

# Handheld Odor Meter OMX-TDM

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## Operation Manual

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## 1. Introduction

### 1-1 Supplied Component List

Handheld Odor Meter OMX-TDM has been packaged carefully and includes all the components necessary for full operation. Upon receipt, check the kit contents carefully to find you received the following items in good condition.

The instrument kit contains:

OMX-TDM Base Unit	1
Suction Nozzle	1
AC Adaptor	1
AA Alkaline Battery	4
USB Connection Cable	1
Air Purifying Unit	1
Activated Carbon (50cc/ bag)	1
Replacement Filter for Air Purifying Unit	4
Replacement Filter for Suction Nozzle	5
Operation Manual	1

## 1-2 Warning

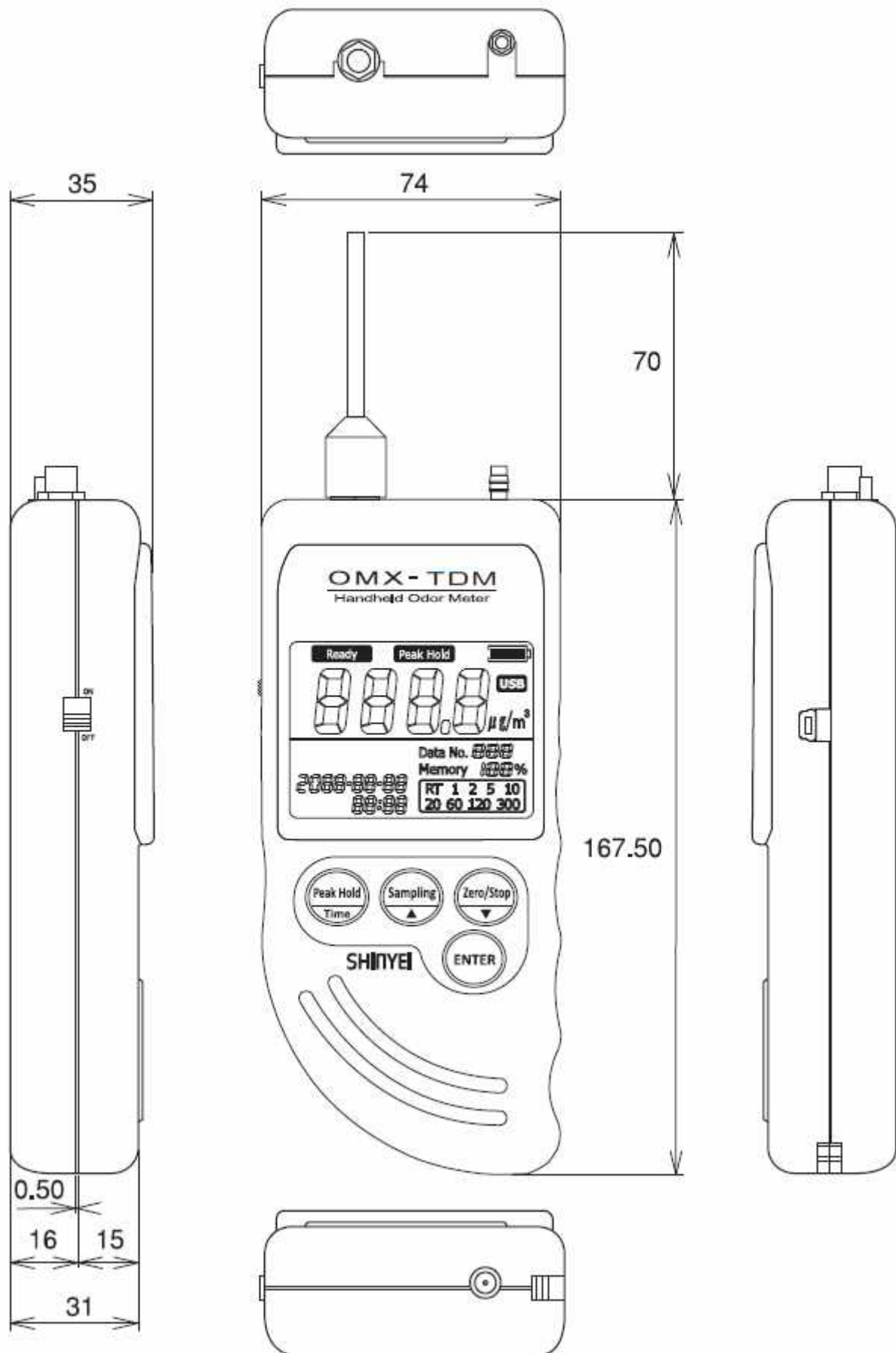
<b>WARNING</b>
<ul style="list-style-type: none"><li>▪ Do not use any adaptors except supplied AC Adaptor.</li><li>▪ Do not use in explosive atmosphere. The device is not designed for explosion proof. Do not use it where combustible and/ or explosive gases exist.</li><li>▪ Do not dismantle the base unit.</li></ul>

