideal for temporary measurement campaigns
- Also available as **FIDAS® SMART 100 E** with extended aerosol inlet and thus easily integrable into existing measuring containers

DIFFERENT MEASUREMENTS

- All parameters are measured and calculated simultaneously
- Ambient Air Quality Professional Package (optional): PM₁, PM₄, PM₁₀, TSP, C_N, PSD, CO₂, TVOC, source indication, Air Quality Index

DURABILITY

- Long-term stability thanks to self-calibration; up to two years of operation without calibration possible
- Unique: on-site recalibration with NIST traceable test dust

Technical Features

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| Measuring principle | Optical light scattering of single particles |
| Reported data | PM ₁ , PM _{2.5} , PM ₄ , PM ₁₀ , TSP, C _N , particle size distribution, pressure, temperature, relative humidity, CO ₂ , TVOC, Air Quality Index, source indication (depending on configuration) |
| Measurement range (number C _N) | 0–20,000 particles/cm ³ |
| Measurement range (size) | 0.175–20 µm |
| Measurement range (mass) | 0–20,000 µg/m ³ |
| Measurement uncertainty | R2 > 0.98 for PM _{2.5} and R2 > 0.94 for PM ₁₀ versus EN 16450-certified FIDAS® 200 (15 min average, each) |
| Size channels | 64 (32/decade) |
| Time resolution | 1 s |
| Interfaces | USB, Ethernet (LAN), Wi-Fi, 4G (optional via LTE stick) |
| User interface | Touchscreen, 800 • 480 Pixel, 7" (17.78 cm) |
| Protocols | UDP, ASCII, Modbus |
| Data Management | Prepared for connection to the Palas Cloud MyATMOSPHERE („MyATMOSPHERE-ready“)* |
| Power supply | 100/240 V, 50/60 Hz |
| Power consumption | Normal operation: 15 W, max. 60 W |
| Dimensions (H • W • D) | 240 • 320 • 190 mm |



As an aerosol technology expert, Palas® Germany is committed to providing users with solutions for the generation, conditioning, measurement and analysis of aerosol particles. Based on the unique advantages of its own technology, Palas® developed a variety of application cases in ambient air quality monitoring, particle filtration performance testing and various scientific research fields. Palas Instruments (Shanghai) Co., Ltd. is a wholly owned subsidiary of Hong Kong Palas (Asia) Limited. As one of the global branches of Palas GmbH, it has legally obtained the Palas trademark authorized by Palas GmbH in Exclusive use rights in China and Asia.

As a company that has passed the ISO 9001:2015 quality management system certification, Palas®'s test rig solutions can execute particle filtration performance tests for filter media and filter elements according to applicable international, national and regional standards. In terms of environmental protection, Palas®'s equipment meets the requirements of multiple environmental monitoring standards (EN 15267, EN 16450, HJ653, GBZ/T 192.6, etc.) for indoor and ambient PM2.5, PM10, particle number size distribution monitoring and analysis.

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