

SPECIFICATIONS
PARTICLE COUNTER
KC-01D1



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Outline

The light scattering automatic particle counter KC-01D1 is designed to monitor the concentration of air-borne particles in clean rooms or other controlled environments. In a single measurement, the KC-01D1 can determine the number of particles in five size ranges, from 0.3 μm and over to 5 μm and over. The rated sample flow is 0.5 L per minute.

An RS-232-C interface is provided as standard equipment, and a printer and other peripheral equipment can be connected.

Features

- Particle count for five particle sizes (sizes $\geq 0.3, 0.5, 1, 2, 5 \mu\text{m}$) in a single measurement.
- Battery backup retains measurement settings also while the unit is switched off.
- Four-step alarm function provides audible warning when number of particles exceeds a certain level. A relay for control of external devices such as a fan is also provided.
- Temperature-controlled laser diode serves as highly stable light source.

* All company names and product names mentioned in this specifications are trademarks or registered trademarks of their respective owners.

Specifications

Optical system	70° sideway light-scattering method
Light source	Laser diode (rated output 40 mW; wavelength 780 nm)
Laser product classification	Class 1, IEC 60825-1 (2001) Internal particle detection mechanism uses Class 3B laser
Light detector	Photodiode
Sample flow rate	0.5 L / min
Minimum particle size	0.3 μm (for particles with refractive index 1.6)
Measurement size range	Five channels ($\geq 0.3 \mu\text{m}$, $\geq 0.5 \mu\text{m}$, $\geq 1 \mu\text{m}$, $\geq 2 \mu\text{m}$, $\geq 5 \mu\text{m}$)
Maximum particle number concentration	100000 particles / L (coincidence loss within 5 %)
Warm-up time	1 hour
Sample air volume	1 L (2 minutes), 10 L (20 minutes), 283 mL (approx. 34 seconds), 2.83 L (approx. 5 minutes 40 seconds), and manual
Measurement modes	HOLD (keeping measurement value until next measurement) or REPEAT (automatic repeat of measurement after 10-second pause interval)

Display

Particle count:	Total number of particles above a certain size (indication range: 0 to 999999).
COUNT:	Measurement is being performed.
LASER:	Flashing when laser output has fallen below rated level. Lit when laser is off.
REMOTE:	Unit is remote controlled via interface.
OVER:	Particle count has exceeded the six-digit range of the display.

Alarm

	Beeper and relay for control of external equipment activated when particle count exceeds a preset level.
Alarm setting range	100, 1000, 10000, 100000 or STOP
Alarm output terminal capacity	Max. 100 V 1 A (AC), 30 V 1 A (DC)

Internal interfaces

RS-232-C (standard)

Use this interface when connect the printer KP-06.

Standards Based on JIS X 5101-1982, EIA RS-232-C

Transmission configuration

Full-duplex, asynchronous

Baud rate 4800 or 9600 bps

Data word length 7 bit or 8 bit

Parity Even, odd, or none

Stop bits 1 or 2

Line terminator <CR> or <CR><LF>

Connector 25-pin D-sub female connector

GP-IB (KZ-23M Optional equipment)

Standard Based on IEEE 488-1978

D/A converter (KZ-25M Optional equipment)

This interface converts the measurement results (particle count) of the KC-01D1 into a current with a range of 4 to 20 mA.

Particle count range (10 range settings):

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

Optional KZ-23M and KZ-25M are designed as internal replacement interfaces for the standard RS-232-C interface.