## 1-3 Cautions

### CAUTIONS

- **Do not install, use, or store the unit at a place where:**
  - Ambient temperature is not in the range of -10 to 40 °C. (14-104°F)
  - Ambient humidity exceeds 90% R.H.
  - Condensation occurs due to rapid temperature change.
  - Corrosive and/ or explosive gases exist.
  - Direct vibration and/ or stream occur.
  - Mush dust, salty materials, and/ or iron powders exist.
  - Static electrons, magnetic, and/ or electronic noise can occur.
  - Cool or warm air from conditioners has direct influence.
  - The unit is exposed to direct sunlight.
  - Heating occurs due to heat radiation.
- **Do not use or store the unit at a place where the following gases exist:**
  - Extremely concentrated odor
  - Cigarette smoke and/ or oil mist
  - Silicon compound gas included in hair spray, adhesive, and silicon rubber etc.
  - High concentrated chloride, acidic substances, corrosive gas, and chlorofluorocarbon etc.
- Exchange new batteries if battery status displays “Low.”
- Do not use rechargeable batteries.
- Do not use liquid such as benzene and/ or thinner to clean the unit surface.
- Do not block suction nozzle and/ or exhaust nozzle.

### 1-4 Unit Dimension



Unit: mm

## **2. General Description**

Handheld Odor Meter is the most popular simplified tool for odor analysis, which enables to display TVOC as Toluene-value Digital Indication numerically by comparing odor gases and purified air.

The reading shown on display is calculated based on our original principle.

By using data filing software, you can transfer measuring data to PC in easy steps.

### **Toluene-value Digital Indication**

Simply turn on the device and start measuring.

Real-time gas concentration converted into Toluene concentration can be measured continuously.

### **Peak-hold Function**

Maximum strength level can be retained.

### **Memory Sampling Measurement Mode**

Up to 511 measuring data can be saved upon selecting sampling rate: 1, 2, 5, 10, 20, 60, 120, or 300 seconds.

### **Transferring measuring data to PC**

By using data filing software, it can transfer measuring data automatically from the device to PC during measurement.

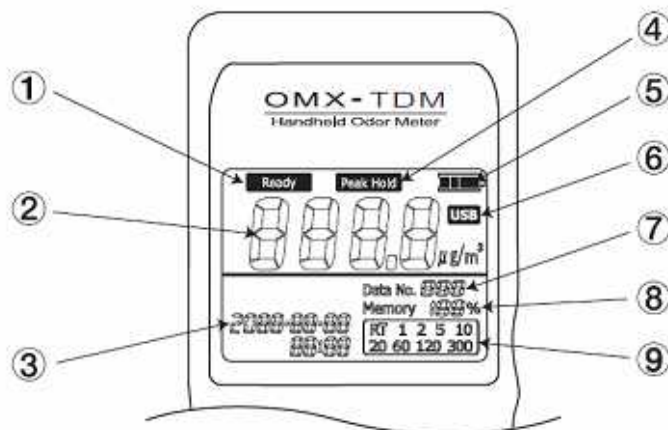
Or, it also can transfer saved measuring data from the device to PC and draw illustrated graph automatically.

