

# Differential Pressure Station ZN-DPX21-SA

CSM\_ZN-DPX21-SA\_DS\_E\_3\_1

## Precision measurement of differential pressure inside and outside of clean room or booth

- Ultra wide-range precision measurement
- Equipped with an SD card slot.
- LAN port connection makes it possible to easily construct monitor systems.
- Bundled with PC software for easy conversions of logging data to graphs.
- Using the optional environmental visualization software makes it possible to show the sensing data in real time on a waveform display and layout display.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Be sure to read "Safety Precautions" on page 3.

## Ordering Information

### Main unit

#### Sensor heads

Appearance	Item	Model
	Sensor head 1.5 m type	ZN-DPS11-S
		ZN-DPS11C-S *
	Sensor head 10 m type	ZN-DPS15-S
		ZN-DPS15C-S *

\* Please choose this form when you buy with the calibration certificate.  
Contents of Certificate of Calibration Set: Calibration Certificate, Inspection Result, and Traceability Chart

#### Stations

Appearance	Item	Model	Power supply
	Station	ZN-DPX21-SA	Battery/DC cable

### Options (Order separately)

Appearance	Item	Model
	Mounting Magnet *1	ZN9-EM01-S
	DC cable (2 m)	Straight type (ZN9-ED01-S comes with ZN-DPX21-SA)
		Right angle type
	AC Adapter Power supply voltage: 100 to 240 VAC/50 to 60 Hz Operating temperature range: 0 to 40°C	ZN9-ACP01-S
	Environmental Visualization Software Wave Inspire ES *2 *3 *4	ZN-SW11-S

- \*1. When the magnet is used, the vibration resistance becomes 55 Hz or less. (Two logger installation screws are attached.)
- \*2. System requirements OS: Windows XP / Windows Vista / Windows 7 (64 Bit not supported)  
CPU: compatible Intel processors, 1 GHz or higher.  
Memory: 1 GB or more (2 GB or more recommended)
- \*3. The compliant version is Ver2.1.0 or later
- \*4. The maximum number of connectable sensors is 95. (When one PC is connected with a leased line network. The sampling period is set to 10 minutes.)  
The number of possible sensor connections changes by a sampling period, connected number of PC or PLC, and the network load situation.

### Calibration service

Item	Model
Sensor head 1.5 m type	Calibration Certificate, Inspection Result
Sensor head 10 m type	Traceability chart
	ZN-DPS11-CAL
	ZN-DPS15-CAL

- Note:**
1. If a Certificate of Calibration is required after you purchase the sensor head, use the above model number to order one.
  2. As the sensor head and station are digitally connected, only the sensor head is subject to calibration. Remove the tube.
  3. It is necessary to ship the product back to OMRON in Japan.

## Ratings and Specifications

### Sensor head

Item	Type	ZN-DPS11-S	ZN-DPS11C-S	ZN-DPS15-S	ZN-DPS15C-S
Measurement range		-500 to 500 Pa			
Measurement precision		3%±0.2 Pa of the measured value (at 23°C)			
Resolution		0.1Pa			
Temperature effect		Zero point: No effects (lower than measurement resolution) Span: Less than 0.5% of the specified value/10°C			
Operating temperature range		0 to 50°C			
Applicable gas type		Air, nitrogen			
Cable length		1.5 m		10 m	
Weight (packaged)		Approx. 300g		Approx. 500 g	
Accessories 1		Instruction Sheet, air tube 1 m x 2, mounting screw (M3 x 8) x 2			
Accessories 2		—	Calibration Certificate, Inspection Result Traceability chart	—	Calibration Certificate, Inspection Result Traceability chart

