



KANOMAX
The Ultimate Measurements

Digital Dust Monitor

Model 3444

Software for Windows

Instruction manual

Table of contents

Capter 1	Overview	1
Capter 2	Software setup.....	2
Capter 3	How to use the software	11
3.1	Software startup (main screen).....	11
3.2	Measurement settings.....	13
3.3	Save folder settings	14
3.4	Graph settings Setting graph	16
3.4.1	For relative density setting	17
3.4.2	For mass concentration setting	18
3.4.3	Switching graphs after measurement	19
3.5	Relative concentration measurement	21
3.6	Mass concentration measurement	24
3.7	Saving measurement data	27
3.8	Application termination	28
3.9	Device settings.....	29
3.9.1	Calculation settings	30
3.9.2	Main unit time setting.....	31
3.9.3	K value setting.....	32
3.10	Check version information	33
3.11	Read main unit data	34
Capter 4	File save format	36
4.1	Files.....	36
4.2	Software measurement data file.....	36
4.3	Main unit measurement data file	36
Capter 5	Alarm condition	37
5.1	TWA alarm	37
5.2	C alarm	38
5.3	STEL alarm.....	39
Capter 6	Contact Information.....	40

Chapter 1 Overview

This instruction manual describes the light scattering type digital dust monitor Model3444 software (hereinafter referred to as "this software").

1) Operating environment

OS	Microsoft Windows 10、Windows 11
言語	Japanese English
Interface	USB serial

Capter 2 Software setup

- 1) Please close other programs before setting up the software.

Insert the software CD-ROM into your PC's CD drive and double-click the setup file



Figure 2-1 shows:

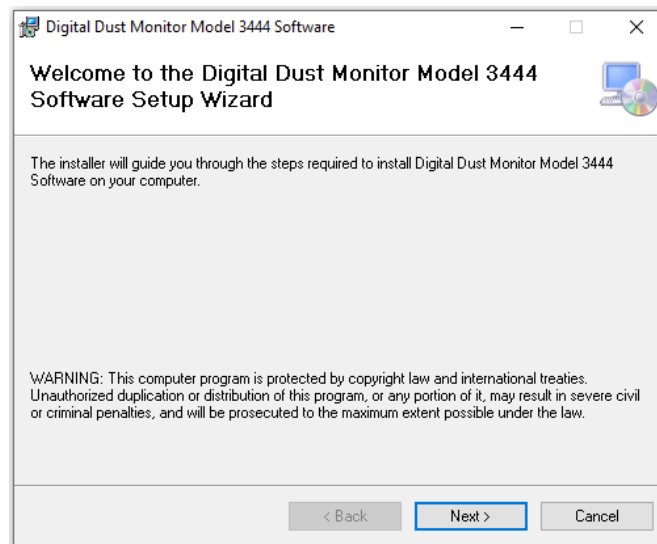


Figure 2-1 Initial setup screen

- 2) Click Next (N) to display Figure 2-2. The standard installation destination is C drive, but "Reference (R)"

Click to change the installation drive or folder:

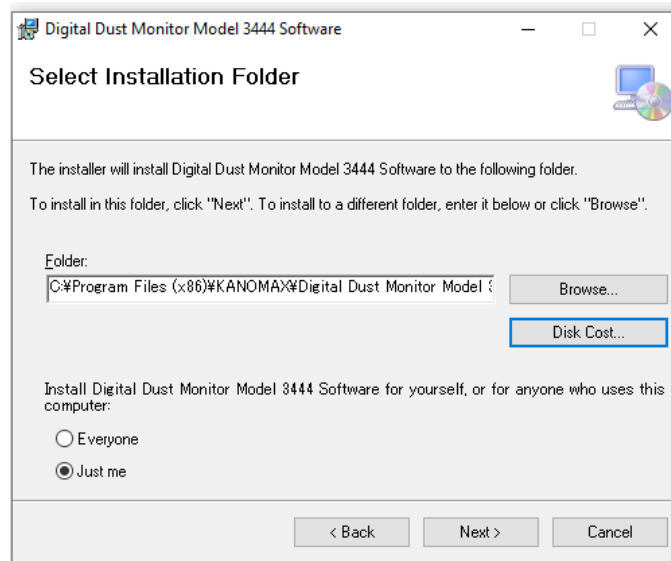


Figure 2-2 Installation folder selection screen

3) Click Next to see Figure 2-3:

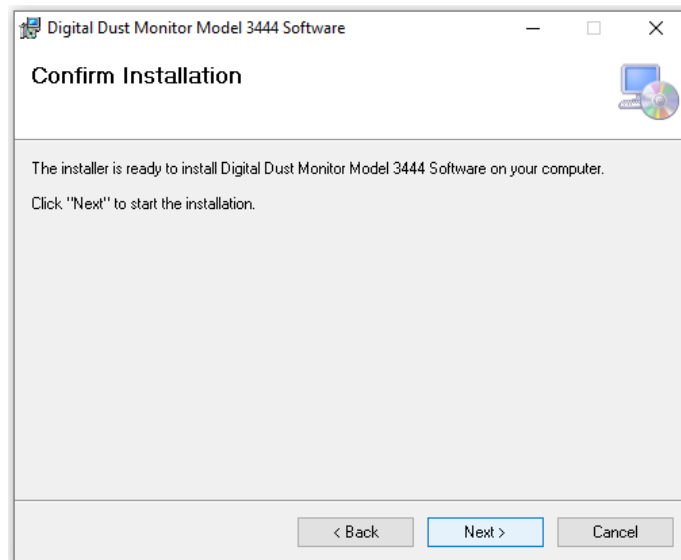


Figure 2-3 Installation confirmation screen

4) Click Next to start the installation:

5) When the installation is complete, you will see Figure 2-4:

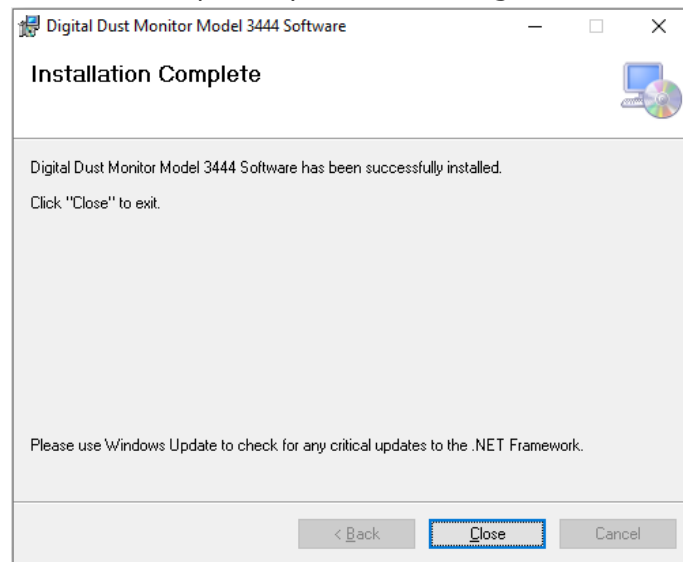


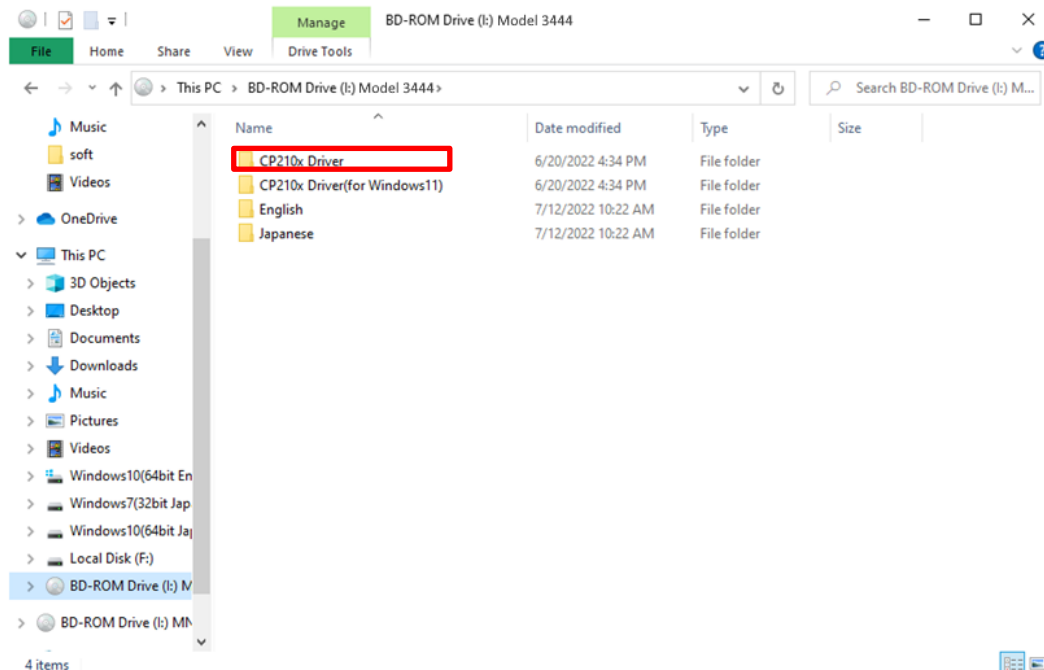
Figure 2-4 Installation completion screen

6) Click the Close (C) button to finish the setup.