To download OMX-TDM Data Filing Software, enter the following URL and go to:

<http://www.odormonitor.com/download.html>

## 2-1 Instrument Features

### 2-1-1 LCD Display



No.	Name	Function
	Ready	After turning, it will be blinking for about ten minutes for initializing. Start measuring after Ready stops blinking.
	Toluene-value Digital Indication	Gas concentration converted into Toluene concentration is displayed from 0 to 9999 in $\mu\text{g}/\text{m}^3$ .
	Calendar Function	Upper : Year-Month-Date Lower : Hour-Time
	Peak Hold	Maximum strength level can be retained.
	Battery Status	<ul style="list-style-type: none"> <li>■■■■ Full</li> <li>■■■□ Good Measurable for 3 to 4 hours.</li> <li>■■□□ Moderate Measurable for 1 to 2 hours.</li> <li>■□□□ Low Change battery.</li> <li>□□□□ No Battery</li> </ul>
	USB	USB Cable is connected.
	Data No.	Number of stored data is shown.
	Memory	Remaining memory capacity is displayed from 0 to 100%.
	Sampling Rate	Select sampling rate: RT (*), 1, 2, 5, 10, 20, 60, 120, or 300 seconds.

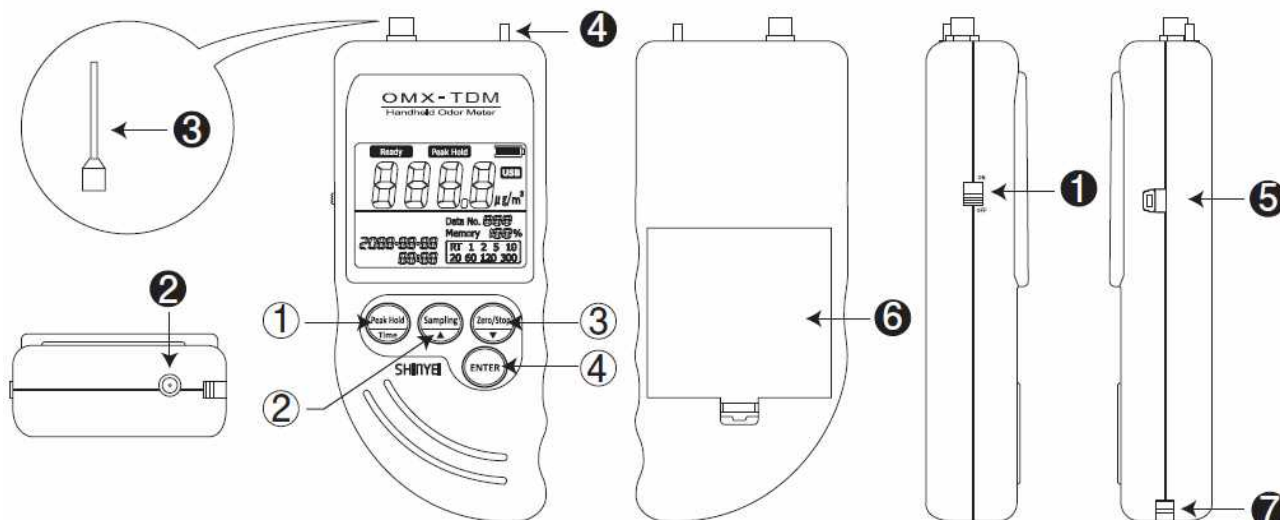
Real-time Sampling (\*) The value is displayed in every 3 second continuously.





By using Data Filing Software, the data is saved per a second.

Memory Sampling Sampling rate can be selected: 1, 2, 5, 10, 20, 60, 120, or 300 seconds.