**Note:** 1. For the precision under a rated environment, an offset less than 0.1 Pa/year may occur.

2. The accessories tube inside diameter is 4 mm, and the outside diameter is 6 mm.

### Station

Item	Model	ZN-DPX21-SA
Sensor that can be connected		Fine Differential Pressure Sensor Head (ZN-DPS1□□-S)
Display		LCD 7-segment 5-digit 2-step display, auxiliary information indicator display
Measurement interval		1 s, 2 s, 5 s, 10 s, 20 s, 30 s, 1 min, 2 min, 5 min, 10 min, 20 min, 30 min, 1 h
Calculation function		Instantaneous value, maximum value, minimum value, average value
Operating mode		Network connection mode, sleep mode *1, air particle sensor (ZN-PD□□-S□) connection mode *2
Recording mode		Continue *3, ring *4
Alarm signal output		Output to photocoupler (External power supply: 12 to 24 VDC, Load current: Max. 45 mA) Alarm hold setting is possible. *5
Communications interface		Ethernet (10BASE-T, 100BASE-TX)
Communications protocol		Socket (TCP), original protocol
Internal storage device		Internal memory: Approx. 11,000 data items *6
External storage device		SD card (to save measured values and to save/read set values), Recommended SD card: HMC-SD291 (manufactured by OMRON) *7
Power supply voltage		DC input: 24 VDC ±10% AC Adapter: 100 to 240 VAC/50 to 60 Hz Battery: 2 AAA batteries *8
Battery life		Approx. 1 year (sleep mode) Approx. 2 hours (Network connection mode, air particle sensor (ZN-PD□□-SA) connection mode) Measurement interval of 10 minutes (with 2 AAA nickel metal hydride batteries, with SD card not inserted) *9
Operating temperature range		0 to 60°C (AC adapter: 0 to 40°C)
Operating humidity range		20% to 85% (no condensation)
Weight (packaged)		Approx. 500 g
Accessories		Instruction Sheet, Startup Guide, Utility disk (CD-ROM) *10, Alarm output connector *11, DC cable (straight type), Ferrite core

\*1. Power saving mode. The indicator is always OFF in default setting. (Turns ON with button operation.)

Network communications with host devices cannot be made.

\*2. This mode makes one-to-one network connection with Air Particle Sensor (ZN-PD□□-S□) and enables logging of the particle count value and differential pressure data simultaneously to the SD card. Network communications with host devices cannot be made.

\*3. Automatically writes data to the SD card when reaching the upper limit of the internal memory and keeps recording until the capacity limit of the SD card. If the SD card is not inserted when the internal memory reaches the upper limit, recording stops. (Data can be output to the SD card by pressing the button after inserting the SD card.)

\*4. This mode always records the latest measured values for the upper limit of the internal memory. (When the measured values exceed the upper limit of the internal memory, the data items will be deleted beginning with the oldest data item.)

\*5. An alarm is shown when exceeding the upper limit value or lower limit value that has been set in threshold setting mode.

\*6. Air particle sensor connection mode is excluded.

\*7. If you use an SD card from another manufacturer, use an SDHC Class 4 or higher card. (You must confirm the operation of the SD card yourself.)

\*8. Nickel hydride battery and alkaline battery can be used. Manganese batteries cannot be used.

\*9. Battery life differs depending on measurement environment, sampling, operating mode, battery type or performance.

\*10. System Requirements for Enclosed PC Software (Station Utility: Setup Tool, Logging Tool, and SD Viewer ES)

OS: Windows XP / Windows Vista / Windows 7 (64 Bit not supported)

CPU: compatible Intel processors, 1 GHz or more.

Memory: 1 GB or more (2 GB or more recommended)

Microsoft, Windows, and Windows 7 are registered trademarks of Microsoft Corporation in the United States and/or other countries.

\*11. The connector is type XW4B-02B1-H1, made by OMRON.

## Safety Precautions

**⚠ WARNING**

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



For technical information and product FAQs, refer to the “Technical Guide” on your OMRON website.

