Handheld Odor Meter
OMX-SRM

Operation Manual

SHINYEI TECHNOLOGY

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1. Introduction
1-1 Supplied Component List

Handheld Odor Meter OMX-SRM 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:

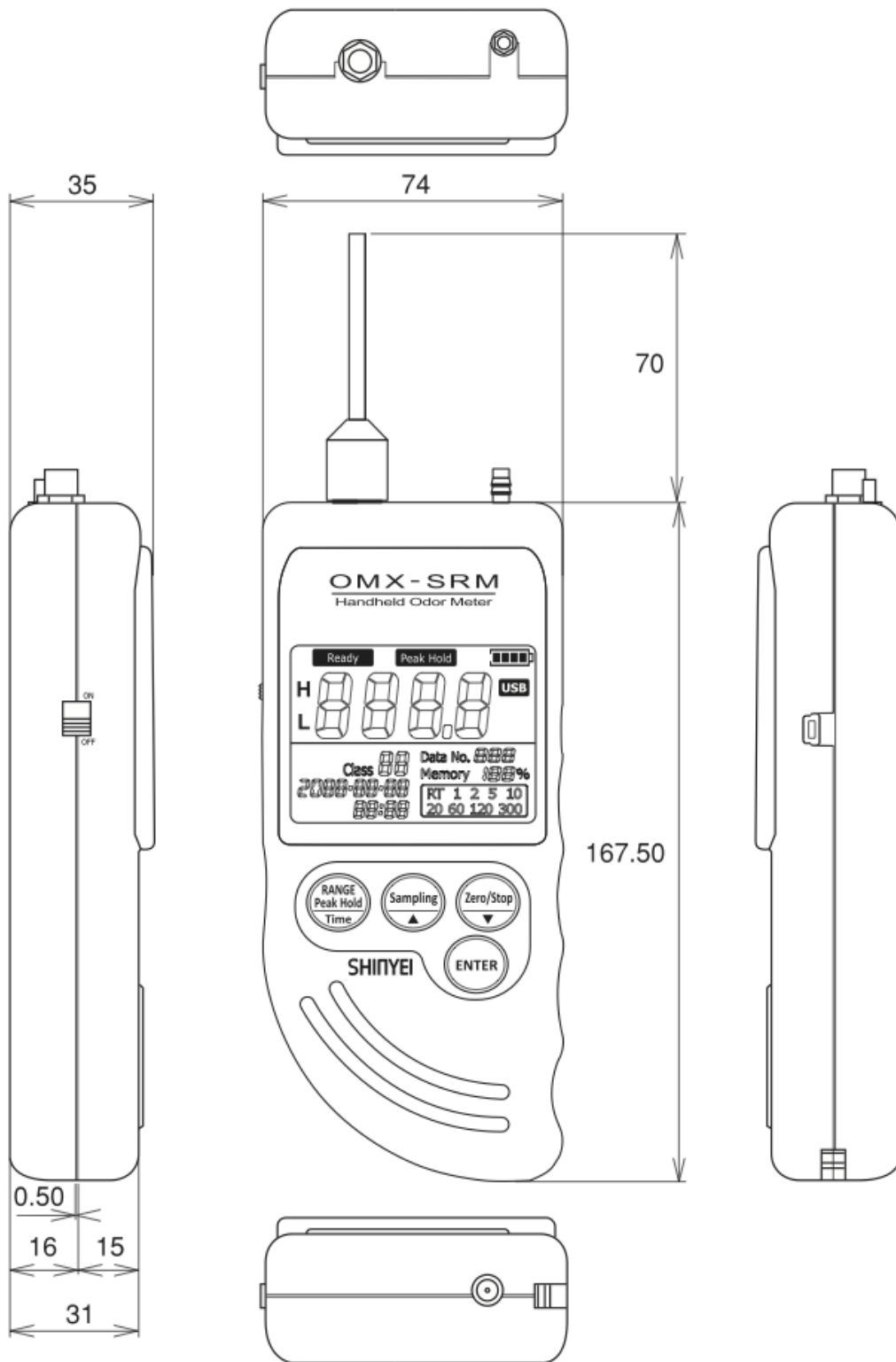|	
OMX-SRM Base Unit	1
Suction Nozzle	1
AC Adaptor	1
'AA' Alkaline Battery	4
USB Connection Cable	1
Air Purifying Unit	1
Activated Carbon (50cc/bag)	1
Replacement Filter for Air Purifying Unit	4
Replacement Filter for Suction Nozzle	5
Operation Manual	1

1-2 Warning

WARNING
- Do not use any adaptors except supplied AC Adaptor.   - 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.   - Do not dismantle the base unit.