## 2-1-2 Base Unit (OMX-TDM)



No.	Name	Function
		-Hold three seconds for Peak-hold Function. -Hold and turn on the device at the same time to set Calendar .
		-Select Sampling rate. -Set Calendar .
		-Use for Zero-point Mode. -Set Calendar .
		Confirm Sampling Rate and/or Zero-point Mode.
	Power Switch	Turn on and off the device.
	AC Adaptor Port	AC Adaptor is connected to the port.
	Suction Nozzle	Nozzle to take sampling air and/ or object gases.
	Exhaust Nozzle	Sampling air and/ or object gases are exhausted.
	USB Port	USB attached USB cable to connect the device to PC.
	Battery Box	Open or close to replace batteries.
	Hook Pin	Use for straps.

### Calendar Settings

1. Hold  and turn on the device at the same time.
2. When Year is blinking, change to the arbitrary number.
3. Press  to confirm the number.
4. Repeat Step 2 and 3 to set month, date, hour, and minute.

## 2-2 Accessories

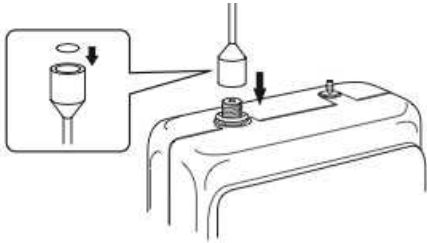
<b>Name</b>	<b>Function</b>
AC Adaptor	AC adaptor can be connected to the device during the measurement.
Air Purifying Unit	Attach the unit to Suction Nozzle for Zero-point Mode.
Activated Carbon	Exchange activated carbon when deodorizing using Air Purifying Unit is not effective.
Replacement Filter for Air purifying Unit	Replace the filter when deodorizing using Air Purifying Unit is not effective.
Replacement Filter for Suction Nozzle	Replace the filter when it gets dirt.
USB Connection Cable	Use USB Connection Cable to transfer measuring data from the device to PC.

## 3. Measurement

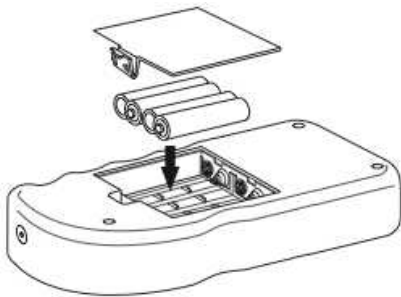
### 3-1 Real-time Sampling Mode

#### 3-1-1 Measurement Preparation

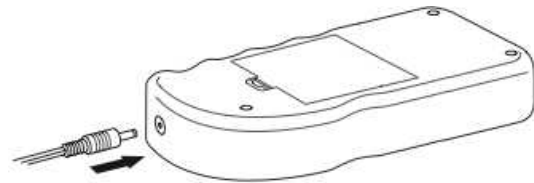
1. Place filter to Suction Nozzle.
2. Attach Suction Nozzle to the device before measurement.



3. Use AA alkaline batteries or AC Adaptor.  
Use AC adaptor for longer measurement.



or



4. Turn on the device at clean ambient.  
It takes about two minutes for the device initializing and start measuring.  
At the point when initializing is done, the device sets the point as Zero point.  
To get the zero point stable, initializing at clean ambient is recommended.  
Air Purifying Unit is used to set Zero point forcibly. (Go to 3-5)

#### 3-1-2 Measurement

1. Turn on the device and wait for about ten minutes until Ready stops blinking and initializing is done.
2. Start measuring.
3. Use OMX-TDM Data Fling Software if necessary.

#### 3-1-3 Finish Measurement

Turn off the device when the displayed value shows close to 0 .

### 3-2 Memory Sampling Mode

#### 3-2-1 Measurement Preparations

Refer to 3-1-1 on Pp11.

#### 3-2-2 Measurement

1. Press button until Calendar and Sampling Rate on LCD display starts blinking.
2. Select Sampling Rate by pressing.
3. Press to finish selecting Sampling Rate.
4. Press, and to finish Memory Sampling measurement and save measuring data.



#### 3-2-3 No Memory Space



Memory overflow occurs when the internal memory is full.

If there is no space remained, Calendar on LCD display starts blinking, and Data No. becomes 0.