7) Then install the USB driver.

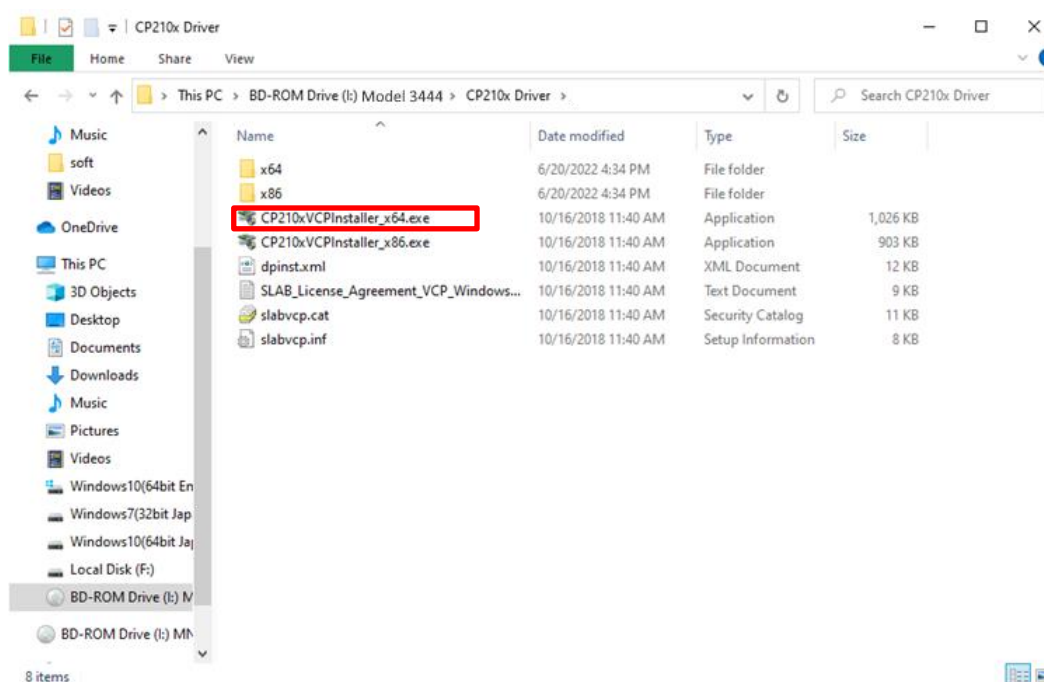
[If your PC is Windows 10]

7-1) Double-click the "CP210x Driver" folder on the CD-ROM.

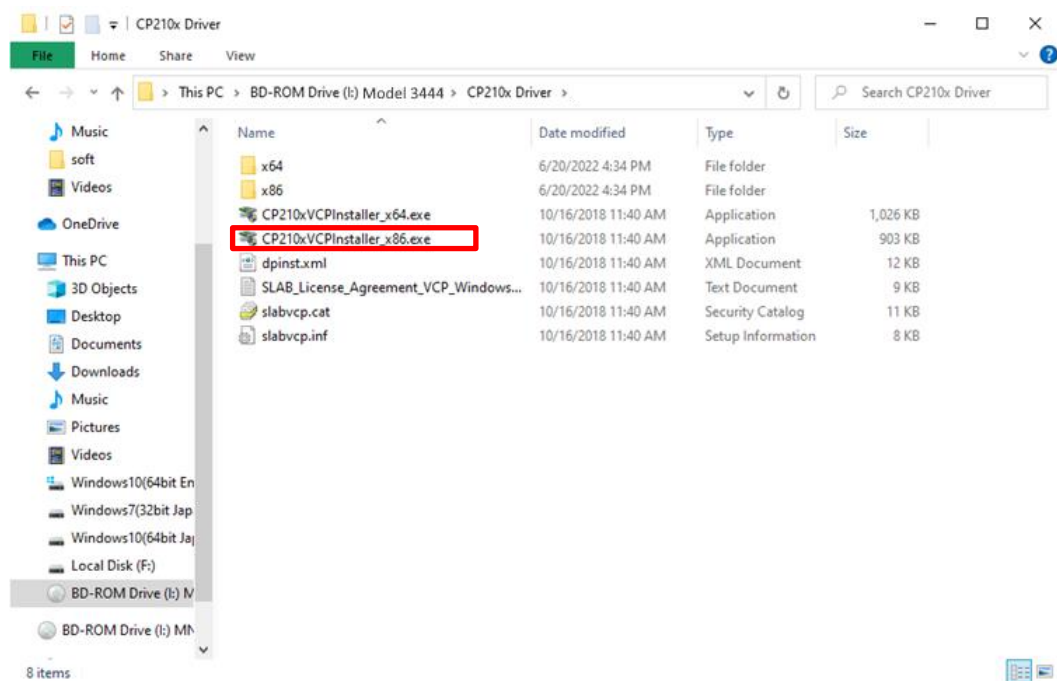


7-2) If your PC is 64-bit Windows 10, use "CP210xVCPInstaller_x64.exe"
For 32bit windows 10, double-click "CP210xVCPInstaller_x86.exe".

[When the PC is 64bit Windows 10]



[When the PC is 32bit Windows 10]



7-3) Figure 2-5 will be displayed. Click Next (N).

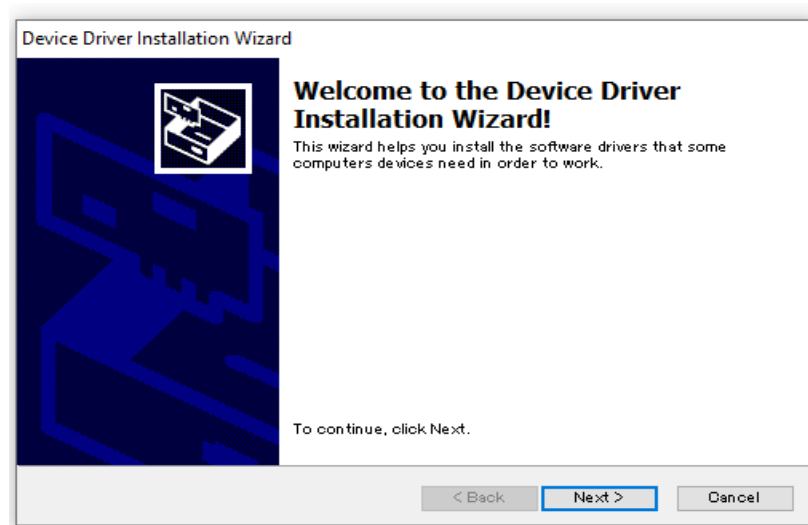


Figure 2-5 Installation start screen

7-4) The installation will start. When finished, Figure 2-6 will be displayed.
Click Finish to close.

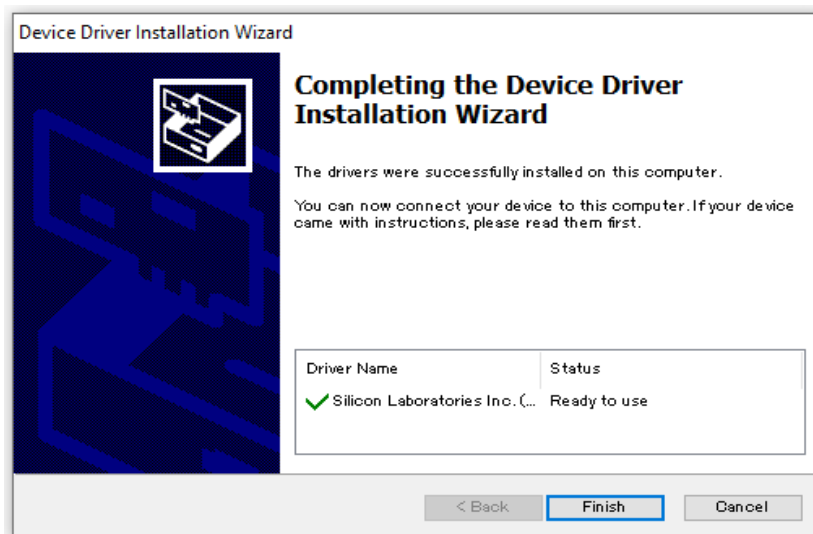
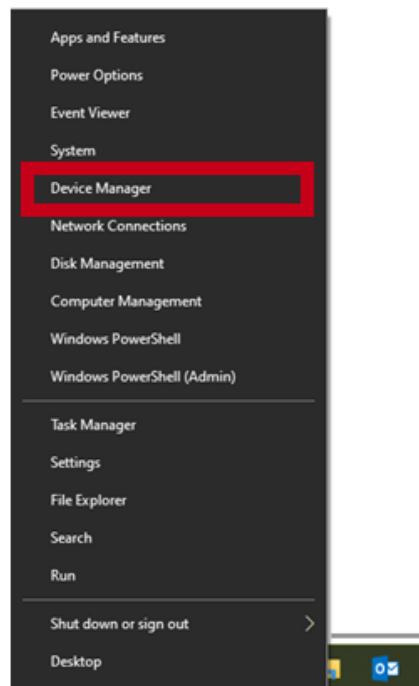


Figure 2-6 Installation completion screen

[If your PC is Windows 11]

7-5) Connect the main unit to the PC with a USB cable.
Right-click the Start menu and click Device Manager-(M).



