TOPAS®

Technologie-orientierte Partikel-, Analysen- und Sensortechnik

Dynamic Dilution System

DDS 560

Dynamic Dilution System Series DDS 560

There are many measuring tasks where particle size and particle number are to be determined even at high concentrations. Particle counters are not designed for such concentrations, i. e. they will then work in the coincidence range and not provide reproducible results. Due to an upstream defined dilution of the aerosol, this measuring technique can now also be used for high concentrations. For this field of application Topas provides the Dilution System Series DIL. These devices have a fixed dilution ratio and are calibrated for the total volume flow rate of the particle counter.

A special development of our devices is the Dynamic Dilution System Series DDS. This device dilutes aerosols for total volume flows ranging from 0.5 l/min to 3 l/min, the dilution factor being adjustable. Both of these values, the measured total volume flow and the dilution ratio are displayed to the user via the LCD display of the device. The device is easy to operate, ensures an exact dilution of the aerosol and features flexible use due to its design.

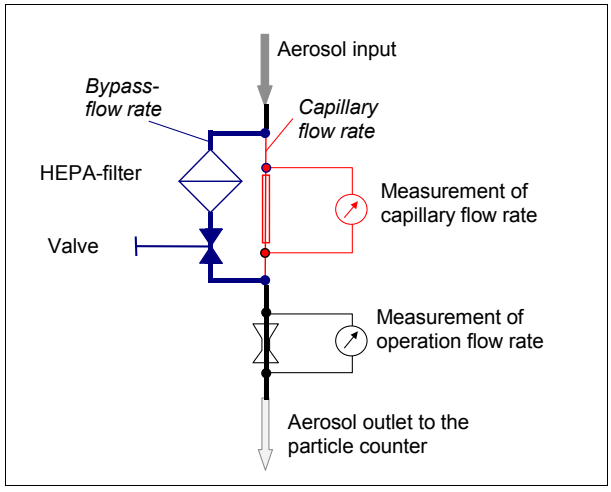
Special Advantages

- Flexible total volume flow range
- Adjustability of the dilution factor
- Simultaneous monitoring of the total volume flow from the particle counter
- Continuous monitoring of the dilution ratio
- No auxiliary or exhaust air necessary
- Minimal maintenance

Applications

- Monitoring and acceptance of cleanroom facilities
- Verification of filter media
- Aerosol research
- Verification of aerosol generators, dust generators

Principle



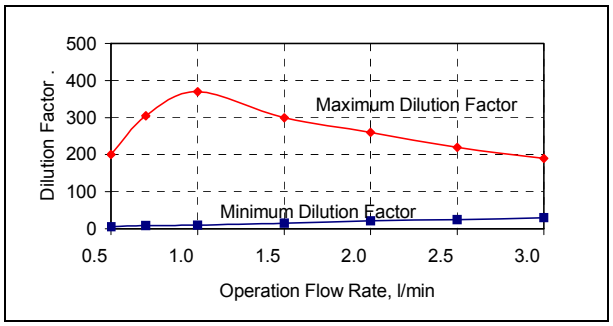
Principle of the Dynamic Dilution System DDS 560

Specifications

Details

The operating principle of the Dynamic Dilution System is based on a splitting of the total volume flow into a bypass and a capillary volume flow. All particles are removed with the built in HEPA filter from the bypass flow rate. The capillary volume flow is substantially lower and is determined by measuring the pressure drop across a capillary and the pressure drop at the HEPA filter in the bypass branch.
By means of the control valve in the bypass branch that pressure loss and thus the capillary volume flow can be set by the user. Just before the aerosol outlet both volume flows are merged again. The dilution ratio is determined by the ratio of bypass volume flow to capillary volume flow. It is shown on the LCD display of the device together with the total volume flow.

The Dynamic Dilution System can be used for different total volume flows within a range from 0.5 to 3 l/min. The user can set the desired dilution factor freely, the setting range depending on the total volume flow (see the following diagram and table on the right). On request, other specifications of the dilution system can be realized by the manufacturer.



Maximum and minimum adjustable dilution factor depending on the total volume flow

Technical Data

Total volume flow range	0.5...3 l/min
Range of dilution ratios	see table below
HEPA capsule	Filter efficiency 99.97% for 0.3 µm DOP droplets (according to ASTM D2986-71) Guaranteed lifetime of 280 h at volume flow of 3 l/min with $2x10^6$ particles/cm^3 (< 1µm)
Power supply	12 V DC, 300 mA (via AC adapter)
Dimensions (W x H x D)	300 x 200 x 140 mm
Weight	2.9 kg

Total volume flow [l/min]	Adjustable dilution factors
0.5	1 : 5 1 : 200
0.7	1 : 8 ... 1 : 305
1.0	1 : 10 ... 1 : 370
1.5	1 : 15 ... 1 : 300
2.0	1 : 20 ... 1 : 260
2.5	1 : 25 ... 1 : 220
3.0	1 : 30 ... 1 : 190

QMS certified to DIN EN ISO 9001.

12 100 11908 TMS

For more information please visit our website at www.topas-gmbh.de

Specifications are subject to change without notice.

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