Ordering Information

Sensor

Appearance	Item	Measured particle diameter	Model
	Air Particle Sensor Particle measurement type	0.3, 0.5, or 1.0 μm min.	ZN-PD03-S
	Air Particle Sensor Dust measurement type	5μm(10μm), 20μm(30μm), 50μm min. ( )is selectable.	ZN-PD50-S

PC Software

Appearance	Item	Model
	Wave Inspire ES	ZN-SW11-S

System Requirements OS:Windows XP, Windows Vista
CPU:Compatible with Intel processors, 1GHz or higher
Memory:1GB or more (2GB or more recommended)

Accessories(Order Separately)

Appearance	Item	Model
	Change filter set for Particle measurement type	ZN9-PF1-S
	Change filter set for Dust measurement type	ZN9-PF2-S
	Exhaust tube(4m)	ZN9-PT4-S
	Exhaust tube(8m)	ZN9-PT8-S
	Filter for cleaning	ZN9-PC1-S

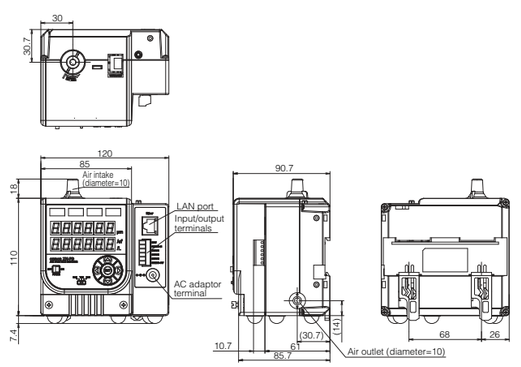
Specifications

Item \ Model	Particle measurement type	Dust measurement type
	ZN-PD03-S	ZN-PD50-S
Measurement method	90° sideways light-scattering method	
Light source	Semiconductor laser	
Measured particle diameter	0.3, 0.5, or 1.0 μm min.	5μm(10μm), 20μm(30μm), 50μm min.(See note 1.)
Particle concentration	0 to 100,000particles/cf	0 to 50,000particles/cf
Sample flow rate	≧2.8Litter/min	≧6.0Litter/min
Status outputs(2 outputs)	Photo coupler output (Status outputs linked with clean levels)	
System error status output		
Trigger Input	Photo coupler input	
Communication interface	Ethernet twisted-pair cable connector (TCP/IP)	
Indicators	Clean Levels:4levels(adjustable) 7-segment main display (red/6digits):Count value (Selectable particles/cf, particles/Litter, counts of particles per measurement time) 7-segment sub-display(green/6 digits):Selected particle diameter	
Measure Mode	Real-time mode (by second)/Cycle mode(by set cycle)/Trigger mode(by trigger)	
Power supply voltage	DC19V (See note 2.)	
Current consumption	1A MAX	
Ambient temperature range	Operating:0 to 35˚C	Operating:0 to 40˚C
	Storage:-15 to 50˚C (with no icing or condensation)	
Ambient humidity range	Operating and storage:35% to 85% (with no icing or condensation)	
Insulation resistance	20 MΩ min. at 500 VDC	
Withstand voltage	1,000 VAC, 50/60 Hz for 1 min	
Vibration resistance	110 to 55 Hz, 0.3-mm double amplitude, 50 min	
Materials	ABS	
Degree of protection	IP20	
Installation method	DIN track mount / Self standing	
Weight (Packed state)	Approx.1.7kg	
Accessories	Instruction Sheet, AC adapter	
	Air-intake tube(Tubing ID:Φ10mm, Length 1m)×1	Air filter ×1

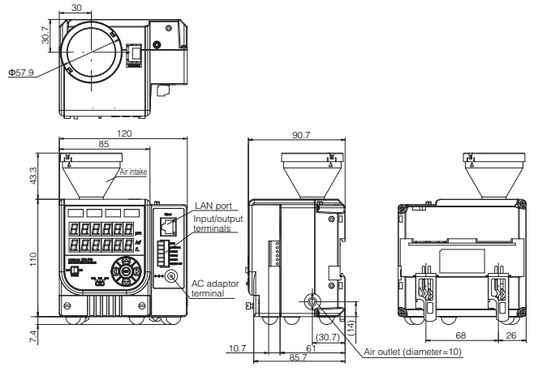
Note 1. ( ) is selectable.
Note 2. Must be used with specified AC adapter.

