



*Liquid-borne/0.06  $\mu\text{m}$*

# **Particle Sensor KS-17A**

**Chemical use in-line particle sensor for  
particle contamination control**



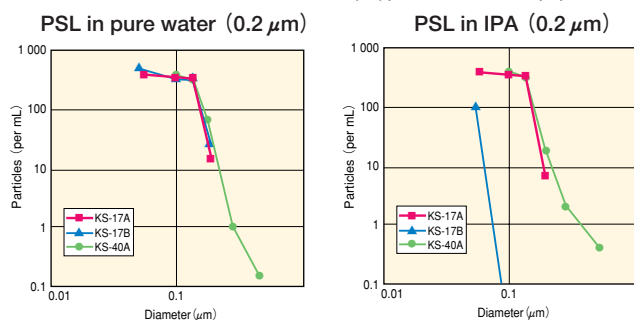
## **In-situ monitor for multi-point monitoring systems**

- Measurement of particles in chemical solutions used in semiconductor processes
- Unique sensor structure realizes measurement of particles of 0.06  $\mu\text{m}$  or larger
- Maintains high reliability with extremely little particle diameter dependency of count efficiency
- Demonstrates strengths as in-situ monitor for chemical supply systems, etc.
- Enables development of multi-point monitoring systems for optimal process management
- Prompt warnings through internal leak sensor and warning output terminal

## 20 points with RP monitor and expansion to 160-point multipoint monitoring systems with the KF-02B

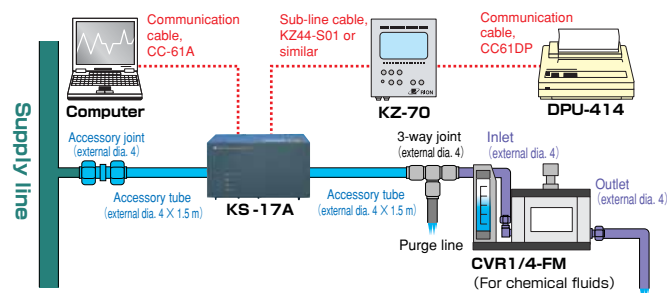
### Particle measurement comparison (in pure water and IPA)

IPA: Isopropyl alcohol PSL: Polystyrene latex



### Example of in-line measurement system

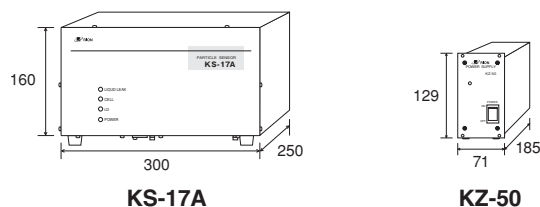
#### In-line system (using mass flow controller)



#### Specifications

Optical system	90° sideway light-scattering method
Light source	Laser diode (rated output 200 mW; wavelength 830 nm)
Laser product classification	Class 1, IEC 60825-1 (2001)
Light detector	Photodiodes
Materials of component parts exposed to sample fluid	Synthetic quartz, PFA
Allowable sample fluid types	Fluids which do not corrode the fluid contact materials
Calibration	Polystyrene latex (PSL) particles with refractive index 1.6 in pure water
Measurement size range	Two channels ( $\geq 0.06 \mu\text{m}$ , $\geq 0.1 \mu\text{m}$ )
Counting efficiency	1.0±0.3% (ambient temperature 20 to 25 °C, relative humidity below 85%)
Sample flow rate	10 mL/min
Maximum particle number concentration	100 000 particles/mL (coincidence loss 5% for 0.06 μm particles)
Allowable sample fluid pressure	300 kPa or less (gauge reading)
Sample fluid connectors	
INLET	Sample fluid inlet, 2 × 4 dia. flared tube joint
OUTLET	Sample fluid outlet, 2 × 4 dia. flared tube joint
PURGE	Purge gas inlet, Rc1/8 (1/8 PT female)
Power requirements	Supplied via power supply unit KZ-50 (90 to 250 V AC, supplied power cord only for use in Japan, 100 V AC)
Power consumption	Max. 40 VA (including power supply unit)
Ambient conditions for operation	15 to 30 °C, less than 85% RH (no condensation)
Dimensions and weight	
Main unit KS-17A	160 (H) × 300 (W) × 250 (D) mm (excluding protruding parts), approx. 6.5 kg
Power supply unit KZ-50	112 (H) × 71 (W) × 185 (D) mm (excluding protruding parts), approx. 0.8 kg
Supplied Accessories	Tube A vacuum pack (2×4 dia., 1.5 m flared PFA tube 2, union joint 1) × 1, Power cord (only for use in Japan, 100 V AC) × 1, DC cable × 1, Power supply unit KZ-50 × 1, Slow-blow fuse (3 A) × 1

#### Dimensional drawing (Unit: mm)



KS-17A

KZ-50

#### Options

##### Mass flow controller CVR1/4-FM

Optimal for flow control in simple in-line measurement systems

Fluids	Pure water, chemical fluids
Flow rate	10 to 31.2 mL/min.
Operating pressure	100 to 400 kPa
Size and weight	125 (H) × 185 (W) × 110 (D) mm (excluding protruding parts), approx. 2.4 kg



##### Sensor Controller KZ-70

Particle sensor control and display of results; multi-point monitoring system display device

Applicable models	Particle counters and sensors with RION multi-point system interface (DATA LINK terminal)
Operating modes	
Monitor mode	Operates as display device in sensor multi-point monitoring systems
Controller mode	For setting time and other measurement conditions and controlling particle counters and sensors
Size and weight	190 (H) × 170 (W) × 40 (D) mm, (excluding protruding parts), approx. 1.3 kg
Option	Printer DPU-414



##### Bellows Sampler K9904A

Bellows type sampler minimizes loss of valuable sample fluids during measurement

Valve specification	Air operation (requires separate air pressure source)
Usable samples	Photo resist, pure water, chemicals; sampler interior must be purged with nitrogen gas when using with chemicals containing combustible components.
Guaranteed withstanding pressure	300 kPa
Size and weight	190 (H) × 350 (W) × 263 (D) mm, approx. 7 kg (main unit) 106 (H) × 230 (W) × 150 (D) mm (excluding protruding parts), approx. 2 kg



##### Monitoring Software

- RP Monitor K9461  
Mainly for 1-on-1 particle counter and sensor automatic measurement, data collection, and graph display
- RP Monitor K9462  
For small-scale multi-point sensor monitoring systems of up to 20 points
- KF-02B  
For large-scale multi-point sensor monitoring systems of up to 248 points

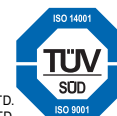


\* Specification subject to change without notice.

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