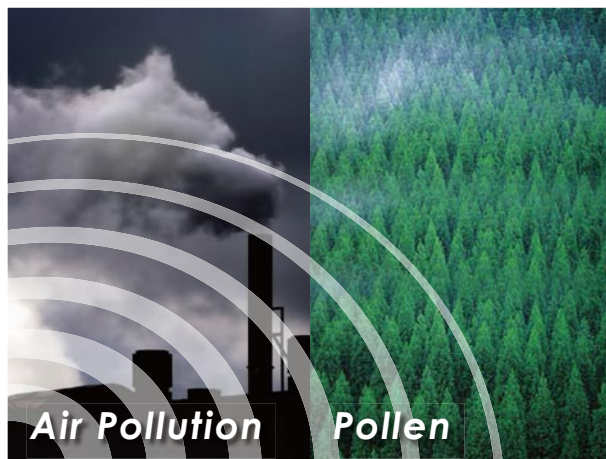


# SENSOR LINEUP

Sensors for Indoor and Outdoor Environmental Quality





Appliances



Automotive



Food & Pharma



Industrial & OEM



Test & Measurement



Indoor Air Quality

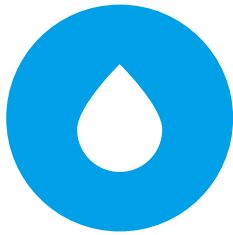


Outdoor Air Quality



Cleanroom

## SENSOR TYPES



Humidity Sensor

### CL-M53R

Humidity Sensor



### C15-M53R

Humidity Sensor with Case

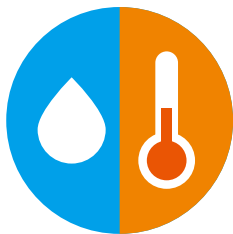


### RHI-112A

Humi. & Temp. Sensing Module



Analog(Voltage)  
Thermistor  
OUTPUT



Humi. & Temp.  
Sensing Module

### RHI-150D

Humi. & Temp. Sensing Module



Digital(I2C)  
Digital(I2C)  
OUTPUT



### RHU-450

Humi. & Temp. Sensing Module  
for Automotive Application

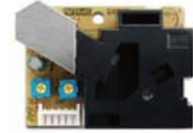
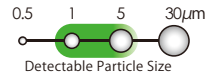


Analog(Voltage)  
Thermistor  
OUTPUT



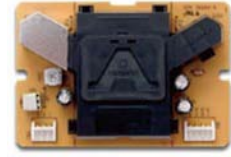
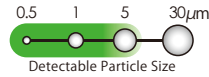
## PPD 42NJ

Particulate Matter Sensor



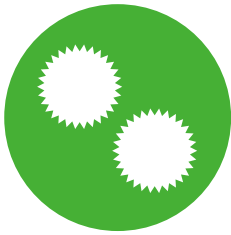
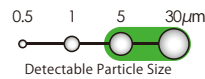
## PPD 60PV

Particulate Matter Sensor



## PS2

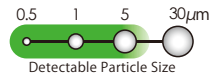
Pollen Sensor / Large Particle Sensor



Particle Sensor

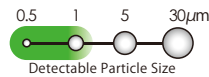
## PMS1

PM2.5 Sensor



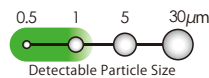
## AES1-05N

Aerosol Sensor



## AES-1000-05N

Aerosol Monitor



Formaldehyde Monitor

## FMM-MD

Formaldehyde Multimode Monitor



Odor Meter

## OMX Series (3 models)

Handheld Odor Meter



# INDUSTRIES SERVED AND SOLUTIONS



## Appliances

Sensors have been increasingly integrated to improve functionality of appliances, for augmenting comfort, enhancing function and conserving energy consumption.



### Monitor IAQ to keep better condition.

- Air Purifier
- Air Conditioner
- Ventilating Fan



### Visualize particle concentration level.

- Air Quality Monitor



### Balance comfort and saving energy.

- Humidifier
- Washing Machine
- Dehumidifier
- Drying Machine
- HVAC Equipment



### Keep foods fresh.

- Refrigerator
- Grain Warehouse



### Monitor IAQ data to read, show and record.

- Thermohygrometer
- Clock
- Weatherstation



### Improve print quality and paper feeding function.

- Printer
- Copying Machine





## Automotive

Balancing comfortable humidity/temperature condition in the car and improving fuel efficiency of the engine has been increasingly absolutely necessary function.



### Balance in-vehicle comfort and fuel efficiency.

- in-vehicle Air Conditioning Control



## Food & Pharma

Food manufacturing processes and pharmaceutical manufacturing processes rely on humidity and dust control. They are sensitive to variations in humidity and dust levels. Sensors are used to both control and monitor the conditions.