7-6) Figure 2-7 is displayed.

"CP2102N USB to UART Bridge Controller" has been added to "Other Devices" in Device Manager.

Make sure it is displayed.

If it is not displayed, check that the main unit and the computer are connected with a USB cable.

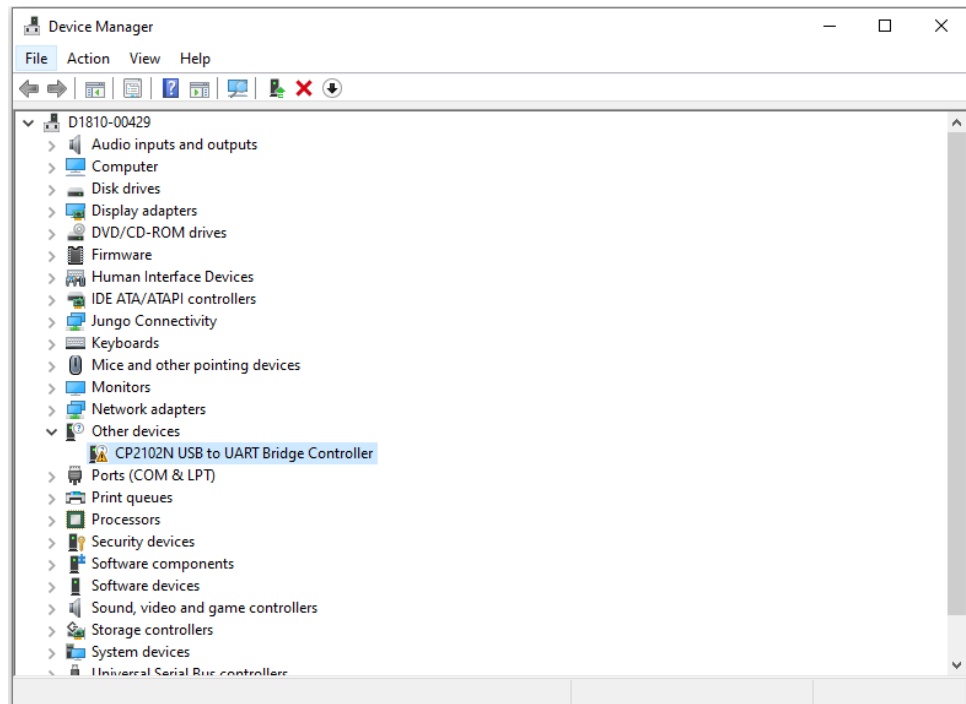
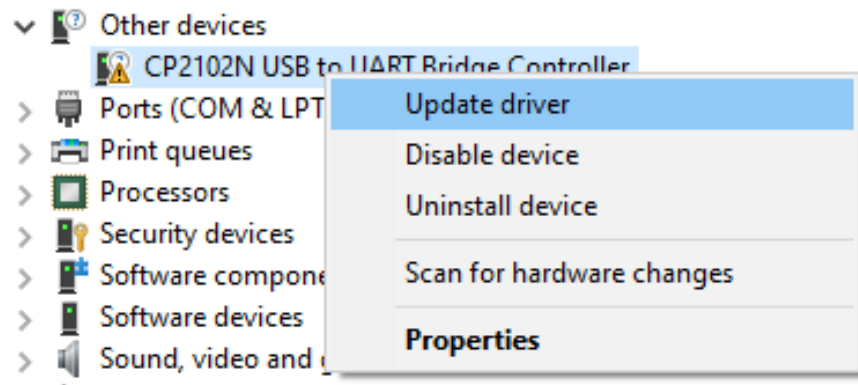


Figure 2-7 Device manager screen

7-7) Right-click CP2102N USB to UART Bridge Controller under Other Devices. Click Update Driver (P) from the displayed menu.



7-8) When Figure 2-8 is displayed, click "Browse my computer for a driver".

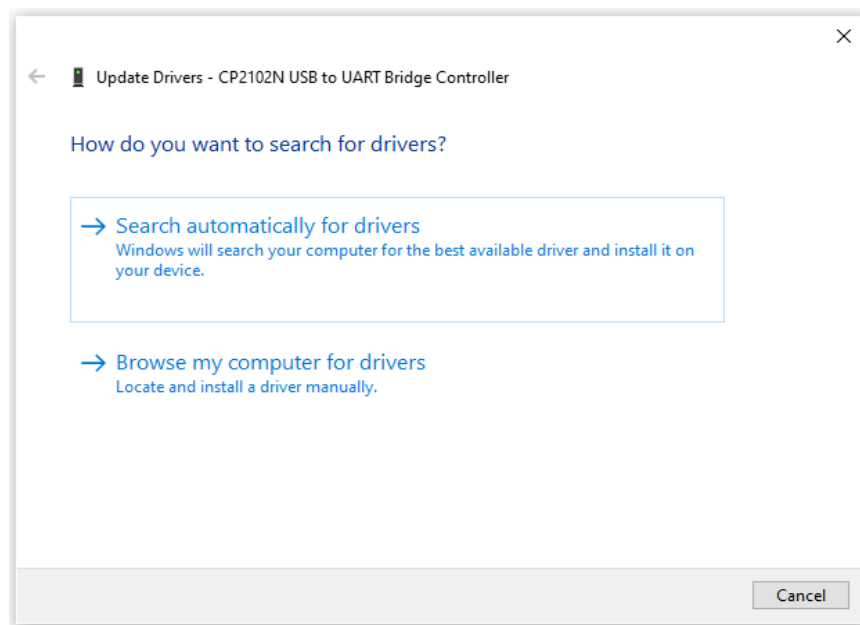


Figure 2-8 Driver update screen (1)

7-9) As shown in Figure 2-9, enter the drive name of the CD-ROM in "Search for a driver in the following location:". Enter or select from "Reference (R) ..." (Fig. 2-10). Click Next.

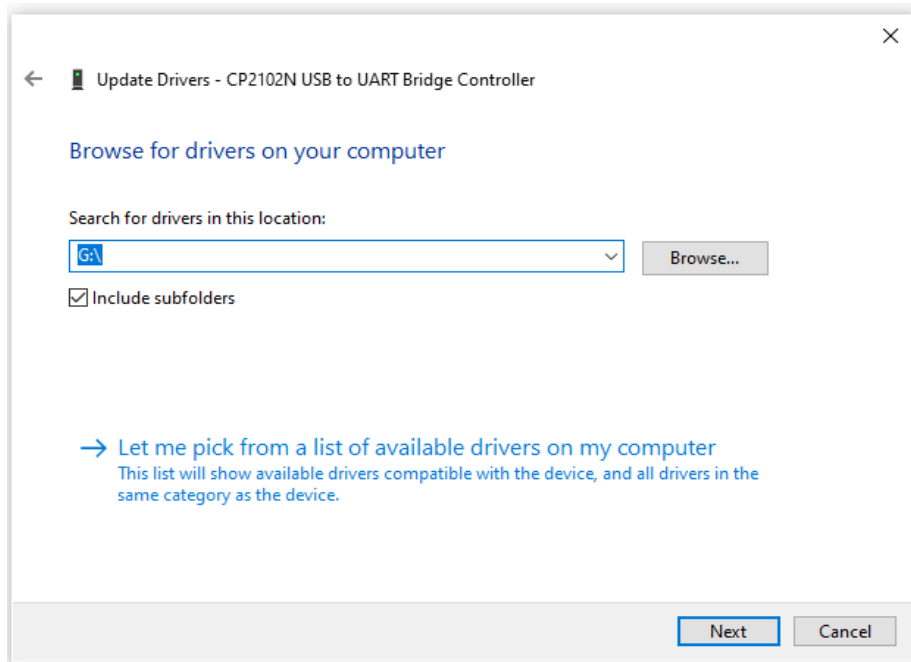


Figure 2-9 Driver update screen (2)

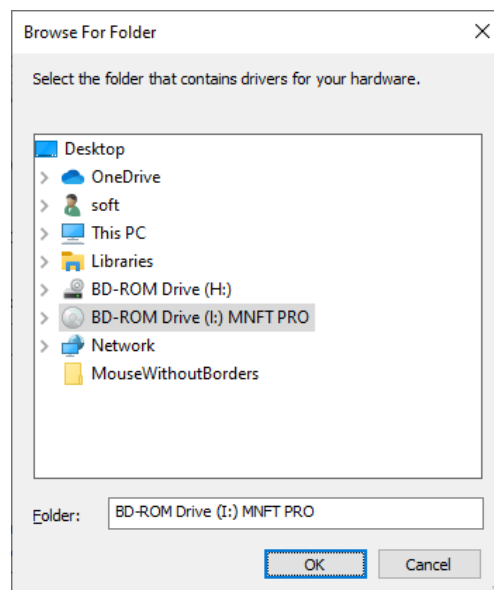


Figure 2-10 Folder reference screen

7-10) The installation will start. When finished, Figure 2-11 is displayed. Click Close (C) to close it.