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 ⁰C. (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 indicate the relative strength and odor classification 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.

Odor Strength

Simply turn on the device and start measuring.
Real-time relative odor strength level can be measured continuously.

Odor Classification

A pair of semiconductor gas sensors provides odor classification.

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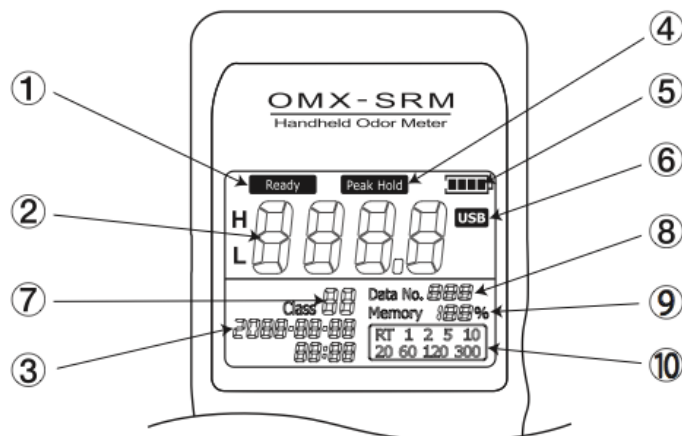Or, it also can transfer saved measuring data from the device to PC and draw illustrated graph automatically.

To download OMX-SRM data filing software, enter the following URL and go to:
http://www.odormonitor.com/download.html
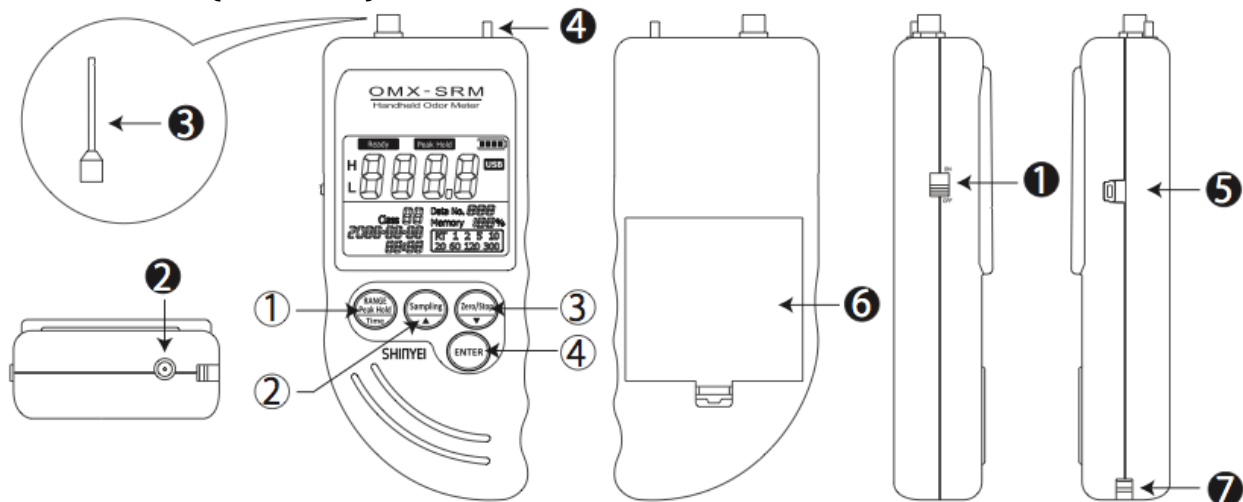
2-1 Instrument Features
2-1-1 LCD Display