To delete saved memory in the device, press Sampling and Zero/Stop at the same time while the device is off and turn on the device while the two buttons are held.

\*Saved memory in the device will not be deleted automatically when it is transferred to PC.

### 3-3 Peak-hold Function

Press Range Peak-hold button for over three seconds during Real-time Sampling. By this function, the highest value would be keeping displayed until the values are exceeded other highest values.

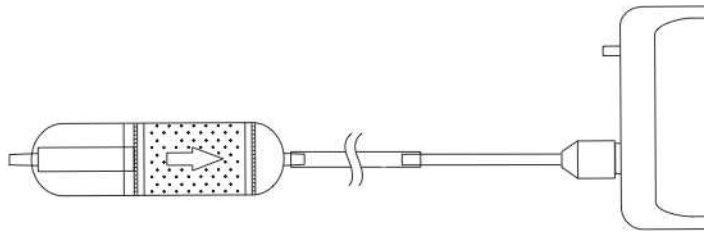
Press Range Peak-hold button for over three seconds again to cancel the function.

\*This function will not be shown on the saved data.

### 3-4 Zero-point Function

After the two-minute initializing, the device will display the value 0 regardless of the measurement environment.

If you would like to set measuring values to 0 forcibly or measure values more accurate, connect Air Purifying Unit as shown in below.



1. Press Zero/Stop button until Calendar on LCD display starts blinking.
2. Press Enter until Calendar on LCD display stops blinking.
3. Press Zero/Stop button again after 1. If you would cancel operating Zero-point Function.

\*If you proceed Zero-point Function at where the air is polluted, the displayed value shows 0 at clean air environment.

## 4. How to Use Data Filing Software

### 4-1 How to Download Software

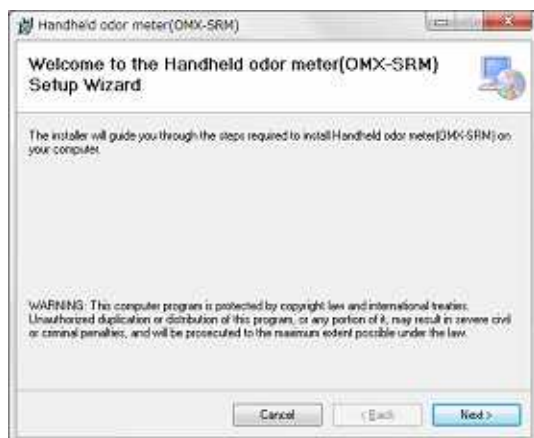
Software is used to transfer data from the device to PC by using USB Connection Cable.

1. Enter the following URL and go to:  
<http://www.odormonitor.com/download.html>

2. Enter personal information for product registration.

### 4-2 How to Install Software

1. Open SetupTDM\_jp.msi .  
\*Install software under Windows TDMministrative privileges.



2. Installation starts with below window. Click Next .



3. Check Agree after reading terms and conditions of Software License Agreement. Click Next .



4. Select the place where you would like to install the software.  
Click Next .



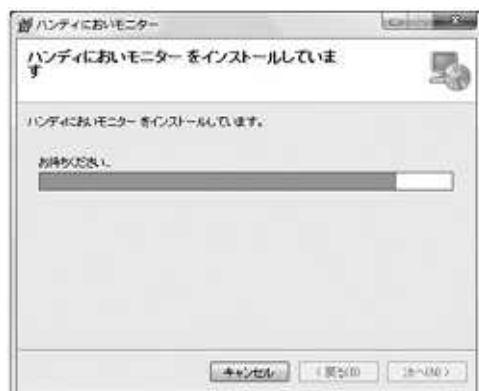
5. Click Next .



6. If below window appeared, click Yes to continue installation.



7. Click Cancel if needed.



8. Installation procedure will be completed by clicking Close.





## ❖ How to Install USB Drivers Software

Install USB Drivers Software before connecting USB cable to PC.