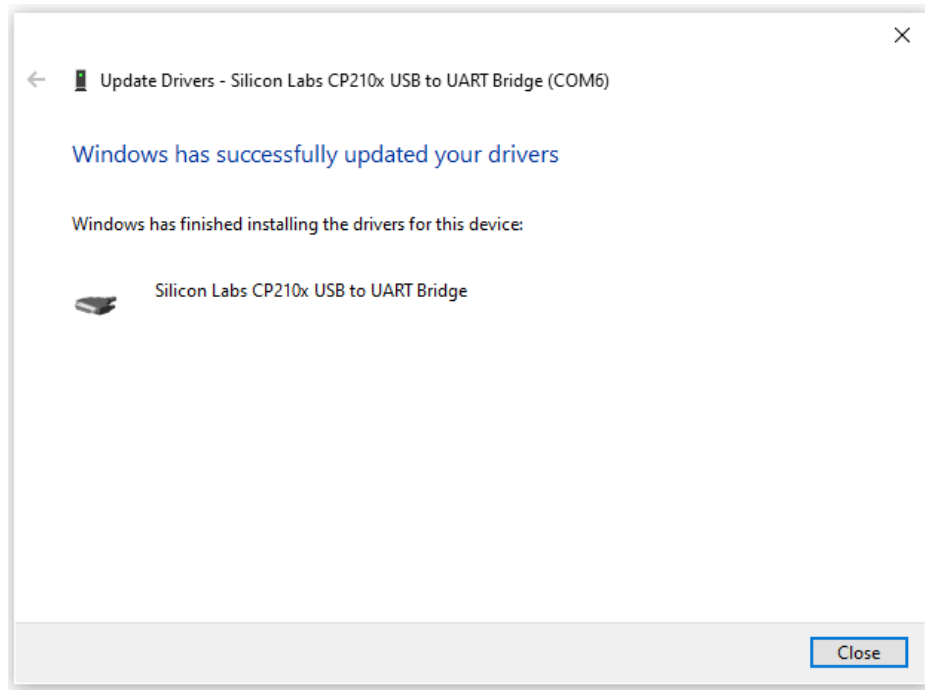
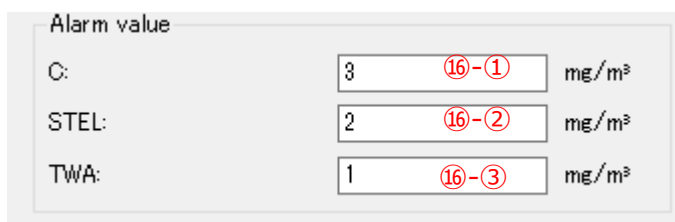
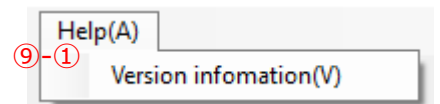
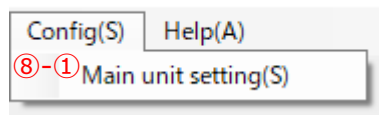
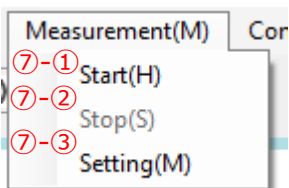
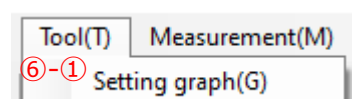
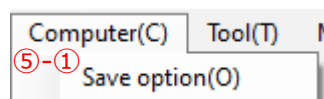
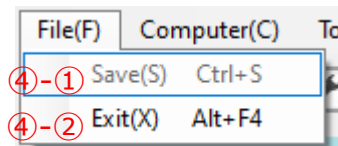
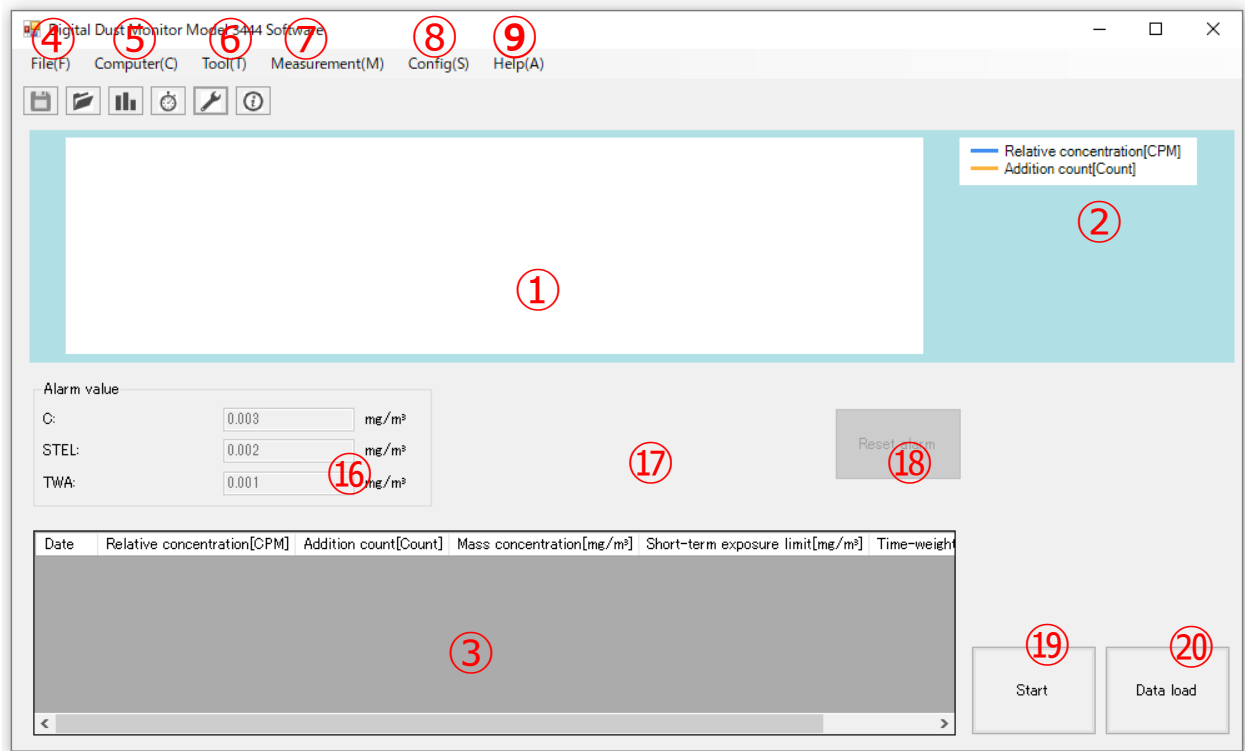


Figure 2-11 Driver update screen (3)

Capter 3 How to use the software

3.1 Software startup (main screen)

Start "Digital Dust monitor Model 3444 Software" from the Start menu.



①	Graph	A line graph is displayed based on the measurement data.
②	Usage Guide	Display the legend according to ⑥-①.
③	Data table	Displays the measurement results in numerical values.
④	File	Display save and exit menu.
④-①	Save	Save the measurement data.
④-②	Exit	Quit the application.
⑤	Computer	Displays the save folder setting menu.
⑤-①	Save option	Set the folder to save data.
⑥	Tool	Display the graph setting menu.
⑥-①	Graph settings	Set the display items for the graph in ①
⑦	Measurement	Displays the measurement start, measurement end, and setting menus.
⑦-①	Start	Start measurement.
⑦-②	Stop	Finish the measurement.
⑦-③	setting	Make measurement settings.
⑧	Config	Display the main unit setting menu.
⑧-①	Main unit setting	Set the calculation, body date, and K value.
⑨	Help	Display the version information menu.
⑨-①	Version information	Display version information.
⑩	Save icon	Saves the measurement data of the main unit.
⑪	Save option icon	Set the folder to save data.
⑫	Graph setting icon	Set the display items for the graph in ①
⑬	Measurement settings icon	Make measurement settings.
⑭	Main unit setting icon	Set the calculation, body date, and K value.
⑮	Information icon	Display version information.
⑯	Alarm value	Set the threshold for generating an alarm.
⑯-①	Upper limit (C)	It can be set from 10 to STEL value. The initial value is 3.
⑯-②	Short-term exposure limit (STEL)	It is possible to set from C value to TWA value. The initial value is 2.
⑯-③	Time Weighted Average (TWA)	The STEL value can be set from 0.001. The initial value is 1.
⑰	alarm	It is displayed when the measurement result exceeds the allowable amount of ⑯ 
⑱	reset button	Reset the alarm in ⑯
⑲	Measurement start button/ Measurement Stop button	Start measurement. When the measurement starts, it becomes the measurement stop button. When the measurement is completed, it becomes the measurement start button.
⑳	Data read button	Reads and saves the measurement data of the main unit.

3.2 Measurement settings

Click ⑦-③.