Dimensions

ZN-PD03-S (Unit:mm)



ZN-PD50-S (Unit:mm)



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OMRON

New

Production-Environmental Sensing Series The First

Air Particle Sensor
ZN-PD-S

Cost Effective and Wide range measurement size (From Particle to Dust)

Optimized Quality Management with Real-time Particle Monitoring System

Particle measurement type
(0.3μm to 1μm)

Dust measurement type
(5μm to 50μm)

Particle/contamination Real-time Monitoring

Thinking of upgrading from manual fixed-point particle measurement in your clean environment to a continuous monitoring solution?
The ZN-PD03-S Particle Sensor (Particle Type) provides continuous high-precision monitoring at a very low set-up cost.
It is ideal for traceability and fault analysis and substantially reduces labor expenses.

Combines high-precision measurement with continuous monitoring

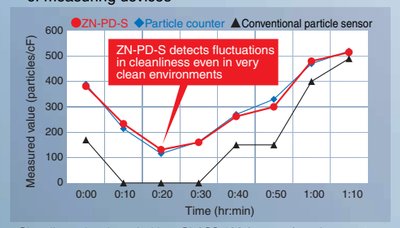
Measurement accuracy to rival a particle counter?

Top In Class

The Particle Sensor generates air flow of 2.83 liters per minute through a combination of fully rectified internal design and high-suction fan. Measurement accuracy is close to that of a particle counter, thanks to Omron laser-optic design technology as used in high-precision displacement sensors.

Intake air is irradiated with laser light and the level of scattered light from particles is measured.

■ Typical air cleanliness readings from different types of measuring devices

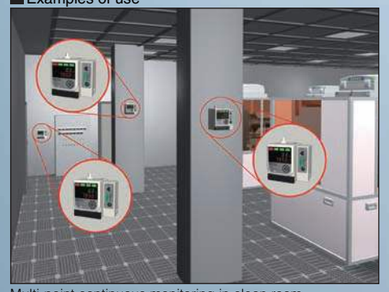


- Cleanliness levels varied in a CLASS 100 (approx.) environment using FFU air flow control.
- Particle sensor measurements taken via scaling.

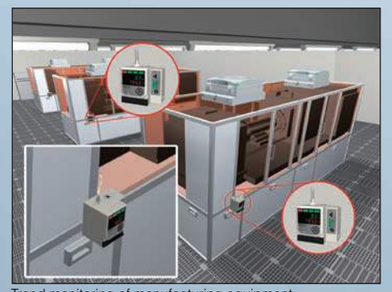
Low-maintenance design for continuous measurement

The maintenance workload is reduced substantially through a combination of long-lasting fan construction and intermittent laser mode designed to prolong the life span of the laser. Maintenance costs are also much lower since the Particle Sensor does not need an external pump which tends to require frequent replacement.