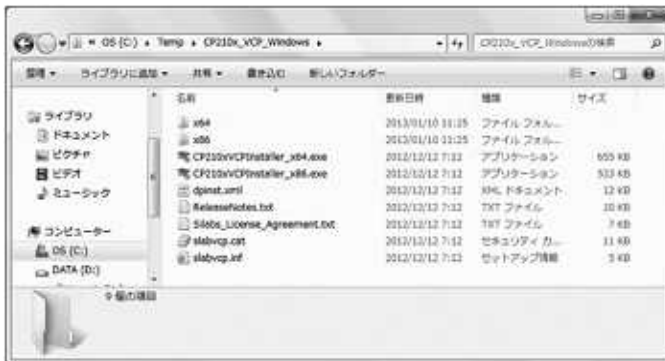
To download the latest version, enter the following URL and go to:

<http://www.silabs.com/product/mcs/Pages/USBtoUARTBridgeVCPDrivers.aspx>

1. Decompress CP210x\_VCP\_Windows.zip in selected folder.



2. Open the decompressed file.



3. If PC's CPU is 32bit, click CP210xVCPInstaller\_x86.exe .  
If 64bit, click CP210xVCPInstaller\_x64.exe .  
\*Warning message will appear if incorrect file is clicked.



4. Click Next .



5. Confirm License Agreement, the check I accept this agreement . Click Next .



6. Installation procedure will be completed by clicking Done .



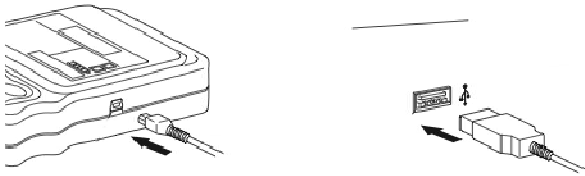
## Reference

After installation of USB Drivers software, Device Manager will display Silicon Labs CP210x USB to UART Bridge (COM). Assign COM number will be displayed.



### 4-3 Preparation

Connect the device to PC by USB connection cable.

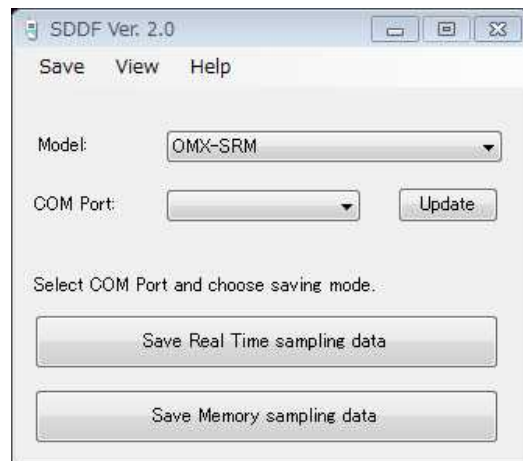


### 5-4 How to Open Software

1. Double-click shortcut icon on desktop.
2. Or, go to Start > All Programs > SHINYEI Technology > Handheld Odor Meter (OMX-TDM).



3. Main Screen will appear.



4. Read Handheld Odor Meter Data Filing Software Manual for detailed operation procedure.

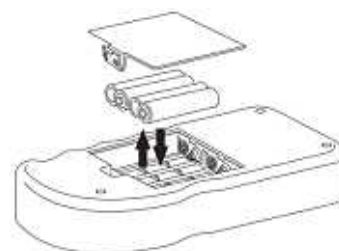
## 5. Specification

Detection Method	Semiconductor Gas Sensor
Object Gas	TVOC
Sampling Method	Continuous Sampling with Built-in Pump
Detection Range	0 to 9999 $\mu\text{g}/\text{m}^3$ in Toluene Concentration
Display	Digital LCD Display 0 to 9999
Response Time	Response Time at 90%: Toluene: 500 $\mu\text{g}/\text{m}^3$ within 40 seconds Toluene: 1500 $\mu\text{g}/\text{m}^3$ within 60 seconds Toluene: 6000 $\mu\text{g}/\text{m}^3$ within 60 seconds
Power Source	Two AA Size Alkaline Batteries or AC Adaptor *Battery life for continuous measurements approx. 7 hours.
Consumed Power	Approx. 1100mW with AA Size Alkaline Batteries
Storage Temperature Range	0 to 40°C
Dimensions	W74 x L167.5 x D35
Memory	Up to 32,732 Data, Up to 511 files

## 6. Maintenance and Servicing

### 6-1 Replacement of 'AA' Size Alkaline Batteries

When Battery status on LCD Display becomes Low , replace AA size alkaline batteries as follows;



### 6-2 Replacement of Button Battery

The unit uses a button battery (model: CR2032) for memory back up.