①	No.Trial(N)	1～65535 回まで入力が可能です。 初期値は 1000 です。
②	Sampling times(minutes)	00～99 分まで入力が可能です。 初期値は 00 です。
③	Sampling times(seconds)	00～59 秒まで入力が可能です。 初期値は 01 です。
④	Total measurement time	The total time is automatically calculated from the number of measurements x sampling time and displayed.
⑤	OK button	Save your settings.
⑥	Cancel button	Cancels configuration changes.

*If the number of measurements entered exceeds the maximum number, it will automatically switch to the maximum number.

*If the number of measurements entered is less than the minimum number, it will automatically switch to the minimum number.

* If the measurement interval is set to 0 minutes and 0 seconds, it automatically switches to 0 minutes and 1 second.

How to change settings

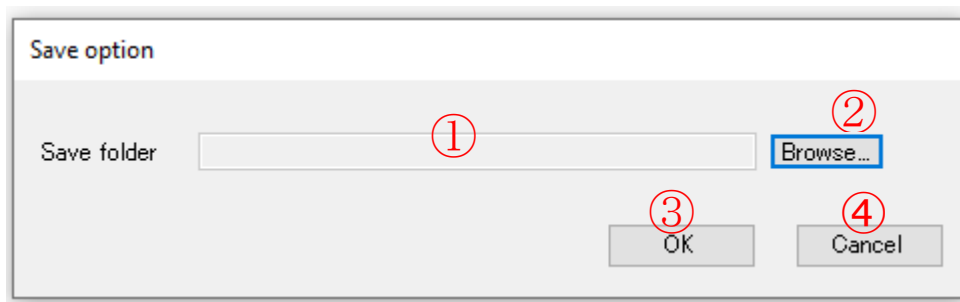
[For 100 times 1 minute 1 second]

Enter 100 for the number of measurements, 1 for the measurement interval (minutes), and 1 for the measurement interval (seconds), and press the OK button to complete the settings. You can change it.

3.3 Save folder settings

Click ⑤-①.

On this screen, you can set the folder in which to save the measurement data in advance.

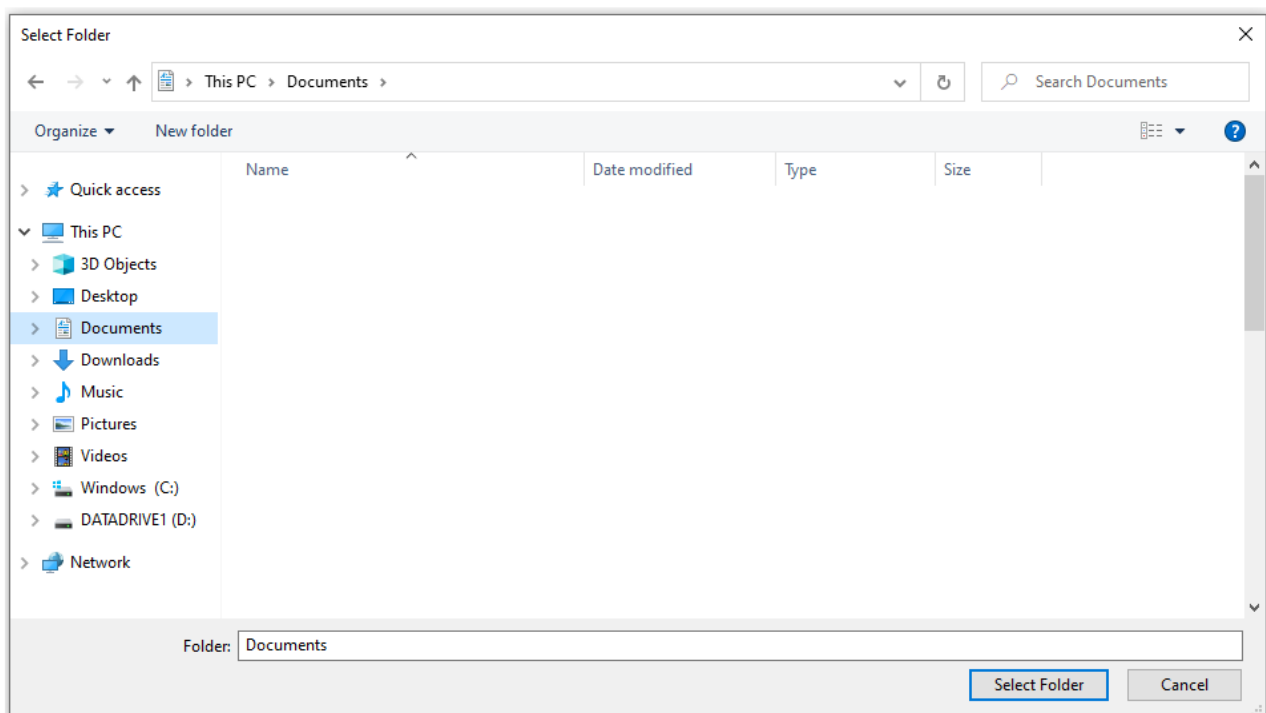


①	Save folder	Displays the folder path of the save folder.
②	Browse button	The folder selection dialog opens, so select the save folder.
③	OK button	Save the set storage folder and close the setting screen.
④	Cancel button	Close this screen without setting or changing the save folder.

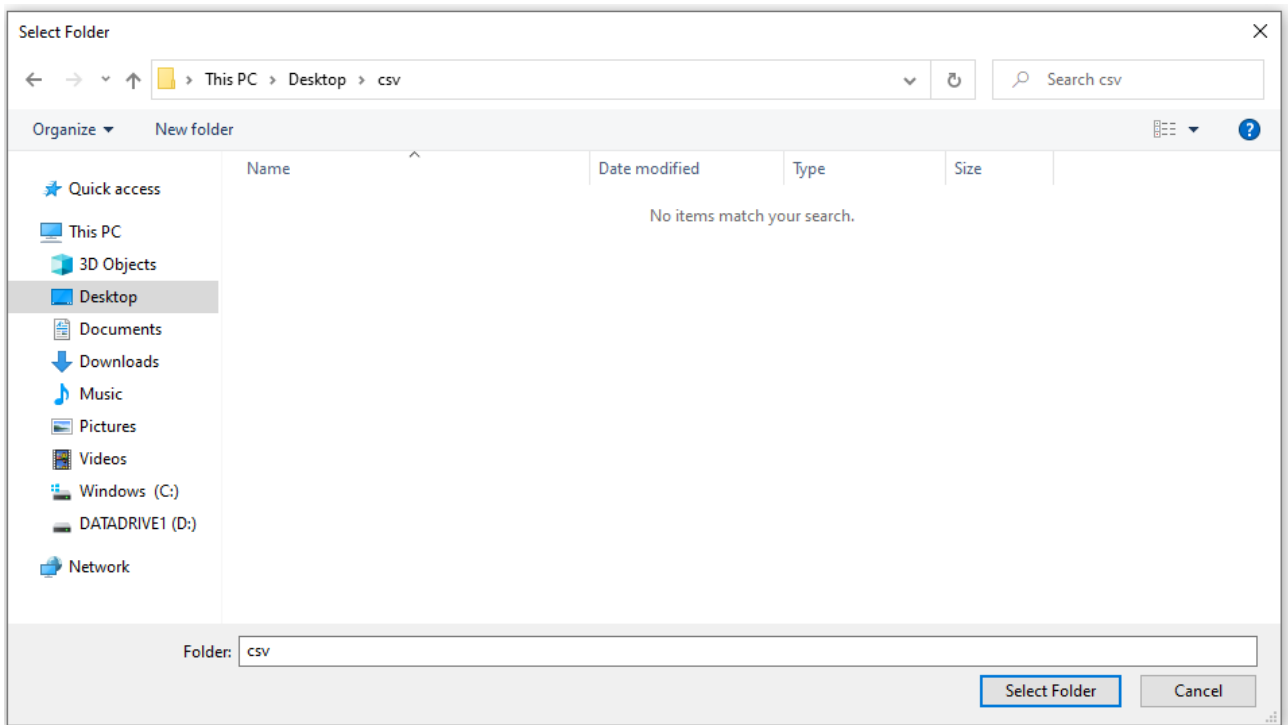
Click ②.

You can select a folder by clicking the browse button.

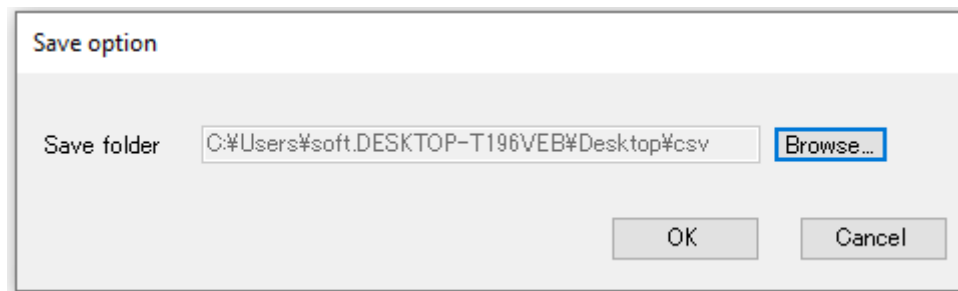
* The default file path is a document.



