SPECIFICATIONS

PARTICLE COUNTER

KC-22B

RION CO., LTD.

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No. 01011-4E 20-08 Printed in Japan

Outline

The light scattering automatic particle counter KC-22B is designed to monitor the number concentration of airborne particles in clean rooms or other controlled environments. In a single measurement, the KC-22B can determine the number of particles in five size ranges (sizes ≥ 0.08 µm, 0.1 µm, 0.2 µm, 0.3 µm, 0.5 µm).
The rated sample air flow is 300 mL per minute.

Battery backup retains measurement settings also while the unit is switched off.
Alarm function provides audible warning when number of particles equals or exceeds a setting level.
A relay for control of external devices such as a fan is also provided.
A serial interface is built in as standard, allowing connection to a computer or the printer KP-06A.
A facility for providing a 4 mA to 20 mA output is also available as an option.

Specifications

Optical system	90° sideway light scattering method
Light source	Laser diode pumped solid state laser (wavelength 1064 nm), open-cavity type
Laser diode:	Rated output power 1 W, wavelength 800 nm
Laser medium:	Nd:YVO4
Laser product class	Class 1, IEC 60825-1:2014 Internal particle detection mechanism uses Class 3B and class 4 lasers
Collecting optics	Aspherical lenses (condensing half-angle 40 degrees)
Light detector	Photodiode
Air flow method	Purified sheath air envelops sample air coaxially.
Flow rate	300 mL/min
Calibration	With polystyrene latex (PSL) particles (refractive index 1.6) in clean air

Minimum detectable particle size

0.08 μm (with spherical particles of refractive index 1.6)

Particle size ranges	Five channels (≥0.08 μm, ≥0.1 μm, ≥0.2 μm, ≥0.3 μm, ≥0.5 μm)

Maximum particle number concentration

100000 particles/L (coincidence loss within 5%)

False counting	One count or less per 5 minutes
Warm-up time	30 minutes (until air flow stabilizes)
Sample air inlet	Insert the supplied sampling pipe for introduction of sample air
Sample air outlet	The clean air comes out

Measurement modes

Manual measurement mode

After being started, measurement continues until a stop command is given

Measurement value retained until start of next measurement

Automatic measurement mode

After being started, measurement continues for the preset measurement time

Measurement time

1 to 600 seconds

Additional settings in remote mode:

57 sec. (285 mL), 3 min. 20 sec. (1 L), 9 min. 26 sec. (2.83 L), 33 min. 20 sec. (10 L)

HOLD	Measurement value retained until start of next measurement
REPEAT	Automatic repeat of measurement after 10-second pause interval

Display

Numeric display	Shows the particle count (max. 6 digits), alarm level setting, measurement time, and light source status (protect or error) indication
COUNT	Lit during measurement
LASER	Flashing when laser output has fallen below rated level
	Lit when laser is off
REMOTE	Lit when unit is remote controlled from external equipment
OVER	Lit when particle count has exceeded 999,999

Input / output connectors

EXT	Test output
ALARM 1 / 2	ALARM 1 terminals are closed by relay when the alarm occurs. ALARM 2 terminals are not used.
Maximum load	30 V DC, 1 A

Alarm function — Buzzer sounds and ALARM 1 terminals are closed by relay when particle count in specified channel equals or exceeds specified alarm level.

Alarm level setting range

1 to 1000 and off

Additional settings in remote mode: 10, 100, 1000, 10000, and off

Internal interface

Serial interface (standard)

Communication parameters

Electrical characteristics:

Conforming to JIS X 5101:1982

(JIS X 5101:1982 corresponds to TIA/EIA-232)

Transmission configuration:

Full-duplex, asynchronous

Baud rate: 4800 bps or 9600 bps

Data word length:

7 bit or 8 bit

Parity: Even, odd, or none

Stop bits: 1 or 2

Connector type:

9-pin male D-sub connector

D/A Converter Interface KZ-25L (Option)

Converts the particle count in a selected channel into 4 mA to 20 mA DC current.

Range — 0 to 10, 0 to 100, 0 to 1000, 0 to 10000, 0 to 100000, 0 to 16, 0 to 256, 0 to 4096, 0 to 40960, 0 to 409600 (selectable)

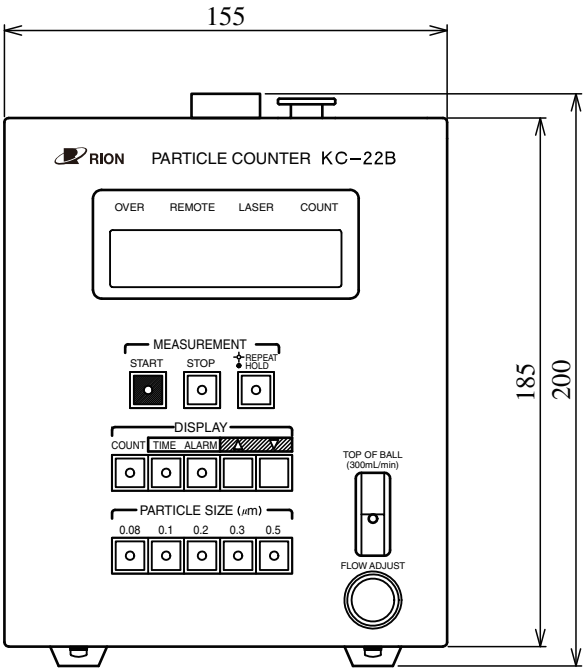
Environmental conditions for storage

−10°C to +50°C, 90% RH or less (no condensation)

