



Liquid-borne
Particle Sensor
KS-40B/KS-40BF

KS-40BF supports hydrofluoric acid measurements

Improved and refined sensors for 0.2 μm measurement



Optional unit: Controller KE-40 (upper left),
Syringe Sampler KZ-30W1 (right)

Compatible with pure water, solutions, alkalis, photoresist, acid including hydrofluoric acid (KS-40BF)

- Counting efficiency and particle size resolution optimized for sample measurements of high-purity liquid
- Accurate repeat results even with low sample volume and short measurement time
- KS-40BF employs sapphire cell supporting a wide range of fluids including hydrofluoric acid



Specifications

- Optical system** Sideway light-scattering method
Light source Laser diode (max. output 50 mW; wavelength 780 nm)
Laser product classification
 Class 1, IEC 60825-1 (2001)
 Internal particle detection mechanism uses Class 3B laser
Light detector PIN type photodiodes
Materials of component parts exposed to sample fluid
 Sapphire, PFA, PTFE (KS-40BF)
 Synthetic quartz, PFA, PTFE (KS-40B)
Allowable sample fluid types Fluids which do not corrode the fluid contact materials
Calibration Polystyrene latex (PSL) sphere with refractive index 1.6 in pure water
Minimum particle size 0.2 μm
Measurable particle size
 0.2 to 5 μm (with PSL particles of refractive index 1.6 in pure water)
Measurement size range
 Five channels ($\geq 0.2 \mu\text{m}$, $\geq 0.3 \mu\text{m}$, $\geq 0.5 \mu\text{m}$, $\geq 1.0 \mu\text{m}$, $\geq 2.0 \mu\text{m}$)
Counting efficiency
 70 to 110% (measuring PSL particles with 2 to 3 times the minimum measurable diameter, comparing count for 0.2 μm and higher with a reference unit)
Sample flow rate 10 mL/min
Maximum particle concentration
 1200 particles/mL (coincidence loss 5% for 0.2 μm particles)
Sample fluid temperature range +15 to +35°C (no moisture condensation on cell)
Allowable sample fluid pressure 300 kPa or less (gauge reading)
Warm-up time 10 minutes
Sample fluid connectors Sample fluid inlet/outlet: 2 \times 4 dia. flared tube joint
Purge connector Purge gas inlet, Rc 1/8 (1/8 PT female)

Indicators

PARTICLE MONITOR:

Flashes green when particles above minimum detectable size are detected.

LIQUID LEAK:

Lit in green during normal operation.
Lit in red when leak is detected within chassis.

CELL:

Lit in green during normal operation.
Lit in red when measurement may not be correct, due to contamination, condensation or particle concentration exceeding maximum rating of unit.

LASER:

Lit in green during normal operation.
Flashes in red when light source output falls below rated level.
Off when light source is off.

POWER:

Lit in green while the unit is powered.

Input/output connectors

CONTROLLER: For controller KE-40 connection

LIQUID LEAK ALARM: Shorted during normal operation. Open when leak is detected.
Maximum load : 30 V DC, less than 1 A

EXT: Analog particle signal output terminal (Only for pulse Height Analyzer)

Power supply Supplied via controller KE-40

Installation inclination angle Max. 2°

Ambient conditions for operation

+15 to +35°C, less than 80% RH
(no condensation and no freezing in internal piping)

Ambient conditions for storage

-10 to +50°C, less than 90% RH
(no condensation and no freezing in internal piping)

Dimensions

245 (W) \times 139 (H) \times 179 (D) mm (maximum)
240 (W) \times 125 (H) \times 151 (D) mm

Weight

Approx. 3.5 kg

Controller KE-40



Serves for particle sensor operation control and measurement data display. Allows continuous measurement in conjunction with a syringe sampler and printer.

- For one-on-one control of particle sensor (KE-40)

Specifications

Particle size channels

Max.5 channels when using KS-40B/40BF

Measurement time 1 minute, 10 minutes, manual

Measurement modes

HOLD (retain measurement value until start of next measurement)

REPEAT (automatically restart measurement after 10-second pause interval)

Display

Numeric display

Particle count (max. 6 digits)

OVER Lights up when count exceeds 999,999

DATA NG Lights up when problem was detected during measurement

COUNT Lights up when measurement is in progress

REMOTE Lights up when unit is operated under interface control

Internal Interface

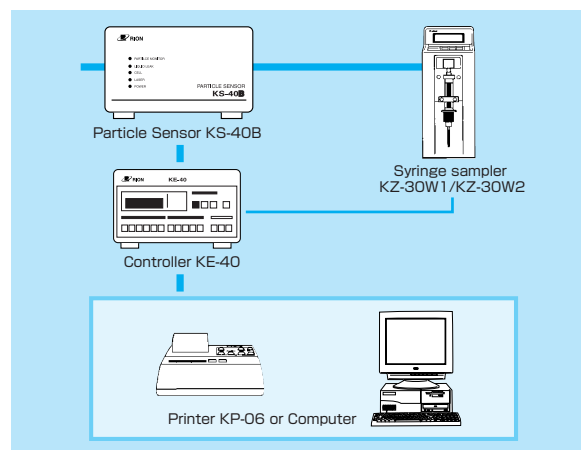
Serial interface (standard)

Power requirements

100-240V AC, 50/60 Hz, approx. 80VA
(Supplied power cord should be used only for the connection to 100V AC outlet in Japan.)

Dimensions Approx. 130(H) \times 240(W) \times 170(D) mm
Weight Approx. 2.8 kg

Connection example for batch measurement



Specifications subject to change without notice.

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