SPECIFICATIONS

PARTICLE SENSOR

KA-82

RION CO., LTD.

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No. 01016-2E 21-03 Printed in Japan

Outline

The KA-82 is a particle sensor designed for the multi-point systems which monitor air purity in clean rooms. It is based on the light scattering method for the sensor to measure the size and number of airborne particles. The KA-82 incorporates the proprietary Rion multi-point system interface which allows connection to a multi-point monitoring system.

The KA-82 can determine the particle count in five size ranges (≥0.1 µm, ≥0.15 µm, ≥0.2 µm, ≥0.3 µm, and ≥0.5 µm). The air flow rate is 2.83 L/min (automatic control).

The KA-82 does not have measurement controls or display for measurement results. It is designed to be used under control of a controller what take a leading part of a multi-point system (optional multi-point monitoring system software).

The KA-82 has two alarm circuits can be controlled independently.

Specifications

Optical system	90° sideway light-scattering method
Light source	Laser-diode pumped solid state laser (wavelength 1064 nm), open-cavity type
Laser diode:	Wavelength 800 nm, rated output power 1 W
Laser medium:	$Nd:YVO_4$
Laser product class	Class 1, IEC 60825-1:2014 Internal particle detection mechanism uses Class 3B and Class 4 lasers
Light collector	Aspherical lenses (condensing half-angle 40 degrees)
Light detector	Photodiode
Air flow method	Purified sheath air envelops sample air coaxially
Sample flow rate	2.83 L/min
Flow control	Automatic control (sample flow rate ±10%)
Calibration	Polystyrene latex (PSL) particles in clean air (refractive index 1.6)
Minimum particle size	0.1 µm (for spherical particles with refractive index 1.6)
Particle size ranges	Five channels (≥0.1 µm, ≥0.15 µm, ≥0.2 µm, ≥0.3 µm, ≥0.5 µm)
Maximum particle number concentration	

	10,000 particles/L (coincidence loss within 5%)
False count rate	Less than 1 particle per 5 minutes
Sample air inlet	
Inlet	Insert the supplied sampling pipe for introduction of sample air
Pressure range	±4 kPa (to which automatic flow control functions)
LED indicators	
POWER	Shows power status • Lit green when power to the unit is on • Off when power to the unit is off
LASER	Shows light source and particle sensor status • Lit green when the light source (laser diode) is operating normally • Lit red when the temperature of the light source (laser diode) is outside the specified range • Flashes red when the output of the light source (laser diode) is below the rated level • Flashes green when the interior of the sensor has been contaminated by coarse particles, high particle number concentration, or condensation etc. • Off when light source (laser diode) is off
FLOW	Shows sample air flow status • Lit green when sample air flow rate is within specified range • Flashes green when sample air flow rate is within –8% to –10% or +8% to +10% of specified range • Flashes red when sample air flow rate is more than ±10% outside of specified range • Off when pump is stopped
DATA LINK	Shows the status of communication with controller via DATA LINK connector • Lit green when the unit exists in the state that can be communicated • Lit intermittently in green when communication is being carried out normally • Lit intermittently in red when error has occurred during communication • Off when no communication is being carried out, or the unit is not controlled by the controller

Connectors

ALARM1 and ALARM2

Maximum load 30 V DC, 1 A
Terminals are closed by relay when the instruction of alarm output via the DATA LINK connector

DATA LINK: For multi-point system interface

Power requirements: 100 V to 240 V AC, 50/60 Hz, approx. 100 VA
(Supplied power cord only for use in Japan on 100 V AC)

Ambient conditions for operation

+15ºC to +30ºC, 85% RH or less (no condensation)

Ambient conditions for storage

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

Dimensions: 206 mm (H) × 155 mm (W) × 340 mm (D) (max.)
185 mm (H) × 155 mm (W) × 330 mm (D) (without protruding parts)

Weight: Approx. 7.5 kg

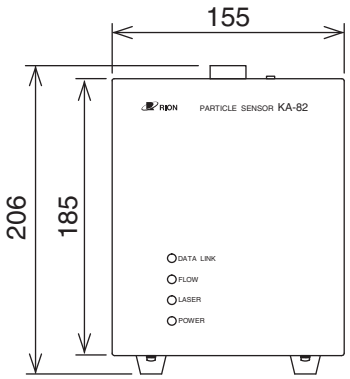
Supplied accessories

Sampling pipe	1
Sampling tube (2 m)	1
Power cord (for use in Japan with 100 V AC, 2.5 m)	1
Instruction manual	1
Inspection certificate	1

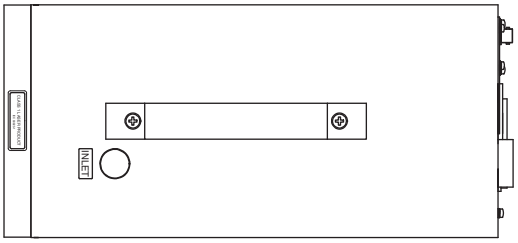
Options

Sub-line cables

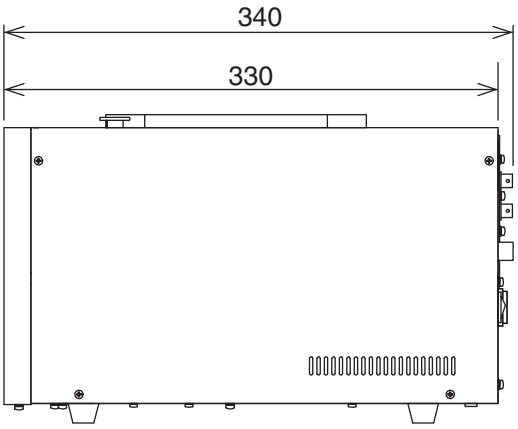
5 m	KZ-44-S01
10 m	KZ-44-S02
20 m	KZ-44-S03
30 m	KZ-44-S04
40 m	KZ-44-S05
50 m	KZ-44-S06
Filter	KC-22-S10
Terminator	KE-80-S03



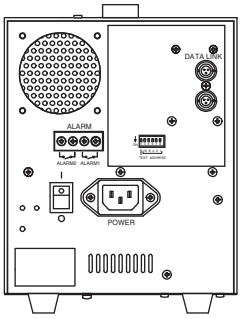
Front view



Top view



Side view



Rear view

Unit: mm

Dimensional Drawings

Specifications subject to change without notice