To change it, select another folder and click Select Folder.



The folder path to the selected folder is displayed in the save folder text box. Click OK.



The save folder settings are complete. By doing this, you can open the folder set when saving the data.

3.4 Graph settings Setting graph

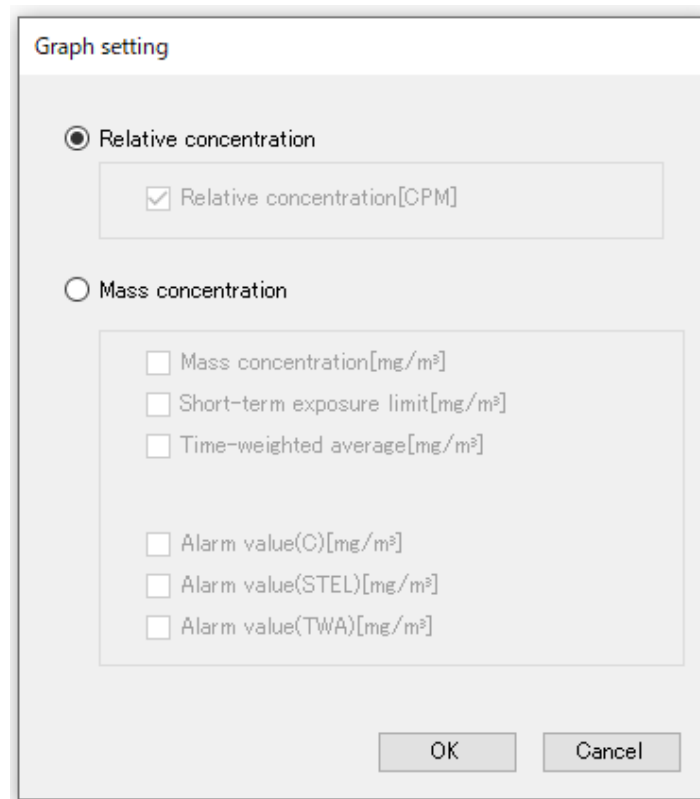
Click ⑥-①.

①	Relative concentration radio button	If you check it, the check box ② will be checked. The graph of item ② is drawn.
②	Relative concentration [CPM] checkbox	If checked, it will be added to the legend of the graph, and the graph will be drawn at the time of measurement..
③	Mass concentration radio button	If you check the check boxes ④ ⑤ ⑥ ⑦ ⑧ ⑨ enter. ④ ⑤ ⑥ ⑦ Checked items are graphed.
④	Mass concentration [mg/m3]	If checked, it will be added to the legend of the graph, and the graph will be drawn at the time of measurement.
⑤	Checkbox	If checked, it will be added to the legend of the graph, and the graph will be drawn at the time of measurement.
⑥	Short Term Exposure Limit (STEL) [mg/m3] check box	If checked, it will be added to the legend of the graph, and the graph will be drawn at the time of measurement.
⑦	Time-weighted average (TWA) [mg/m3] check box	If checked, you can edit the alarm value (C) on the main screen.
⑧	Alarm value (C)	If checked, the alarm value (STEL) on the main screen can be edited.
⑨	[mg/m3] checkbox	If checked, the alarm value (TWA) on the main screen can be edited.
⑩	Alarm value (STEL)	Save your settings and change the main screen based on your settings.
⑪	[mg/m3] checkbox	Closes the screen without making any changes.

3.4.1 For relative density setting

Check the Relative Concentration radio button to display the relative concentration graph.

Click the OK button when the settings are complete.



The image shows a 'Graph setting' dialog box. It has two radio buttons: 'Relative concentration' (selected) and 'Mass concentration'. Under 'Relative concentration', there is a checked checkbox for 'Relative concentration[CPM]'. Under 'Mass concentration', there are six unchecked checkboxes: 'Mass concentration[mg/m³]', 'Short-term exposure limit[mg/m³]', 'Time-weighted average[mg/m³]', 'Alarm value(C)[mg/m³]', 'Alarm value(STEL)[mg/m³]', and 'Alarm value(TWA)[mg/m³]'. At the bottom right are 'OK' and 'Cancel' buttons.

Graph setting

☒ Relative concentration

☒ Relative concentration[CPM]

☐ Mass concentration

☐ Mass concentration[mg/m³]

☐ Short-term exposure limit[mg/m³]

☐ Time-weighted average[mg/m³]

☐ Alarm value(C)[mg/m³]

☐ Alarm value(STEL)[mg/m³]

☐ Alarm value(TWA)[mg/m³]

OK Cancel

3.4.2 For mass concentration setting

To display the mass concentration graph, check the mass concentration radio button.

Select "Mass Concentration [mg/m³]" for the graph you want to draw during measurement.
Select from "Short-term exposure limit (STEL) [mg/m³]" and "Time-weighted average (TWA) [mg/m³]" and check.

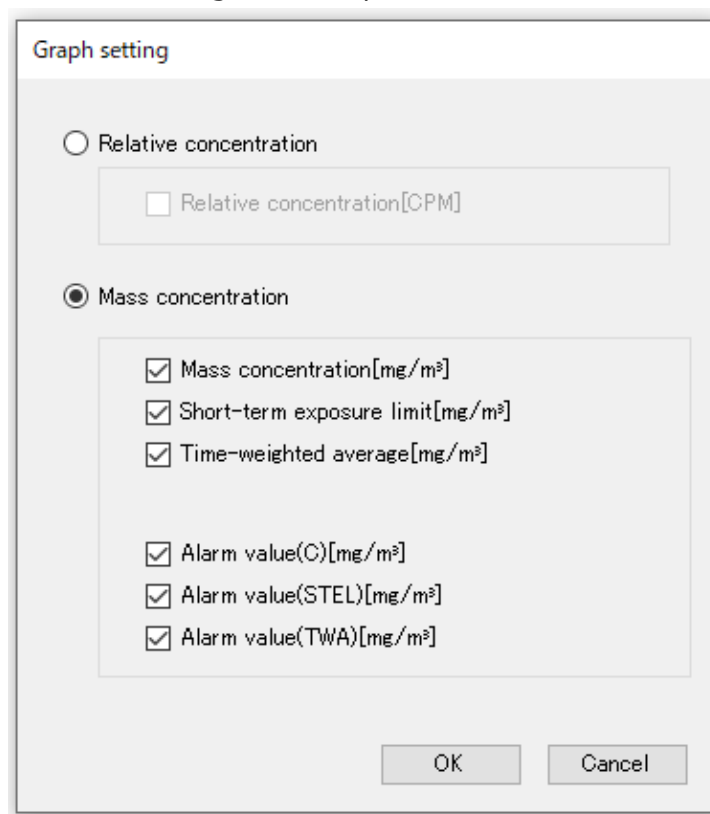
Be sure to check one of the graphs you want to draw.

Set the alarm value you want to set on the main screen to "Alarm value (C) [mg/m³]" and "Alarm value (STEL) [mg/m³]".

Select from "Alarm value (TWA) [mg/m³]" and check it.

If you remove the check, you will not be able to change the alarm value on the main screen.

Click the OK button when the settings are complete.



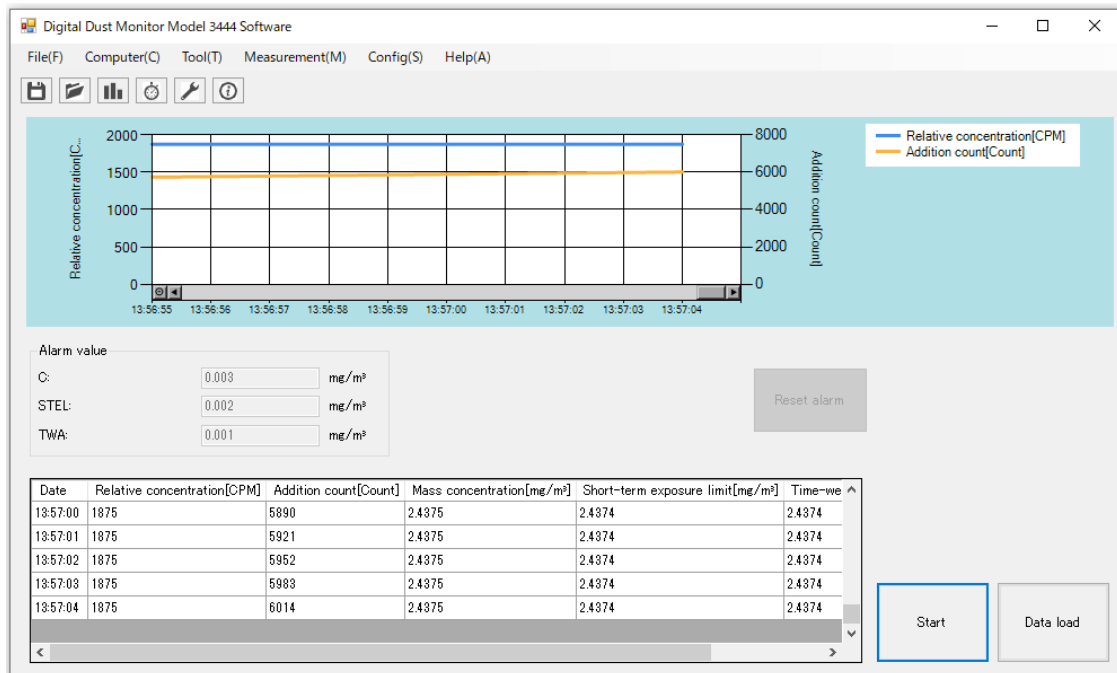
The image shows a 'Graph setting' dialog box. It has two main sections. The first section is 'Relative concentration' with a radio button that is not selected. Below it is a checkbox for 'Relative concentration[CPM]' which is also not selected. The second section is 'Mass concentration' with a radio button that is selected. Below it is a list of checkboxes: 'Mass concentration[mg/m³]', 'Short-term exposure limit[mg/m³]', 'Time-weighted average[mg/m³]', 'Alarm value(C)[mg/m³]', 'Alarm value(STEL)[mg/m³]', and 'Alarm value(TWA)[mg/m³]', all of which are checked. At the bottom right are 'OK' and 'Cancel' buttons.

