



With automatic regulation of the sampling flow through the welas[®] aerosol sensors at an overpressure up to 10 bar or in temperatures up to 120 °C

Description

Depending on the composition of the aerosol 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 welas[®] aerosol sensors welas[®] 2070 HP, 2100 HP, 2200 HP, 2300 HP and welas[®] 2500 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.

welas[®] digital 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.

the welas[®] digital 2000 HP the pressure and temperature of the carrier gas are measured and the required operating volume flow is automatically set to 5 l/min.

:

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

Benefits

- Measuring range of 0.2 to 100 μm (4 measuring ranges selectable in one device)
- Up to four measuring ranges in only one device:
 - 0,2 μm – 10 μm
 - 0,3 μm – 17 μm
 - 0,6 μm – 40 μm
 - 2 μm – 100 μm (additionally for sensors 2300 and 2500)
- Up to 128 size channels per measuring range
- Concentration range of 1 particle/ cm^3 to 10^6 particles/ cm^3
- Calibration curves for different refractive indices
- Very high and reproducible counting efficiency rate starting at 0.2 μm (see Graph 2)
- High temporal resolution down to 10 ms
- Optical fibre technology
- Measurement in potentially explosive environment
- Long service life of the light source of 2000 h
- Extensive PDControl and FTControl software
- Simple operation
- Calibration, cleaning and lamp replacement can all be performed independently by the customer
- Low maintenance
- Reliable function
- Reduces your operating expenses

Datasheet

| Parameter | Description |
|---|--|
| Interfaces | USB |
| Measurement range (size) | 0.2 µm – 10 µm, 0.3 µm – 17 µm, 0.6 µm – 40 µm, 2 µm – 100 µm |
| Size channels | up to 64/decade |
| Measuring principle | Optical light-scattering |
| Measurement range (number C_N) | < 1 • 10 ⁶ particles/cm ³ |
| Thermodynamic conditions | 120°C, 10 bar |
| Volume flow | 5 l/min |
| Data acquisition | 20 MHz processor, 256 raw data channels, digital |
| Light source | Xenon arc lamp 35 W |
| User interface | Laptop |
| Power supply | 115/230 V, 50/60 Hz |
| Housing | Table housing, optionally with mounting brackets for rack-mounting |
| Dimensions | 185 • 450 • 315 mm (H • W • D) (19") |
| Weight | approx. 18 kg (control unit), approx. 2.8 kg (sensor) |
| Software | PDControl, FTControl |
| Installation conditions | +5 – +40 °C (control unit) |

Applications

- Determination of the separation efficiency of car interior filters, engine air filters, room air filters, compressed air filters, vacuum cleaner filters, cleanable filters, electrostatic precipitators, oil separators, cooling lubricant separators, wet scrubbers, cyclones and other separators
- Isothermal and isobaric particle size and quantitative determination, for instance in the automobile, chemical, pharmaceutical and food industries
- Analysis of fast, transient processes
- Inspection of smoke detectors
- Particle formation for cloud formation
- Emission measurements
- Immission measurements
- Breathing function: Inhalation / Exhalation (Particle size and number)

Palas GmbH
Partikel- und Lasermesstechnik
Greschbachstrasse 3 b
76229 Karlsruhe
Germany

Managing Partner:
Dr.-Ing. Maximilian Weiß
Commercial Register:
register court: Mannheim
company registration number: HRB 103813
USt-Id: DE143585902



Contact: E-Mail: mail@palas.de Internet: www.palas.de Tel: +49 (0)721 96213-0 Fax: +49 (0)721 96213-33