



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
- Rated flow rate: 100 mL/min, max. 300 mL/min.
- Direct measurement of inert gas as well as corrosive, reactive and other gases
- Realizes leak-tight, outgas-free conditions without dead space
- Supports to SiH_4 , SiHCl_3 , HBr , NH_3 , PH_3 , HCl , etc.

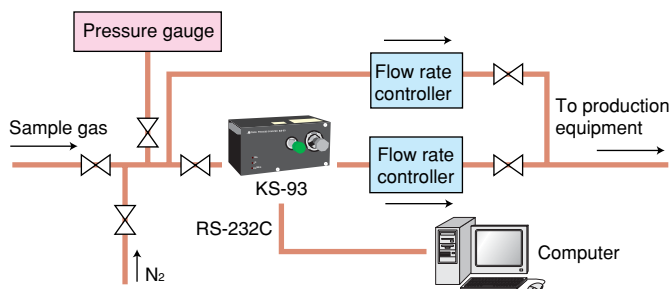
Now capable of measuring 0.1 μm particles in semiconductor special material gases

Specifications

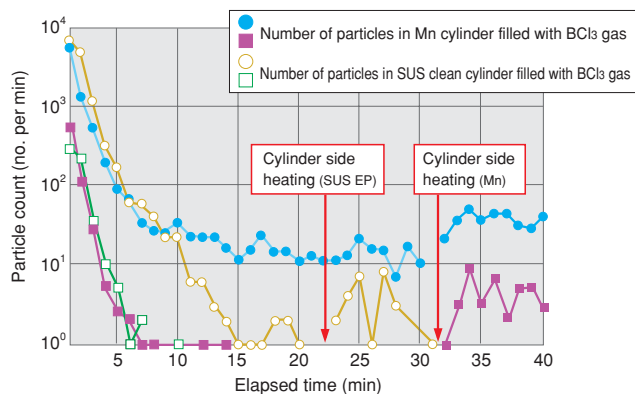
Optical system	Sideway light-scattering system
Light source	Laser diode (wavelength: 830 nm, max. rated output: 200 mW)
Laser product class	Class 1, IEC 60825-1 : 2001
Sample flow rate	100 mL/min
Sample flow range	50 to 300 mL/min
Particle size measurement range (5 channels)	0.1 μm and above, 0.15 μm and above, 0.2 μm and above, 0.3 μm and above, 0.5 μm and above
Counting efficiency	50 % \pm 10 %
Maximum particle number concentration	30 000/min (counting loss within 5 %)
Materials of component parts exposed to sample gas	Synthetic quartz, SUS316L (EP polished), fluorine-containing rubber (JIS4 type D)
Power requirements	Connection to AC power supply (90 V to 250 V, 50/60 Hz) using supplied power supply unit KZ-50 (Supplied power cord can be used with 100 VAC in Japan)
Dimensions and weight	
Main unit	135 (H) \times 280 (H) \times 150 (D) mm (without protruding parts), approx. 6.5 kg
Power unit KZ-50	112 (H) \times 71 (W) \times 185 (D) mm (without protruding parts), approx. 0.8 kg

Measurement of particles in gases [using cylinder material]

N_2 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 BCl_3 gas

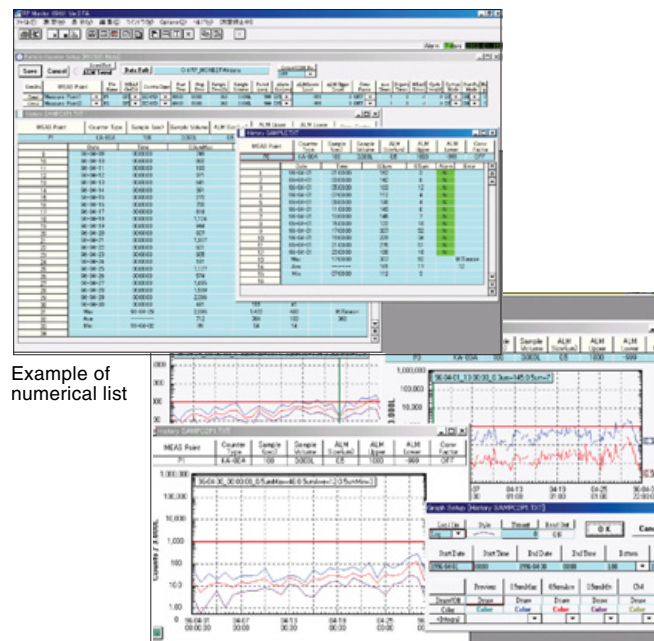
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RP Monitor K9461/K9462 optional

Automatic particle counter control, data collection, real-time graph display, filing and printouts can be implemented using a computer.



Example of numerical list

Example of graph display

- Data can be processed using spreadsheet software (Microsoft Excel, etc.)
- (K9461) RS-232C connection allows one-on-one control of RION particle counters.
- (K9462) Multipoint monitoring systems can be developed using RS-232C/485 converter (max. 20 measurement points)

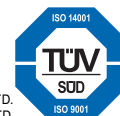
Compatible OS: Microsoft Windows 2000/XP

Sensor controller KZ-70 optional

For particle sensor control and measurement result display in multipoint monitoring systems



Compatible models	Particle counters and sensors with RION multipoint system interface (Datalink terminal)
Operation modes	
Monitor mode	Functions as display device in sensor multipoint monitoring systems
Controller mode	For setting measurement time and other measurement conditions and controlling particle counters and sensors
Dimensions and weight	190 (H) \times 170 (W) \times 40 (D) mm (without protruding parts), approx. 1.3 kg
Options	Printer DPU-414



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