PROMO® 1000 HP

Depending on the aerosol composition to be measured, i.e., the carrier gas component and the particle material, pressure and temperature changes in the carrier gas can significantly influence the particle size distribution, e.g., due to condensation or evaporation. For this reason, the aerosol sensor welas® 1100 HP and the aerosol sensor welas® 1200 HP are equipped with a cuvette heatable up to 120 °C and pressure-tight up to 10 barg to ensure isobaric and isothermal sampling into the sensor's measurement volume. The Promo® 1000 HP is usually calibrated for the operating volume flow. As the operating volume flow changes with pressure and temperature, it is advantageous for the user if automatic volume flow regulation for the sampling volume flow is provided for in the device.

In the Promo® 1000 HP, the pressure and temperature of the carrier gas are measured, and the required operating volume flow is automatically set to 5 l/min.

OPERATION PRINCIPLE

Includes:

- Mass flow controller for volume flow regulation
- Heating regulator up to 120 °C
- Temperature sensor
- Absolute pressure capsule
- Filter unit to protect the flow rate control

Benefits

- Up to 128 size channels per measuring range
- Concentration range from < 1 particle/cm^3 to 5 • 10^5 particles/cm^3
- Calibration curves for different refractive indices
- Very high and reproducible counting efficiency rate starting at 0.2 μm
- High temporal resolution down to 10 ms
- Calibration, cleaning and lamp replacement can all be performed independently by the customer
- External control by RS 232 or Ethernet
- Low maintenance, reduces your operating expenses

DATASHEET

Measuring principle	Optical light-scattering
Measurement range (number C_N)	$< 5 \cdot 10^5$ particles/cm^3
Measurement range (size)	0.2 – 10 μm, 0.3 – 17 μm, 0.6 – 40 μm
Volume flow	5 l/min, 1.6 l/min
Size channels	Max. 128 (64/decade)
Time resolution	1 s
Interfaces	USB, Ethernet (LAN), Wi-Fi, RS-232/485
User interface	Touchscreen, 800 • 480 pixel, 7″ (17.78 cm)
Data logger storage	4 GB Compact Flash
Software	PDControl, FTControl, PDAnalyze
Thermodynamic conditions	+10 – +120 °C, 2 – 10 bar_g
Data acquisition	Digital, 20 MHz processor, 256 raw data channels
Light source	Xenon high pressure lamp 75 W
Gehäuse	Table housing, optional: with mounting brackets for rack-mounting
Support options	Direct remote access, Palas webserver service
Operating system	Windows embedded
Power supply	115 – 230 V, 50/60 Hz
Power consumption	100 W
Installation conditions	+5 – +40 °C (control unit)
Dimensions	185 • 450 • 315 mm (H • W • D) (19″)
Weight	Control unit: approx. 8 kg, sensor: approx. 18 kg

APPLICATIONS

- Separation efficiency determination of automotive cabin air filters, engine air filters, ambient air filters, compressed air filters, vacuum cleaner filters, cleanable filters, electrostatic precipitators, oil separators, cooling lubricant separators, wet separators, cyclones, and other separators
- Isothermal and isobaric particle size and quantity determination, e.g., in the automotive, chemical, pharmaceutical, and food industries
- Investigation of fast, transient processes
- Particle measurement for cloud formation
- Emission measurements

Mehr Informationen:
https://www.palas.de/product/promo1000hp