3.4.3 Switching graphs after measurement

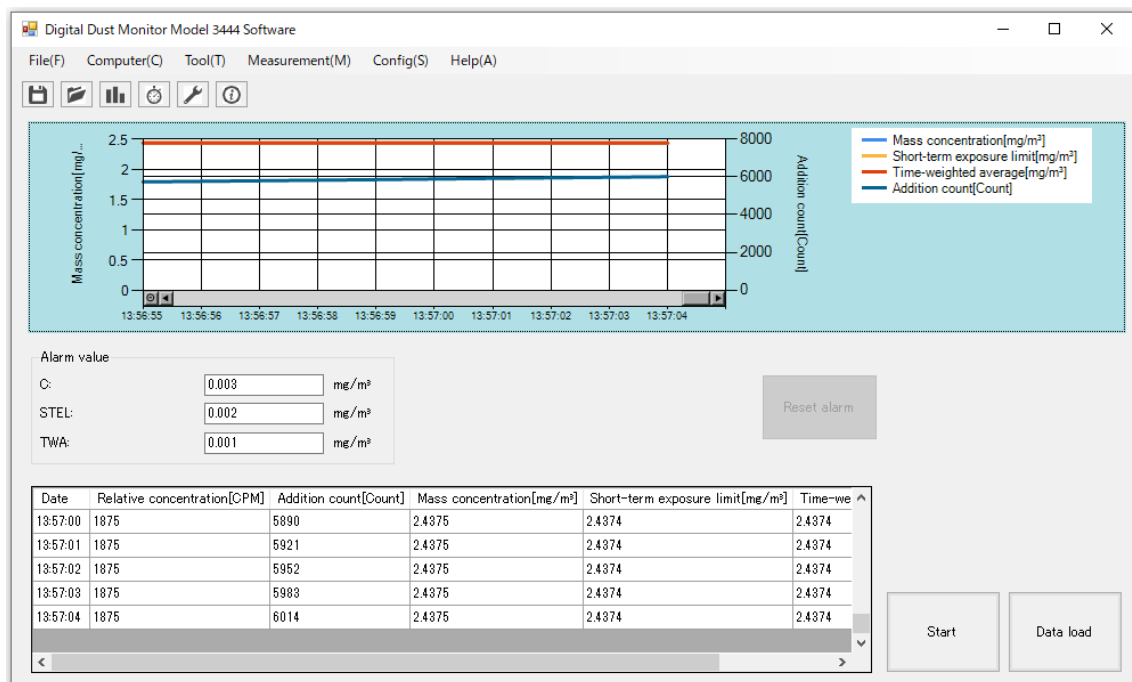
Relative concentration $\leftrightarrow$ mass concentration (no alarm)

If you switch the graph from the graph settings after measurement, the graph will be redrawn based on the graph settings.

Relative concentration graph

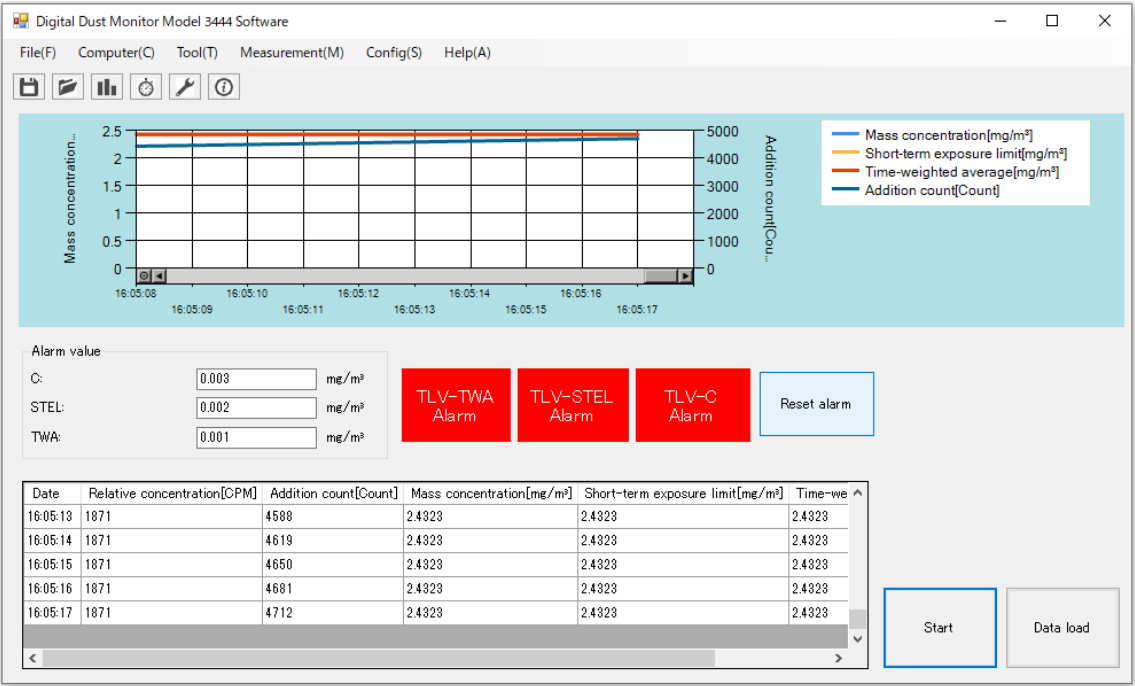


Mass concentration graph

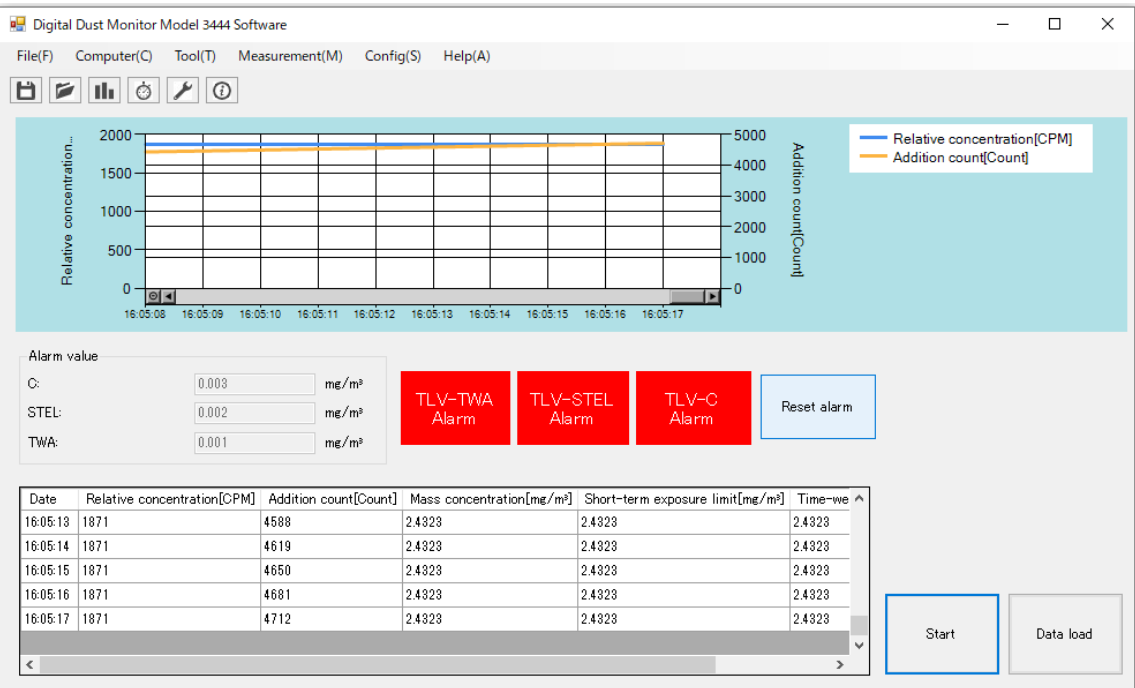


Mass concentration ↔ relative concentration (with alarm)

