



For semiconductor special material gases

Particle Sensor

KS-93

Ideally suited for cleanliness control of special gas supply systems



Enables inline measurement of semiconductor special material gases

- Simultaneous 5-channels particle measurement
0.1 μm and above, 0.15 μm and above, 0.2 μm and above,
0.3 μm and above, 0.5 μm and above
- Flow rate: 100 mL/min, max. 300 mL/min.
- Direct measurement of inert gas as well as corrosive, reactive and other gases
- Leak-tight, outgas-free conditions and no dead space
- Supports SiH_4 , SiHCl_3 , HBr , NH_3 , PH_3 , HCl , etc.

Now capable of measuring 0.1 μm particles in semiconductor special material gases

Specifications

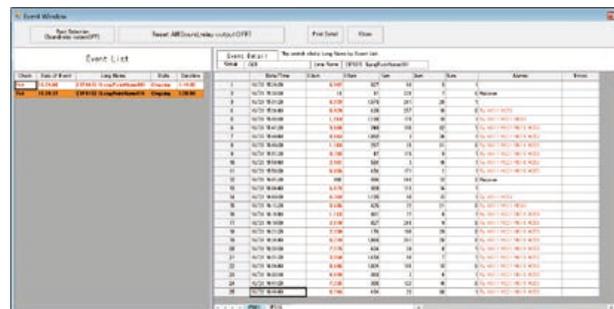
Optical system	Light-scattering system
Light source	Laser diode (wavelength: 830 nm, max. rated output: 200 mW)
Laser product class	Class 1, IEC 60825-1
Light detector	Photodiode
Materials of parts exposed to sample gas	Synthetic quartz, SUS316L (EP grinding), fluorine rubber
Calibration	In clean air with polystyrene latex (PSL) particles, refractive index 1.6
Size range	≥0.1 μm, ≥0.15 μm, ≥0.2 μm, ≥0.3 μm, ≥0.5 μm (5 channels)
Flow rate	100 mL/min
Flow range	50 to 300 mL/min (Size conversion tolerance at smallest particle size (0.1 μm) is ±20 %)
Counting efficiency	50 % ± 10 %
Maximum particle number concentration	30 000 particles/min (coincidence loss 5 %)
Sample gas pressure range	500 kPa or lower (gauge pressure)
Sample Inlet/outlet	Male VCR, joint diameter 1/4 inch (6.35 mm)
Purge gas Inlet/outlet	Male VCR, joint diameter 1/4 inch (6.35 mm)
Environmental conditions for operation	-15 °C to +35 °C, 85 % RH or less (no condensation)
Power	Connection to AC power supply (90 V to 250 V, 50/60 Hz) using supplied power supply unit KZ-50
Dimensions and weight	
Main unit	135 (H) × 280 (H) × 150 (D) mm (without protruding parts), approx. 6.5 kg
Power unit KZ-50	112 (H) × 71 (W) × 185 (D) mm (without protruding parts), approx. 0.8 kg

RP Monitor Evo10 K1701 Ver.2/Ver.3

Option

Used for controlling particle counters to regulate the start/end of measurement and turn the light source/built-in pump on and off Measurement time, period, number of measurements, alarm, and conversion settings

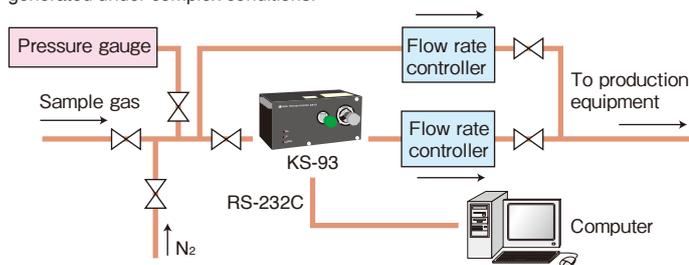
Operating system: Microsoft Windows 10 Pro 64 bit



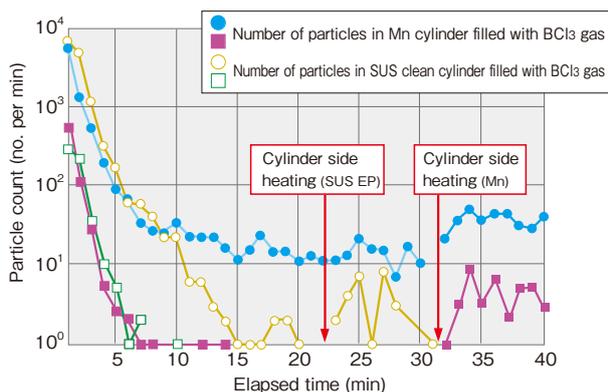
Sample display

Measurement of particles in gases [using cylinder material]

N₂ gas is considered to be particle-free regardless of the cylinder material; it is known, however, that the cleanliness of actual gas depends on the cylinder material and its usage history and that large particles of 0.3 μm or larger are generated under complex conditions.



Example of measurement of particles in gas



Measurement data of particles in BCl₃ gas

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