No.	Name	Function
①	Ready	After turning, it will be blinking for about two minutes for initializing. Start measuring after 'Ready' stops blinking.
②	Odor Strength Level	Select displayed range High Range Mode or Low Range Mode. High Range Mode displays odor strength level from 0.0 to 99.9. Low Range Mode displays odor strength level from 0 to 999. When the level is overflowed, it will be blinking.
③	Calendar Function	Upper: Year-Month-Date Lower: Hour-Time
④	Peak Hold	Maximum strength level can be retained.
⑤	Battery Status	■■■■ Full ■■■□ Good – Measurable for 3 to 4 hours. ■■□□ Moderate – Measurable for 1 to 2 hours. ■□□□ Low – Change battery. □□□□ No Battery
⑥	USB	USB Cable is connected.
⑦	Classification	Odor tendency is displayed from 0 to 90. '- - ' is displayed if odor tendency cannot be measured.
⑧	Data No.	Number of stored data is shown.
⑨	Memory	Remaining memory capacity is displayed from 0 to 100%.
⑩	Sampling Rate	Select sampling rate: RT (*), 1, 2, 5, 10, 20, 60, 120, or 300 seconds.

Real-time Sampling (*) – Odor Strength Level and Classification are displayed per a second continuously.

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

2-1-2 Base Unit (OMX-SRM)

No.	Name	Function
①	RANGE Peak Hold Time	-Hold three seconds for Peak-hold Function. -Hold and turn on the device at the same time to set Calendar.
②	Sampling ▲	-Select Sampling rate. -Set Calendar.
③	Zero/Stop ▼	-Use for Zero-point Mode. -Set Calendar.
④	ENTER	Confirm Sampling Rate and/or Zero-point Mode.
❶	Power Switch	Turn on and off the device.
❷	AC Adaptor Port	AC Adaptor is connected to the port.
❸	Suction Nozzle	Nozzle to take sampling air and/or object gases.
❹	Exhaust Nozzle	Sampling air and/or object gases are exhausted.
❺	USB Port	USB attached USB cable to connect the device to PC.
❻	Battery Box	Open or close to replace batteries.
❼	Hook Pin	Use for straps.

Calendar Settings

1. Hold (RANGE Peak Hold Time) and turn on the device at the same time.

2. When 'Year' is blinking, change to the arbitrary number.

3. Press (ENTER) to confirm the number.

4. Repeat Step 2 and 3 to set month, date, hour, and minute.
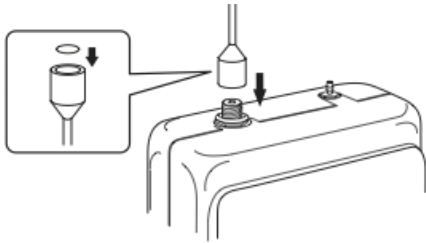
2-2 Accessories

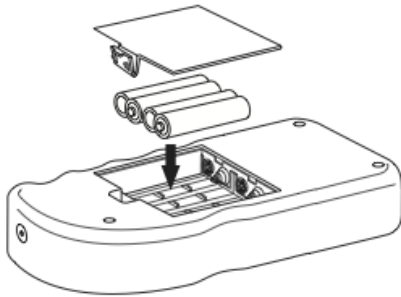| Name	Function
AC Adaptor	AC adaptor can be connected to the device during the measurement.
Air Purifying Unit	Attach the unit to Suction Nozzle for Zero-point Mode.
Activated Carbon	Exchange activated carbon when deodorizing using Air Purifying Unit is not effective.
Replacement Filter for Air purifying 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
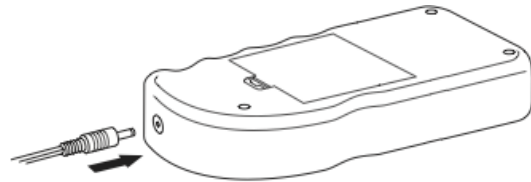## 3-1-1 Measurement Preparation

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.

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 two minutes until 'Ready' stops blinking and initializing is done.

2. Start measuring.

3. Use OMX-SRM Data Fling Software if necessary.

3-1-3 Finish Measurement
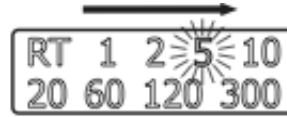
Turn off the devise when Odor Strength Level shows close to '0'.

3-2 Memory Sampling Mode
3-2-1 Measurement Preparations

Refer to 3-1-1 on Pp11.