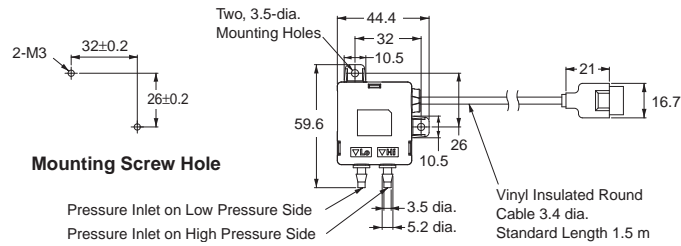
## Dimensions

(Unit: mm)

Tolerance class IT16 applies to dimensions in this data sheet unless otherwise specified.

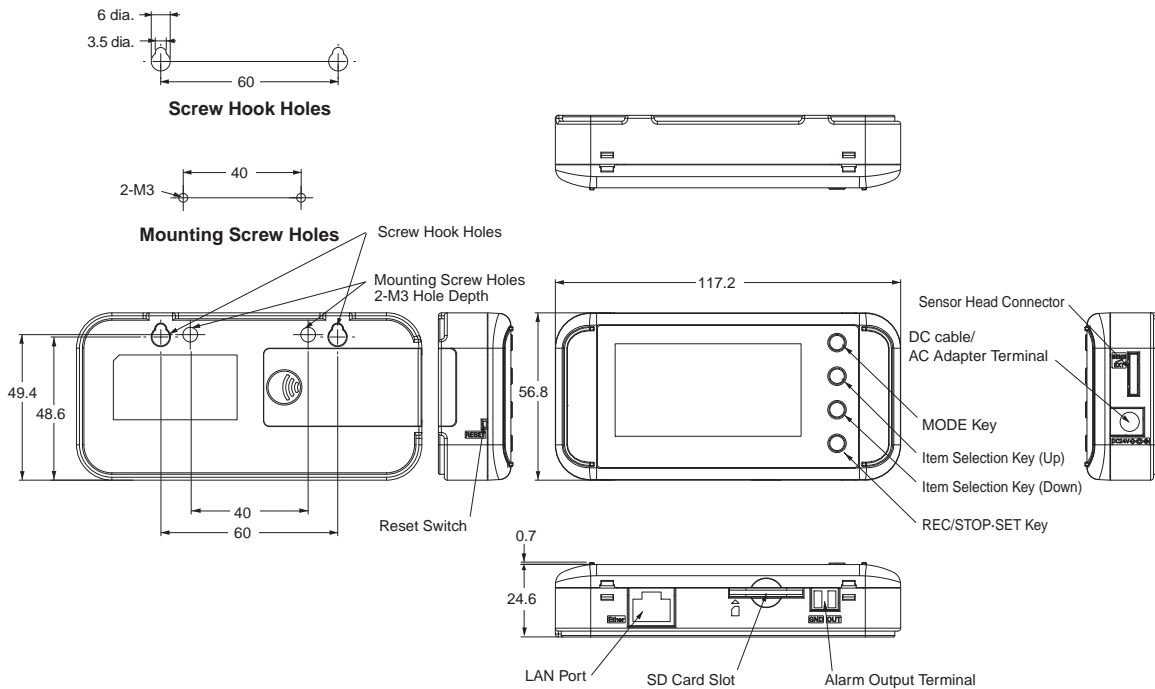
### Sensor head

#### ZN-DPS11-S



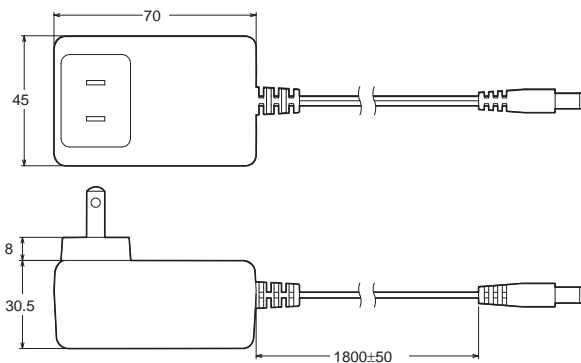
### Station

#### ZN-DPX21-SA



### AC adapter

#### ZN9-ACP01-S



## Terms and Conditions Agreement

### Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

### Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

### Limitation on Liability; Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

### Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

### Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

### Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

### Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

### Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.