When to replace:

- Approx. five years after the purchase
- When Calendar or Time on LCD is not displayed correctly.

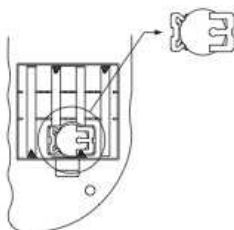
Follow the procedure below:

1. Switch power OFF, remove AA batteries and disconnect the AC adaptor.



2. Strongly push the round part of the battery holder until the left part of the battery moves up, and take out the battery.

\*Do not use metal tools like screwdrivers, or easily broken tools like pencils.



3. Insert the new battery on a slant and slowly.



### 6-3 Maintenance of Air Purifying Unit

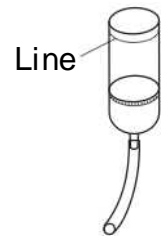
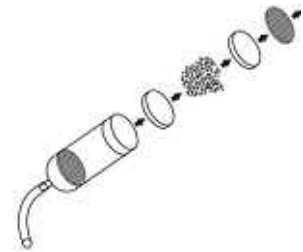
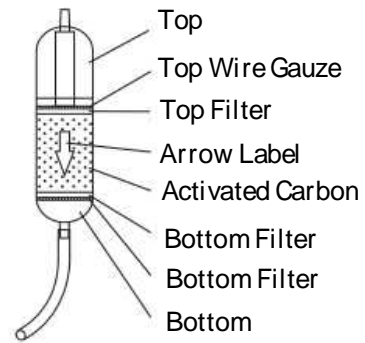
It is recommended to replace activated carbon and filters in Air Purifying Unit to prevent gases absorbed in the unit.

Follow the procedure below:

1. Twist the unit to open.

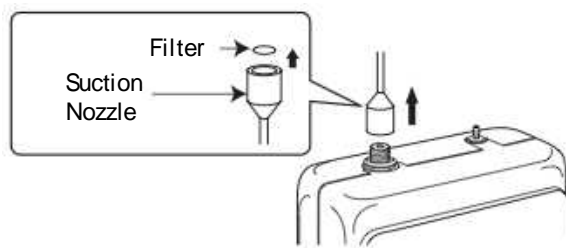


2. Take out top wire gauze, top filter, activated carbon, and bottom filter.  
\*Do not take out bottom wire gauze.
3. Replace bottom filter and activated carbon by the line.  
\*Do not exceed line when replace activated carbon.
4. Replace top filter and top wire gauze.



### 6-4 Replacement of Filter for Suction Nozzle

Twist Suction Nozzle and replace filter if necessary.



## 6-5 Troubleshooting

<b>If you find:</b>	<b>Check:</b>
OMX-TDM does not operate.	Check the battery status or connect unit to AC adaptor.
Unit will not operate after battery replacement.	Check the battery polarity.
The displayed value does not change.	Close measurement object to the unit. Gases are absorbed in unit. Connect Air Purifying Unit to clean the air in unit.
The displayed value on LCD display keeps blinking.	Odor concentration is too high and overflowed. Change displayed range.
- Time on LCD display keeps blinking. - Sampling button cannot be operated. - Data No. becomes 0 .	Memory is overflowed. Delete data.
Data cannot be saved.	Memory is overflowed. Delete data.
Message SErr is displayed on LCD.	Sensor malfunction. Contact us if the message keeps being displayed.
Message PErr is displayed on LCD.	Built-in air pump malfunction. Contact us if the message keeps being displayed.