**RION**

ECO GREEN

Ideal for Monitoring 0.15 µm Particles in Photoresist, SOG, and Other Solutions

QUARTZ
FLOW CELL

PARTICLE MONITOR

LIQUID LEAK

CELL

LASER

DATA LINK

POWER

PARTICLE SENSOR
KS-41A

# Liquid-Borne Particle Sensor
# KS-41A

■ Detects particles in photoresist down to 0.15 $\mu$m size, at a flow rate of 10 mL/min

■ Particle size range
  Freely settable from 0.15 $\mu$m to 0.5 $\mu$m (up to 10 channels by KE-40B1)
  Factory default setting : four channels (≥0.15 $\mu$m, ≥0.2 $\mu$m, ≥0.3 $\mu$m, ≥0.5 $\mu$m)

■ Integrated leak sensor with alarm output

■ User selectable channels within measurement range (using KE-40B1 function)

## Specifications [KS-41A]

| | |
|---|---|
| Optical system | Light-scattering method |
| Light source | Laser diode (wavelength 830 nm, rated output 200 mW) |
| Laser product class | Class 1, IEC 60825-1 |
| Light detector | PIN type photodiode |
| Materials of parts exposed to sample | Synthetic quartz, PFA |
| Allowable sample type | Fluids which do not corrode the fluid contact materials |
| Calibration | Polystyrene latex (PSL) particles (refractive index 1.6) in pure water |
| Size range | |
| 4 channels (factory default) | ≥0.15 $\mu$m, ≥0.2 $\mu$m, ≥0.3 $\mu$m, ≥0.5 $\mu$m |
| User selectable channels | 1 to 10 channels, setting made from Controller |
| Setting range | 0.15 $\mu$m to 0.5 $\mu$m |
| Counting efficiency | 50 ±10 % |
| Flow rate | 10 mL/min |
| Maximum particle number concentration | 1 200 particles/mL (at 5 % coincidence loss for 0.15 $\mu$m particles) |
| Sample pressure range | 300 kPa (gauge pressure) or less |
| Sample inlet/outlet | 2 (dia.) x 4 (dia.) flared joint for tube |
| Purge air port | Rc 1/8 (1/8 PT female screw) |
| Input/output connectors | |
| CONTROLLER connector | Connecting to KE-40B1 |
| LIQUID LEAK | Alarm output terminal shorted during normal operation, |
| ALARM connector | open when internal leak is detected |
| Power | DC12 V (supplied by KE-40B1 or KZ-51) |
| Environmental conditions for operation | 15 °C to 30 °C, less than 85 % RH (no condensation) |
| Dimensions and weight | 160 (H) x 300 (W) x 251 (D) mm (excluding protruding parts), Approx. 7.5 kg |
| Accessories | Tube A vacuum pack x 1 |
| | (2 x 4 dia. PFA tube with flared joint at one end, 1.5 m x 2, Union joint x 1) |
| | Cleaning brush set x 1, Connection cable A (1 m) x 1 |
| | |
| Options | Connection cable B (5 m) KS-42-123 |

### Example of measuring system



Computer
KE-40B1
KZ30S180
Sample bottle
KS-41A
Waste fluid bottle
Syringe Sampler
KZ-31W
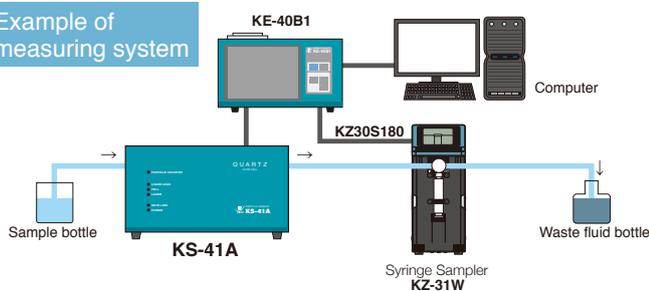
### RP monitor EVO K0505 Ver. 2/Ver.3 `Option`

Used for controling 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
Supported OS：Microsoft Windows XP Professional (32 bit), 7 Professional (32 bit)
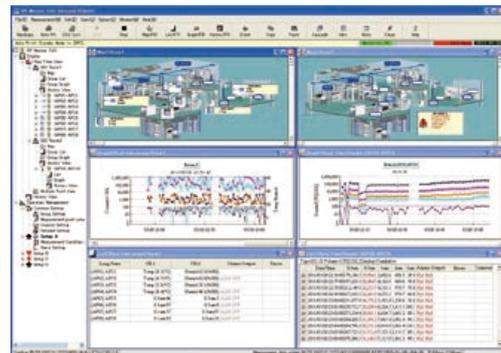


Sample display

### Syringe Sampler KZ-31W

For batch measurement of liquid-borne particle sensor
＊Connecting cable (KZ30S180, optional)



### Multi-Point Unit KZ-51

Power supply unit to connect KS-41A to RION multi-point monitoring system



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For operation control of particle sensor and display of measurement data

## Controller KE-40B1

● Particle size range can be freely set for up to 10 channels.
● Built-in printer.
  Measurement data can be stored on memory card (CF card).

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## Specifications [KE-40B1]

| | | |
|---|---|---|
| Display | | |
| | Display items | Particle size range (max.10 channels), Count (max. 8 digits) |
| Controls | | Touch panel, Sheet switches |
| Measurement | | |
| | Measurement time | 10 seconds to 2 hours, or manual |
| | Measurement modes | Manual measurement |
| | | Automatic measurement: mean value measurement, moving average measurement, periodic measurement, scheduled time measurement |
| Alarm | | When measured value in a selected channel reaches the preset alarm level, a buzzer sounds and alarm terminals are shorted by relay contacts |
| | | Maximum connected load: DC 30 V, 1 A |
| Communication | | RS-232C |
| Printer | | Printout of measurement results, date and time |
| | Recording paper | Thermal paper: TP-08, Clean thermal paper: TP-10 |
| Memory | | CompactFlash (CF) card＊(automatic storage in TSV format ) |
| Power | | 100 to 240 V AC, 50/60 Hz, approx. 130 VA |
| Dimensions and weight | | 140 (H) x 240 (W) x 146 (D) mm (excluding protruding parts), approx. 3 kg |
| Accessories | | Power cord x 1, Thermal paper TP-08 x 2 rolls, Dummy card |
| | | |
| Options | | Communication cable CC-61A, Thermal paper TP-08, Clean thermal paper TP-10, Memory card MC-25LC1 (256 MB), CFcard adapter CFC-ADP03 |
| Factory option | | D/A converter interface KE-40-S06 |

＊Use only RION supplied cards for assured operation.

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