■ Examples of use



Multi-point continuous monitoring in clean room

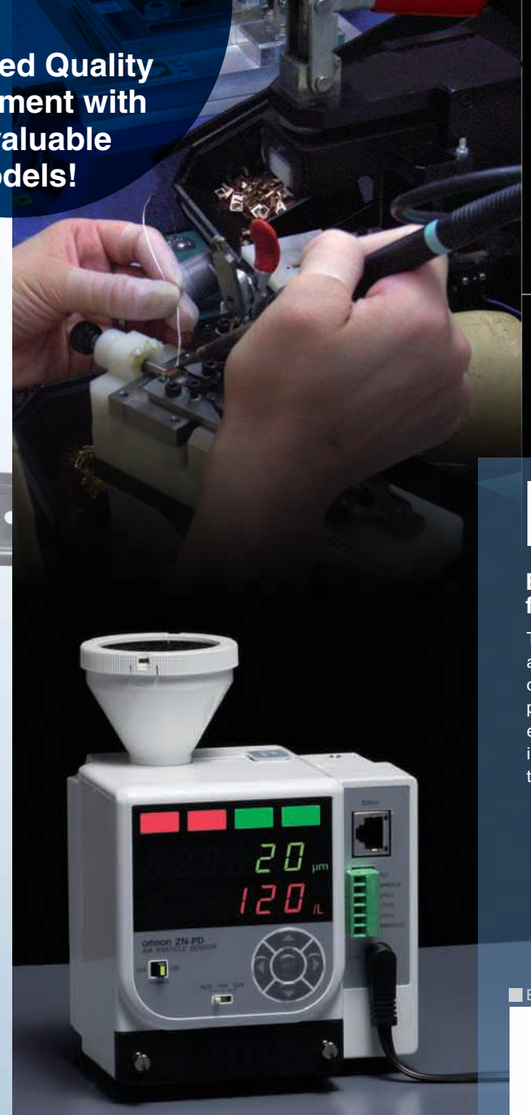


Trend monitoring of manufacturing equipment

Particle measurement type
Model ZN-PD03-S

0.3μm 0.5μm 1.0μm
Simultaneous real-time sensing

Optimized Quality Management with Two valuable Models!



Dust measurement type
Model ZN-PD50-S

5(10)μm 20(30)μm 50μm
Simultaneous real-time sensing

ALL NEW

Ambient Dust Real-time Monitoring

Foreign matter in the production environment can affect the quality of finished products. Perhaps your production environment is affected by dust? The largest form of particles, typically carried by human operators and generated by machinery.
The ZN-PD50-S Particle Sensor (Dust measurement type) provides the most simple and effective solution yet for monitoring dust levels.

Measure dust levels and identify dust sources with a single unit

Industry First

Efficient measurement of falling dust

The combination of a powerful fan and a funnel-shaped air intake efficiently captures falling dust. A built-in filter prevents large dust particles from entering the system and causing internal blockages. The filter is simple to replace.

Dust Catcher feature to identify dust sources

Double-sided tape on the pull-out Trap Box captures dust particles. The dust can then be analyzed under a microscope to determine the source.

Filter

Trap Box

■ Examples of use

Trend monitoring in cell manufacturing production line

Dust monitoring on paint process

Measurement data is used for trend analysis and early detection of problems

Supports trigger input as well as two-stage alarm and error outputs.Can be configured to begin measurement as required in response to trigger input and to generate alarms in accordance with monitoring levels.

Connects readily to Ethernet hub for networking with computers

EtherNet hub

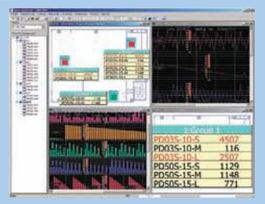
Recommended: SYSMAC CS/CJ series Ethernet unit (Omron)

Connect to PLC to create an independent low-energy system tailored to the production environment.

Production-Environments Visualizer (PC software)

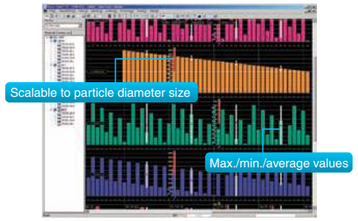
Wave Inspire ES

Option Model ZN-SW11-S



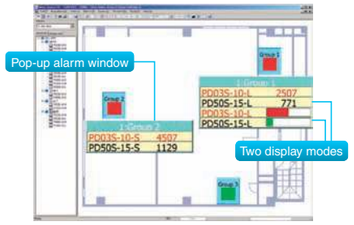
Visual representation of particle volumes makes it easier to identify trends for faster analysis! Also handles time-consuming tasks such as data storage and collation.

Real-time analysis of measurement data



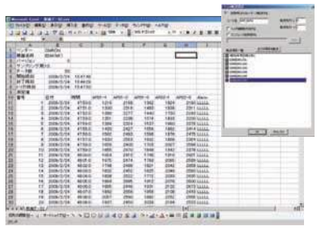
Shows hourly and daily trends at a glance-ideal for early detection of problems.

Diagram layout of equipment and measuring devices



Pop-up windows provide immediate notification of alarms to enable a rapid response.

Convert selected data to Excel format



Select required log data and convert to CSV file format. Direct import into Excel file format is also available.