3-2-2 Measurement

1. Press (Sampling ▲) until Calendar and Sampling Rate on LCD display starts blinking.

2. Select Sampling Rate by pressing.

3. Press (ENTER) to finish selecting Sampling Rate.

4. Press (Sampling ▲) (one time) and (Zero/Stop ▼) (twice) 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.

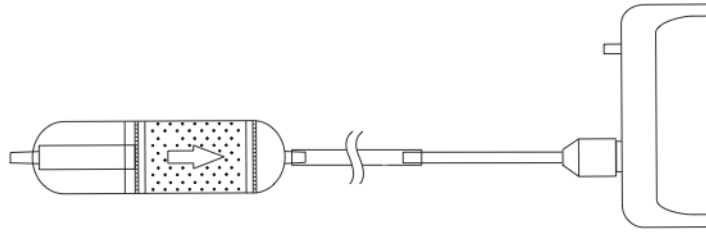## 3-3 Peak-hold Function

Press ⊙(RANGE / Peak Hold / Time) for over <u>three seconds</u> during Real-time Sampling.
By this function, the highest value of Odor Strength level and Odor Classification value would be keeping displayed until the values are exceeded other highest values.

Press ⊙(RANGE / Peak Hold / Time) for over <u>three seconds</u> 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 Odor Strength level and Odor Classification 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 ▼) until Calendar on LCD display starts blinking.

2. Press ⊙(ENTER) to proceed, or press ⊙(Zero/Stop ▼) to cancel.

*If you proceed Zero-point Function at where the air is polluted, Odor Strength level shows '0' and Odor Classification value shows '--' at clean air environment.
*Zero-pint function cannot be performed in memory sampling mode.

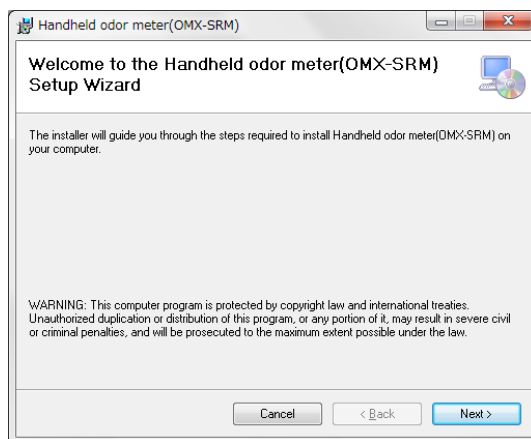# 4. How to Use Data Filing Software
4-1 How to Download Software

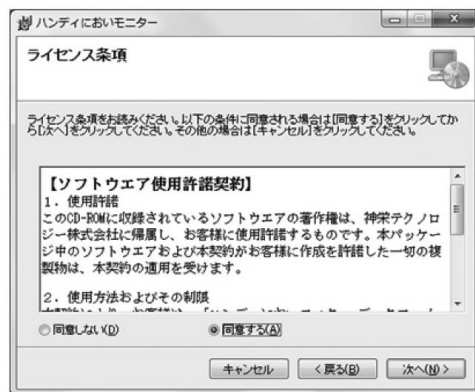Software is used to transfer data from the device to PC by using USB Connection Cable.

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

2. Enter personal information for product registration.
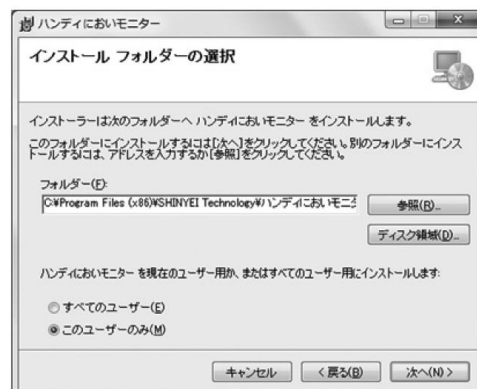
4-2 How to Install Software