### Control the air conditons for production.

- Pharmaceutical Manufacturing Process
- Food Manufacturing Process



### Leavening/Baking control.

- Bakery Dough Conditioner



### Keep perishable foods fresh.

- Container Refrigeration Unit
- Refrigerated Open Display Case



## Industrial & OEM

Increasingly humidity is being considered essential for optimum comfort, production quality, energy use and particles are related to product quality and occupational health. Our humidity/particle sensors are sold to OEMs and are utilized in various industrial application.



### Balance comfort and saving energy.

- Building HVAC System
- Ventilating fan
- Train Air Conditioning System





## Optimize cultivation condition.

- Greenhouse



## Production quality control and Occupational Health.

- Painting Line
- Work in Dusty Environment



## Test & Measurement

Formaldehyde (HCHO) is a reactive gas emitted by various off-gassing sources, such as building materials and furniture, and also one of the source materials that cause sick building syndrome and increase the risk of some cancers. We developed sensor and device for time-integrated measurements of formaldehyde concentrations.



## Measure/Monitor the concentration of Formaldehyde.

- Formaldehyde (HCHO) measurement in 3 mode: Direct / Samplers / Continuous



## Indoor Air Quality

More than 90% of all homes and building have at least one indoor air quality problem. Monitoring IAQ helps solving problem about health, comfort. By making invisible problems visible, you move forward with solutions that will improve quality of life.



## Monitor indoor air quality condition.

- Air Quality Monitor (Temperature, Humidity, Particle, Formaldehyde)
- Controller
- House Dust Checker



## Control ventilation of living area.

- Ventilating Fan



## Odor analysis

- Finding odor source
- Evaluation for deodorizing





## Outdoor Air Quality

The large number of health problems associated with particulate pollution. The effects of inhaling particulate matter is asthma, lung cancer, cardiovascular issues. The size of the particle is a main determinant of where in the respiratory tract the particle will come to rest when inhaled.



### Real-time pollen levels data collection.

- Pollen Level Monitor



### Air Pollution (Particulate Matters) monitoring.

- Sensor Station
- PM2.5 Measurement



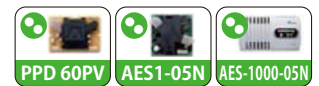
## Cleanroom

Cleanliness level in the industrial cleanroom needs to be maintained consistently. Our aerosol monitoring system enables to monitor air cleanliness in real time at multiple locations easily.



### Monitor actual condition of cleanliness level.

- Industrial Cleanroom



# SPECIFICATIONS

## Humidity Sensor



Product Name **Humidity Sensor CL-M53R**  
 Model No. CL-M53R  
 Rated Voltage 5.0VAC or less(Recommendation : 1.0VAC)  
 Operating Temperature 0 to 60deg.C  
 Operating Humidity 95%rh or less(No Condensation)  
 Accuracy(Humidity) ±5%rh(at25deg.C, 60%rh, 1kHz)  
 Dimensions 5(W) × 20(H) × 0.6(D)mm



Product Name **Humidity Sensor CL-M53R**  
 Model No. CL-M53R  
 Rated Voltage 5.0VAC or less(Recommendation : 1.0VAC)  
 Operating Temperature 0 to 60deg.C  
 Operating Humidity 95%rh or less(No Condensation)  
 Accuracy(Humidity) ±5%rh(at25deg.C, 60%rh, 1kHz)  
 Dimensions 7.5(W) × 20(H) × 3.6(D)mm



Product Name **Humidity & Temperature Sensing Module RHI-112A**  
 Model No. RHI-112A  
 Supply Voltage 3.15 ~ 5.5VDC  
 Operating Temperature 0 to 60deg.C  
 Operating Humidity 95%rh or less(No Condensation)  
 Humidity Detecting Range 10 to 90%rh  
 Accuracy (Humidity) ±3%rh(at25deg.C, 50%rh, Vin=3.15 ~ 5.5VDC)  
 Humidity Output Analog(Voltage)  
 Temperature Output Thermistor  
 Dimensions 18(W) × 30(H) × 11.6(D)mm



Product Name **Humidity & Temperature Sensing Module RHI-150D**  
 Model No. RHI-150D  
 Supply Voltage 3.0 ~ 5.5VDC  
 Operating Temperature 0 to 60deg.C  
 Operating Humidity 95%rh or less(No Condensation)  
 Humidity Detecting Range 10 to 90%rh  
 Accuracy (Humidity) ±3%rh(at25deg.C, 50%rh, Vin=3.0 ~ 5.5VDC)  
 Humidity Output Digital(I2C)  
 Temperature Output Digital(I2C)  
 Dimensions 10(W) × 26(H) × 11(D)mm



Product Name **Humidity & Temperature Sensing Module RHU-450**  
 Model No. RHU-450  
 Supply Voltage 5.0VDC ±5%  
 Operating Temperature -30 to 80deg.C  
 Operating Humidity 95%rh or less(No Condensation)  
 Accuracy (Humidity) ±5%rh(at25deg.C, 50%rh, Vin=5.0VDC ±5%)  
 Humidity Output Analog(Voltage)  
 Temperature Output Thermistor  
 \*This module is custom-made just for Automotive application.