Input / output connectors


CONTROL connector For printers KP-04A or KP-05A

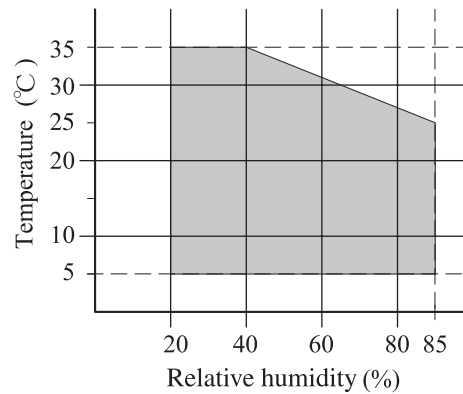
EXT connector Serves for test purposes

Ambient conditions for storage

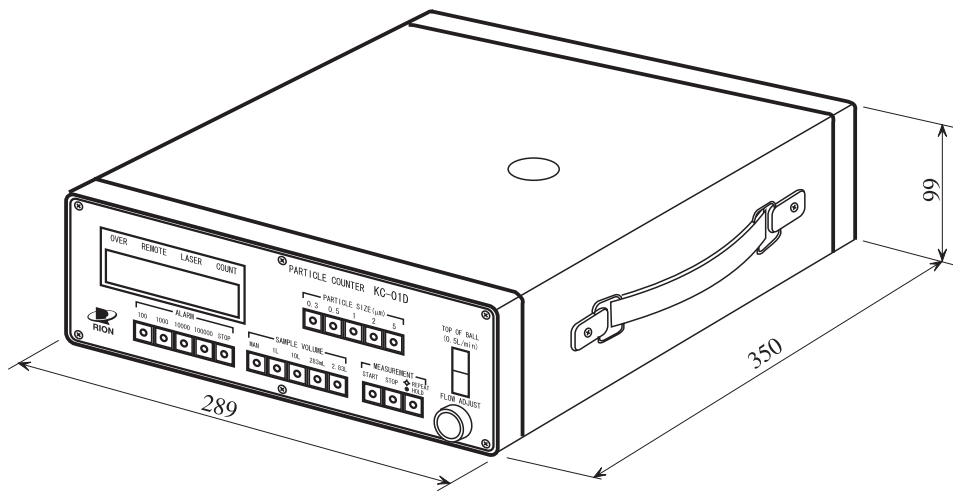
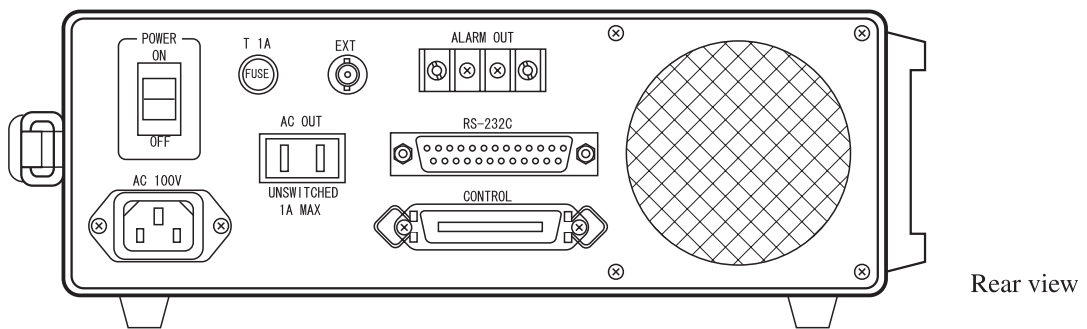
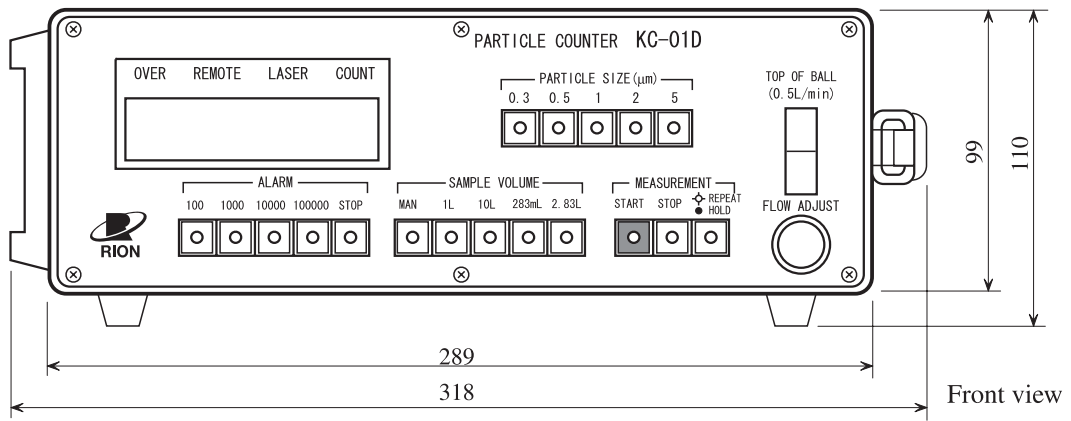
-10 to +50°C, less than 85% RH (no condensation)

Ambient conditions for operation

Shaded section  in graph below without sudden temperature and humidity change.



Power requirements	100 V AC \pm 10%, 50/60 Hz, approx. 50 VA
Dimensions	99 (H) \times 289 (W) \times 350 (D) mm (without protruding parts)
Weight	Approx. 7 kg
Supplied Accessories	Sampling pipe 1
	Sampling tube (7 \times 5 dia., 2 m vinyl tube) 1
	Power cord (2.5 m) 1
	Slow-blow fuse (1 A) 1
	Filter 1
	Plastic cover 1
	Carrying case 1
	Instruction manual 1
	Inspection certificate 1



Unit: mm

Dimensional Drawings

Specifications subject to change without notice