1. Open 'SetupSRM_jp.msi'.
   *Install software under Windows administrative 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'.
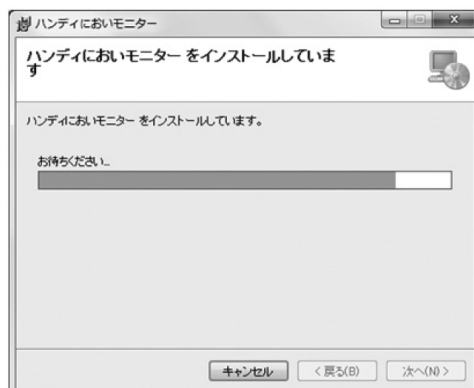

5. Click 'Next'.

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

7. Click 'Cancel' if needed.

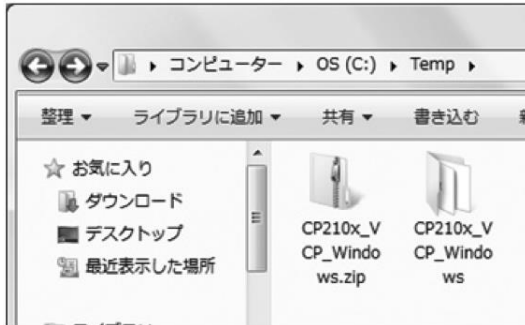8. Installation procedure will be completed by clicking 'Close.'

❖ **How to Install USB Drivers Software**

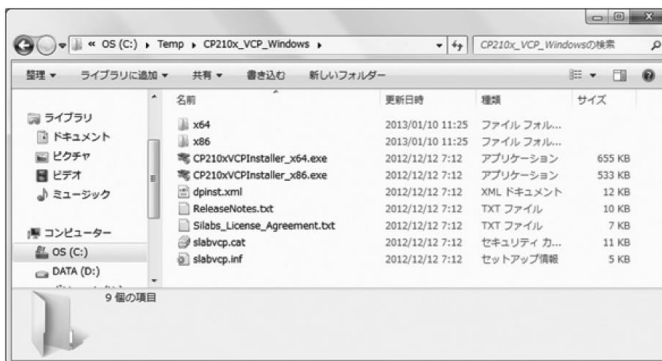Install USB Drivers Software before connecting USB cable to PC.

To download the latest version, enter the following URL and go to:
http://www.silabs.com/products/mcu/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 'CP210xVCPInstaler_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'.
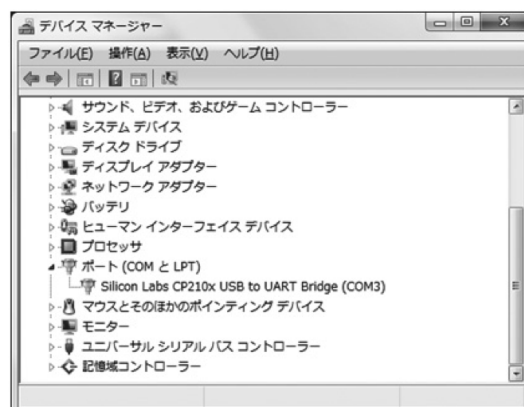   Click 'Next'.

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

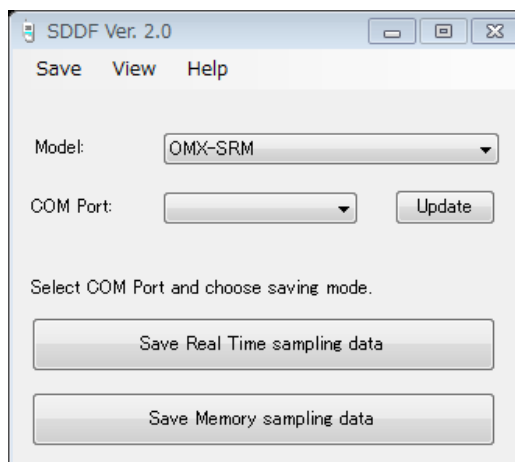Connect the device to PC by USB connection cable.

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-SRM).