## Particle Sensor



Product Name **Particulate Matter Sensor PPD42NJ**  
 Model No. PPD42NJ  
 Detectable particle size approx. 1 μm and larger  
 Supply Voltage 5VDC  
 Operating Temperature 0 to 45deg.C  
 Operating Humidity 95%rh or less(No Condensation)  
 Output method Digital(Pulse)  
 Dimensions 59(W) × 45(H) × 22(D)mm  
 Weight 24g (approx.)



Product Name **Particulate Matter Sensor PPD60PV**  
 Model No. PPD60PV  
 Detectable particle size approx. 0.5 μm and larger  
 Supply Voltage 5VDC  
 Operating Temperature 0 to 45deg.C  
 Operating Humidity 95%rh or less(No Condensation)  
 Output method Analog(Voltage), Digital(Pulse)  
 Dimensions 88(W) × 60(H) × 20(D)mm  
 Weight 36g (approx.)



Product Name **Pollen Sensor/Large Particle Sensor PS2**  
 Model No. PS2  
 Detectable particle size approx. 15 μm and larger  
 Supply Voltage 12VDC  
 Operating Temperature -10 to 45deg.C  
 Operating Humidity 20 to 85%rh(No Condensation)  
 Dimensions 71.4(W) × 76.4(H) × 36.7(D)mm  
 Weight 120g (approx.)  
 \*This sensor is usually used with connection I/F and Evaluation software.



Product Name **Aerosol Sensor AES1-05N**  
 Model No. AES1-05N  
 Detectable particle size approx. 0.5 μm and larger  
 Supply Voltage 12VDC  
 Operating Temperature 0 to 40deg.C  
 Operating Humidity 30 to 80%rh(No Condensation)  
 Output method Digital(Pulse)  
 Dimensions 90(W) × 90(H) × 23(D)mm  
 Weight 130g (approx.)



Product Name **Aerosol Monitor AES-1000-05N**  
 Model No. AES-1000-05N  
 Monitoring Particle Size approx. 0.5 μm and larger  
 Supply Voltage 12VDC  
 Operating Temperature 0 to 40deg.C  
 Operating Humidity 30 to 80%rh(No Condensation)  
 Cleanliness Class Class 100 to Class 100,000  
 Communication Ethernet  
 Dimensions 192.0(W) × 102.0(H) × 36.7(D)mm  
 \*This is the monitor device in which AES1-05N is implemented.



Product Name **PM Sensor PMS1**  
 Model No. PMS1  
 Detectable particle size approx. 0.3 μm and larger  
 Supply Voltage 12VDC  
 Operating Temperature -10 to 45deg.C  
 Operating Humidity 20 to 85%rh(No Condensation)  
 Dimensions 71.4(W) × 76.4(H) × 36.7(D)mm  
 Weight 130g (approx.)

## Formaldehyde Monitor



Product Name **Formaldehyde Multimode Monitor FMM-MD**  
 Model No. FMM-MD  
 Detection Range 20 to 1000ppb  
 Accuracy ±10% at 40, 80, 160ppb  
 Resolution 1ppb  
 Power 2xAA size alkaline batteries, or AC Adaptor  
 Operating Temperature -10 to 40deg.C  
 Operating Humidity 20 to 90%rh(No Condensation)  
 Dimensions 150(W) × 90(H) × 46.9(D)mm  
 Accessories Sensor Assy x 5pcs, Carrying case, Data filing software, USB cable, AC Adaptor, AA size batteries



Product Name **Handheld Odor Meter OMX-SRM/ADM/TDM**  
 Model No. OMX-SRM/ADM/TDM  
 Detection Method Two Semiconductor Gas Sensors  
 Sampling Method Continuous Sampling with Built-in Air Pump  
 Operating Temperature 0 to 40deg.C(No Condensation)  
 Power 4×AASize Alkaline Batteries or AC Adaptor  
 Dimensions W74 × L167.5 × D35mm approx.  
 Weight 250g approx. (Without Batteries)

## Odor Meter

Contact Us

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