RION

Airborne Particle Counter

KC-32/KC-31

Airborne Particle Counter KC-32/KC-31

Compliant with ISO 21501-4 (JIS B 9921)

Suitable for clean air management in a pharmaceutical manufacturing environment

(Evaluate air cleanliness class according to ISO 14644-1, PIC/S GMP Annex1, EU-GMP Annex 1)

High flow volume provides shortened measurement time which makes the product useful also for electronic device manufacturing sites

Light weight (world top ranking*) and battery powered operation are great for use anywhere

- Particle size range 0.3, 0.5, 1.0, 2.0, 5.0, 10.0 μm
- Approx. up to 5 000 measurement results can be stored in internal memory and can transfer to USB memory afterwards.
- Stainless steel chassis provides improved resistance against chemicals
- Rechargeable lithium ion battery for enhanced environment-friendliness. Two batteries can be inserted to provide extended operation time (unit comes with one battery as standard.)
- 21 CFR Part 11 compliant
  Password based user level management (Administrator/User/Guest), with different available functions
  Operation history can be viewed with supplied software (Log Viewer)
- Selectable display language (English or Japanese)

＊KC-32 (minimum particle size 0.3 µm, flow rate 50 L/min, two batteries inserted) equivalent air-borne particle counter, as of April 2012, Rion data

Sample Screen

Login Screen (security)

Measurement Screen

Measurement Parameter Setting Screen

Sample Printout

```
**********
2012-03-06 19:52:54
KC-32              TIME:   60s
PERIOD: 00:01:00   AVG:  None
 Label:             ID: Admin
**********


#1   2012-03-06  19:52:54    60s
Label:
 µm       CUMU.       DIFF.Counts
0.3       45060           26655
0.5       18405           14591
1.0        3814            3459
2.0         355             287
5.0          68              50
10.0         18              18

#1   2012-03-06  19:53:54    60s
Label:
```

Log Viewer Screen (Audit Trail Display Application)

Log Viewer

File(F) Edit(E) Help(H)

KC-32 (Ver.0.1) : Ser.00000000 — 2012-03-06 14:32:31

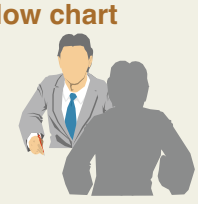
Date	ID	Class	Event
2012-03-06 14:26:02	Root	Security	Power-on
2012-03-06 14:26:14	Administrator	Security	Log-in
2012-03-06 14:26:33	Administrator	Config.	Change Measurement Parameter. Time 00:10:00 => 00:00:15
2012-03-06 14:26:43	Administrator	Config.	Change Measurement Parameter. Period Time 00:00:15 => 00:00:00
2012-03-06 14:26:49	Administrator	Measurement	Measurement START
2012-03-06 14:27:18	Administrator	Config.	Change Measurement Parameter. Measurement Mode Time => Volume
2012-03-06 14:27:27	Administrator	Measurement	Measurement START
2012-03-06 14:27:45	Administrator	Config.	Change Measurement Parameter. Measurement Mode Volume => Time
2012-03-06 14:27:49	Administrator	Config.	Change Measurement Parameter. Time 00:10:15 => 00:00:00
2012-03-06 14:27:52	Administrator	Measurement	Measurement START
2012-03-06 14:27:57	Administrator	Measurement	Measurement STOP
2012-03-06 14:28:06	Administrator	Config.	Change Measurement Parameter. Time 00:10:00 => 00:00:10
2012-03-06 14:28:09	Administrator	Measurement	Measurement START
2012-03-06 14:28:11	Administrator	Measurement	Measurement CANCEL
2012-03-06 14:28:28	Administrator	Security	Shutdown
2012-03-06 14:28:38	Administrator	Security	Power-off
2012-03-06 14:29:03	Root	Security	Power-on
2012-03-06 14:29:28	User	Security	Log-in
2012-03-06 14:29:32	User	Measurement	Measurement START
2012-03-06 14:30:06	User	Measurement	Measurement START
2012-03-06 14:30:08	User	Measurement	Measurement CANCEL
2012-03-06 14:30:13	User	Security	Shutdown
2012-03-06 14:30:23	User	Security	Power-off
2012-03-06 14:32:02	Root	Security	Power-on
2012-03-06 14:32:13	Administrator	Security	Log-in
2012-03-06 14:32:22	Administrator	System	Copy to usb_memory

E:¥log_00000000.tsv

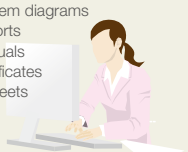
Support for validation works

We can support your validation works (IQ, OQ) for KC-32/31.