3. Main Screen will appear.

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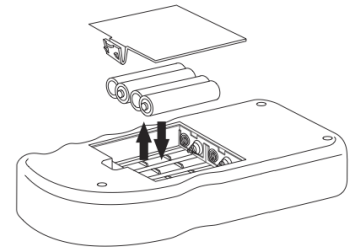
5. Specification

Detection Method	Two Semiconductor Gas Sensors
Object Gas	Ethanol, Acetone, Hydrogen, etc.
Sampling Method	Continuous Sampling with Built-in Pump
Detection Range	0.1 ppm to 200ppm (with Ethanol Concentration)
Display	Digital LCD Display Odor Strength Level (Low range:0.0-99.9,High range:0-999) Odor Classification (0-90)
Response Time	Response Time at 90%: Ethanol: 100ppm in 20 seconds Methyl Mercaptan: 0.16ppm in 50 seconds Xylene: 46ppm in 50 seconds
Power Source	4 'AA' Size Alkaline Batteries or AC Adaptor *Battery life for continuous measurement s approx. 7 hours.
Consumed Power	Approx. 1100mW with 'AA' Size Alkaline Batteries
Operating Temperature Range	0 to 40 degree in C (No dew condensation)
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;
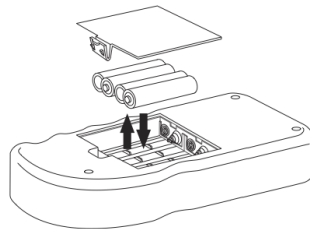

6-2 Replacement of Button Battery

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

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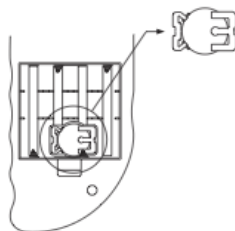- When Calendar or Time on LCD is not displayed correctly.

Follow the procedure below:

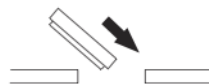1. Switch power OFF, remove 'AA' batteries and disconnect the AC adaptor.

2. Strongly push the round part if 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.

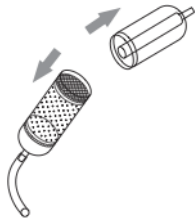3. Insert the new battery on a slant and slowly.
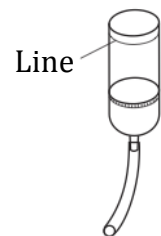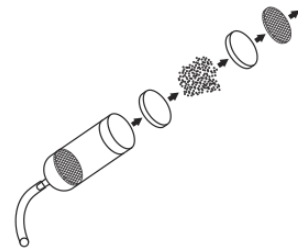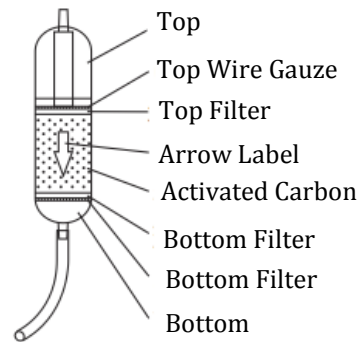
6-3 Maintenance of Air Purifying Unit

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

Top
Top Wire Gauze
Top Filter
Arrow Label
Activated Carbon
Bottom Filter
Bottom Filter
Bottom

Follow the procedure below:

1. Twist the unit to open.

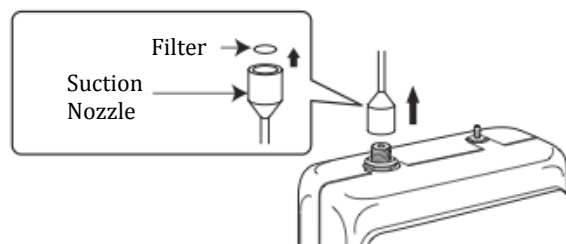2. Take out top wire gauze, top filter, activated carbon, and bottom filter.
   *Do not take out bottom wire gauze.

3. Replace bottom filter and activated carbon by the line.
   *Do not exceed line when replace activated carbon.

Line

4. Replace top filter and top wire gauze.

6-4 Replacement of Filter for Suction Nozzle

Twist Suction Nozzle and replace filer if necessary.

Filter
Suction Nozzle

6-5 Troubleshooting

If you find:	Check:
OMX-SRM does not operate.	Check the battery status or connect unit to AC adaptor.
Unit will not operate after battery replacement.	Check the battery polarity.
Odor strength Level does not change.	Get the unit closer to object.
	Gases are absorbed in unit. Connect Air Purifying Unit to clean the air in unit.
	Clean nozzle with alcohol and make sure to dry it up.
Odor strength level 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.

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