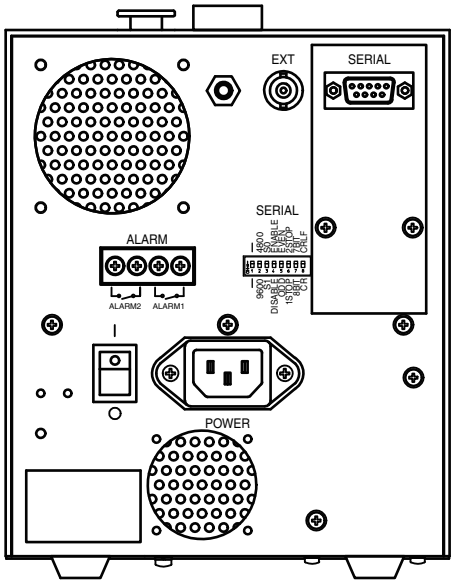
Environmental conditions for operation

+15°C to +35°C, 85% RH or less (no condensation)

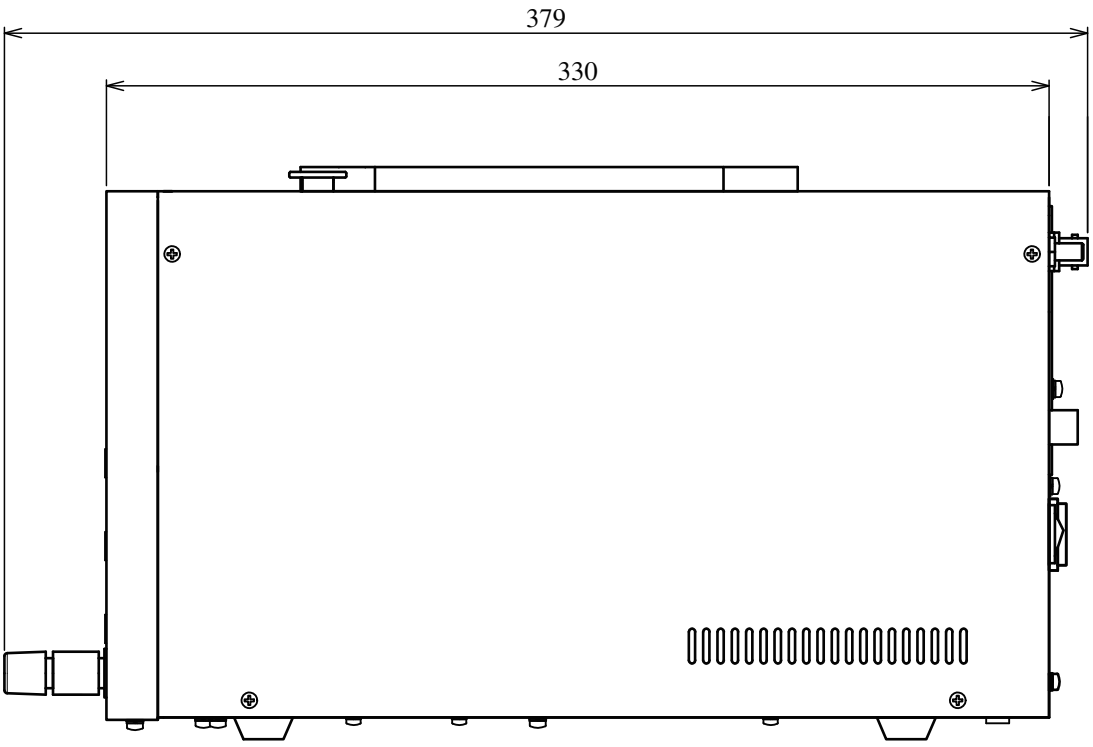
Power requirements	100 V to 240 V AC, 50/60 Hz, approx. 90 VA (Supplied power cord only for use in Japan on 100 V AC)	
Dimensions	200 mm (H) × 155 mm (W) × 379 mm (D) (max.) 185 mm (H) × 155 mm (W) × 330 mm (D) (without protruding parts)	
Weight	Approx. 7 kg	
Supplied accessories	Sampling pipe	1
	Sampling tube (2 m)	1
	Filter	1
	Power cord	1
	(for use in Japan with 100 V AC, 2.5 m)	
	Particle size label	1
	Instruction manual	1
	Inspection certificate	1
Optional accessories	Printer	KP-06A
	Interface cable for printer KP-06A	CC-61A
	(For connection to equipment with 9-pin male D-sub connector)	
	Interface cable	CC-61
	(For connection to DTE with 25-pin female D-sub connector)	



Front view



Rear view



Side view

Unit: mm

Dimensional Drawings

Specifications subject to change without notice