Work flow chart



Required documents
- Traceability system diagrams
- Test results reports
- Instruction manuals
- Calibration certificates
- Specification sheets



1 Discussion with customers (Confirmation of IQ, OQ)

2 Preparation and approval of IQ, OQ implementation plans

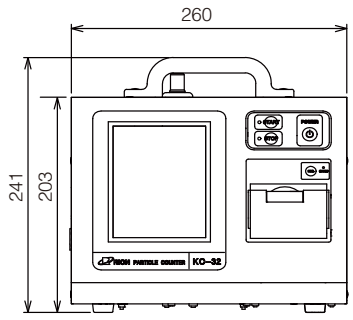
3 Implementation of IQ, OQ operations

4 Preparation of IQ, OQ implementation records

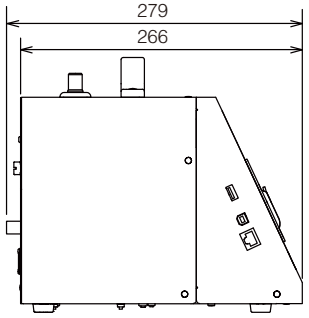
Specifications		KC-32	KC-31
Optical system		Light scattering method	
Light source		Laser diode (wavelength 780 nm, rated output 100 mW)	
Laser product class		Class 1, IEC60825-1	
Light detector		Photodiode	
Flow rate		50 L/min	28.3 L/min
Particle size ranges		6 channels: ≥0.3, ≥0.5, ≥1.0, ≥2.0, ≥5.0, ≥10.0 μm	
Counting efficiency		50 ±20 % (By PSL particles of/near the lowest measurable particle size), 100 ±10 % (By PSL particle of 1.5 to 2 times of the lowest measurable particle size)	
Maximum particle number concentration		16 000 000 particles/cubic meter (coincidence loss within 10 %)	28 000 000 particles/cubic meter (coincidence loss within 10 %)
False count		Max. 4 particles/m^3	Max. 7 particles/m^3
Max. length of sampling tube		10 m(supplied sampling tube is 1 m)	
Measurement time/Measurement volume		Manual, setting range 10 sec to 1 hr (1-sec units)/10 L, 28.3 L, 1 00 L, 283 L, 1 000 L	
Measurement display		Cumulative value, differential value/1 L, 28.3 L, 1 000 L, no conversion	
Number of continuous measurements/Measurement time		Max. 99 times, max. 24 hours (set as measurement cycle)	
Number of stored measurement results/Store format		Approx. 5 000 (depends on measurement data volume; rotating principle)/Tab-Separated Value (TSV) text file	
Alarm function		Threshold setting range 1 to 99 999 999 particles (1-particle steps)	
Security function		3-stage permissions level management (Administrator/User/Guest), password based	
Display		5.7 inch color LCD panel	
Display language		English, Japanese	
Operation method		Touch panel, buttons	
Printer		Built-in; measurement results and measurement parameters can be printed	
Input/output connectors	Count alarm terminals	Relay contacts, linked to alarm function	
	USB port 1	Type A, for copying measurement data from internal memory to USB memory media	
	USB port 2	Type B, for connection to computer	
	Ethernet port	RJ-45, for connection to computer (for details on usage, please contact Rion Corporation.)	
Environmental conditions for operation		10 °C to 35 °C, less than 85 % RH (no condensation, 30 % to 80 % when using printer)	
Power	AC adapter	100 V to 240 V AC, 50/60 Hz	
	Power consumption	Approx. 29 VA (when not charging), approx. 82 VA (when charging, max. load)	Approx. 15 VA (when not charging), approx. 68 VA (when charging, max. load)
	Lithium ion battery	Removable internal battery; 1 supplied, max. 2 batteries can be set	
	Operation time on one charge	With 1 battery: approx. 3.5 hrs, with 2 batteries: Approx. 7 hours	With 1 battery: approx. 6 hrs, with 2 batteries: approx. 12 hours
	Charging time	When charging from KC-32/31: approx. 3 hrs (1 battery), approx. 5 hrs (2 batteries)/When using charger: approx. 4 hrs	
Dimensions and weight		203 mm (H) x 260 mm (W) x 266 mm (D) (excl. protruding parts); approx. 5.5 kg (with 1 battery), approx. 6 kg (with 2 batteries)	
Supplied accessories		Sampling tube (plastic, 1 m), constant speed suction probe, zero count filter, AC adapter, power cord, battery x 1, quick instruction manual, CD-ROM (Full instruction manual, Audit trail display application Log Viewer), Thermal paper x 1	

Options	Sampling tube, Spare battery, charger, USB memory media, carrying case, USB cable, Thermal paper TP-34, Lint-free thermal paper TP-33
Factory options	D/A converter interface (with support for 2 particle sizes), Outlet

KC-32/31 Dimensional Drawing (Unit : mm)



Front View



Side View

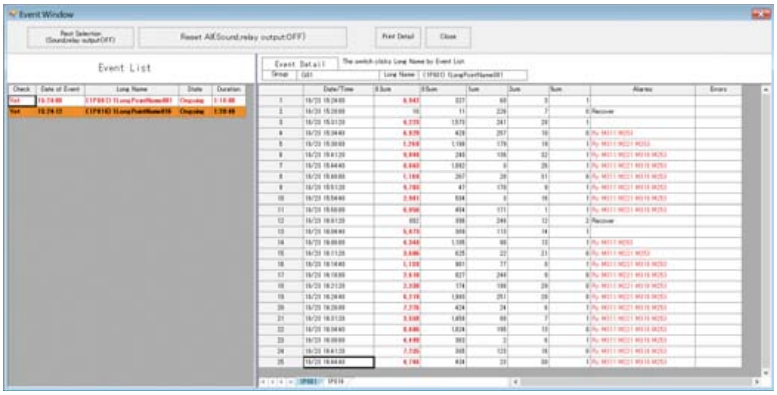
RP Monitor Evo10 K1701 Ver.2

Options

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

- Allows control of up to 8 particle counters in serial mode, using 8 ports.

Operating system: Microsoft Windows 10 Pro 64 bit



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