Mass concentration graph



Relative concentration graph



3.5 Relative concentration measurement

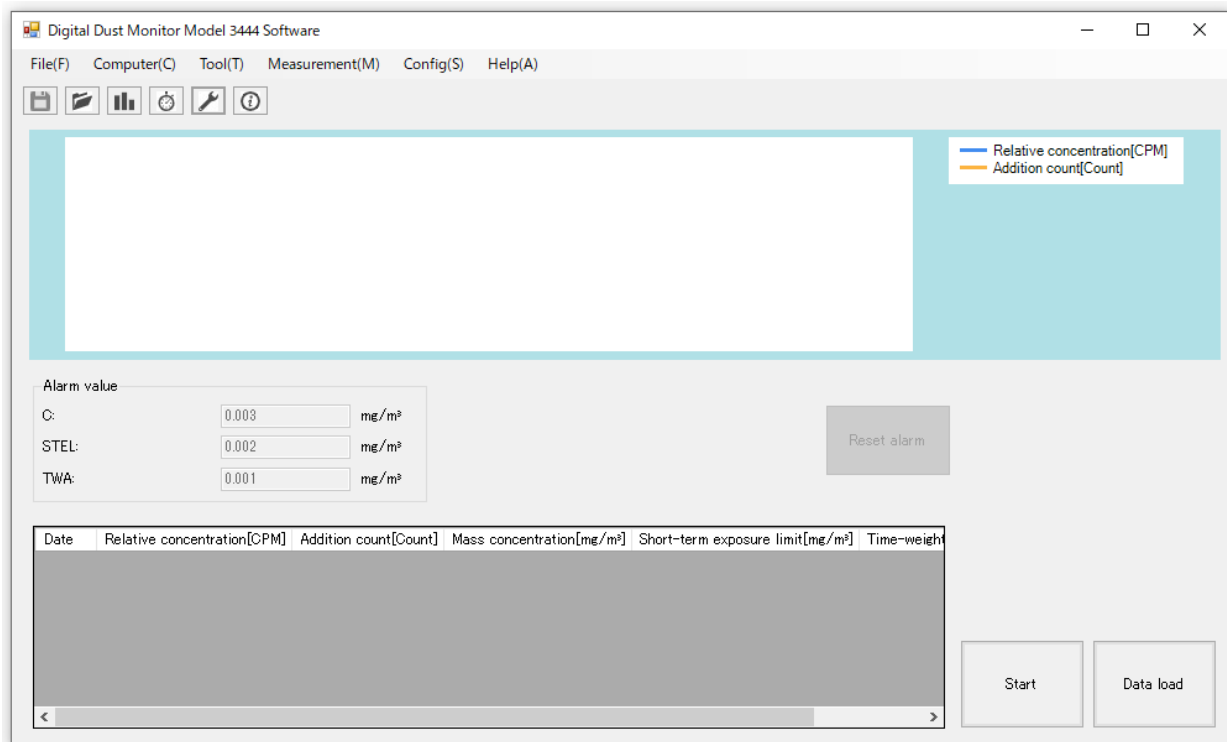
Set the graph setting to Relative Density.

After confirming that the main unit is displayed other than the "logo screen", connect the PC and the main unit with a USB cable,

Click the measurement start button from the "main screen" of the PC.

"KEY LOCK" is displayed on the screen of the main unit, and the operation of the main unit can only be turned off.

After finishing the measurement, you can operate the main unit.



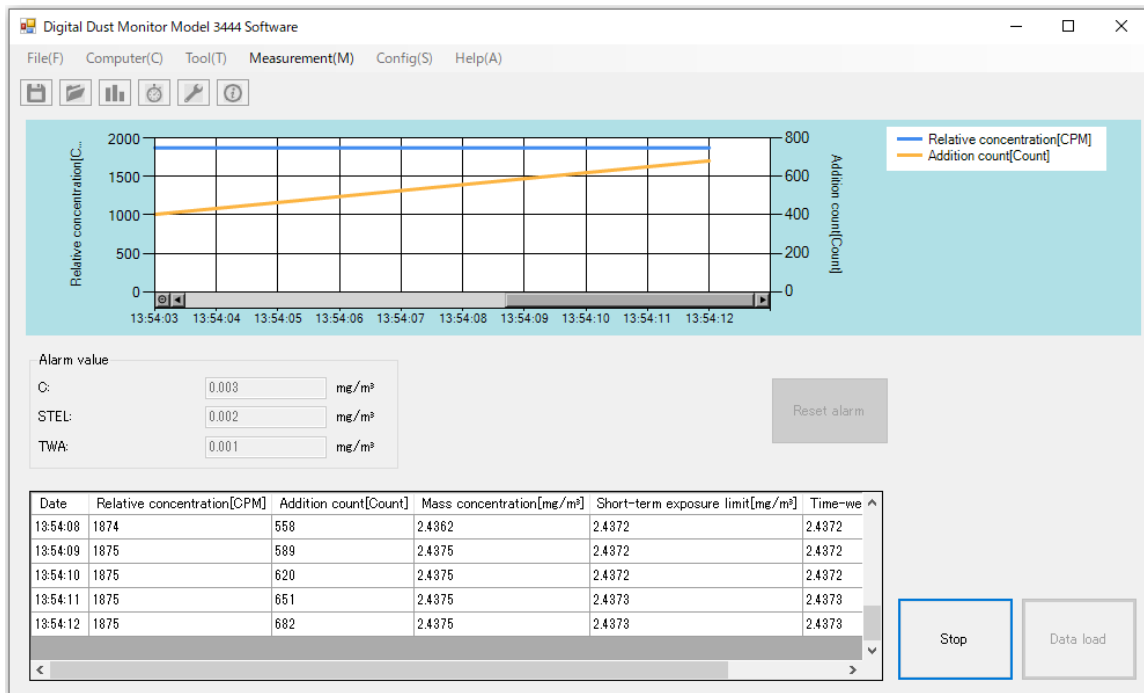
Screen during relative concentration measurement

During measurement, the measurement can be stopped by clicking the measurement end button on the measurement menu or the measurement end button on the main screen.

*1.Only the end of measurement, maximization, and minimization are valid during measurement.

*2.The main unit is effective only when the power is turned off.

*3.If the main unit is turned off during measurement, "Communication error has occurred." is displayed and measurement stops.

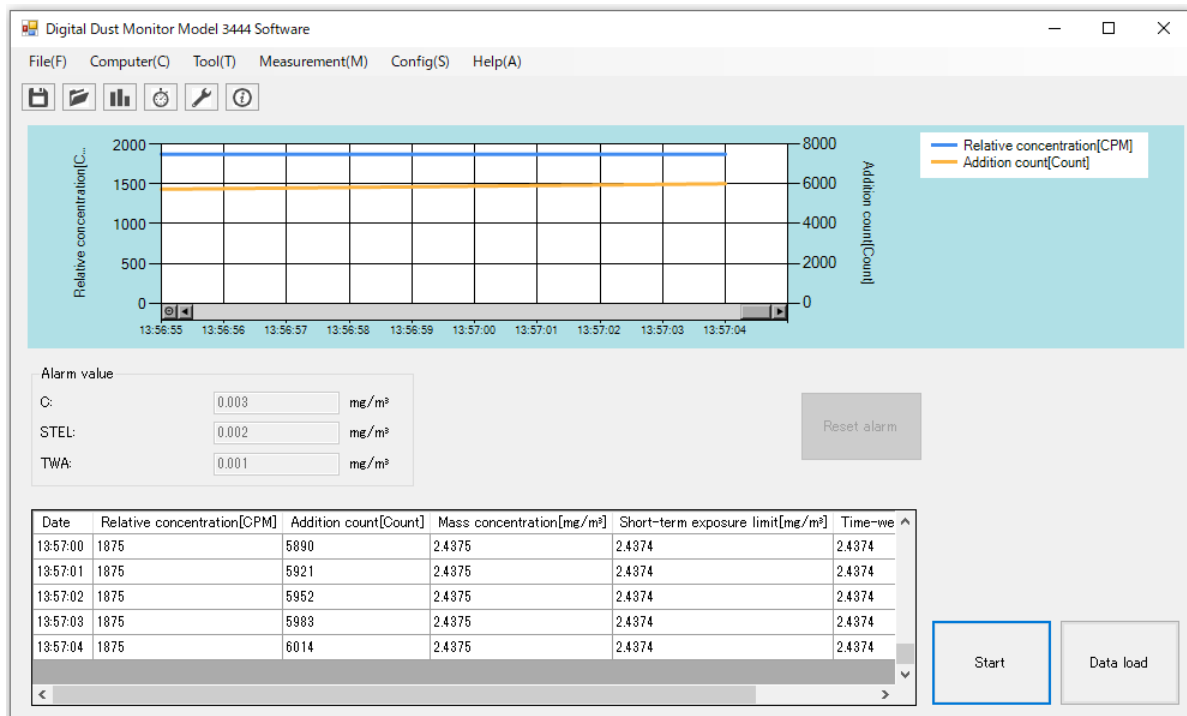


Screen after relative concentration measurement

Measurement ends and graphs and tables are no longer updated.

*1 After stopping measurement, other buttons become valid.

*2 Keys other than the Power key on the main unit are enabled.



3.6 Mass concentration measurement

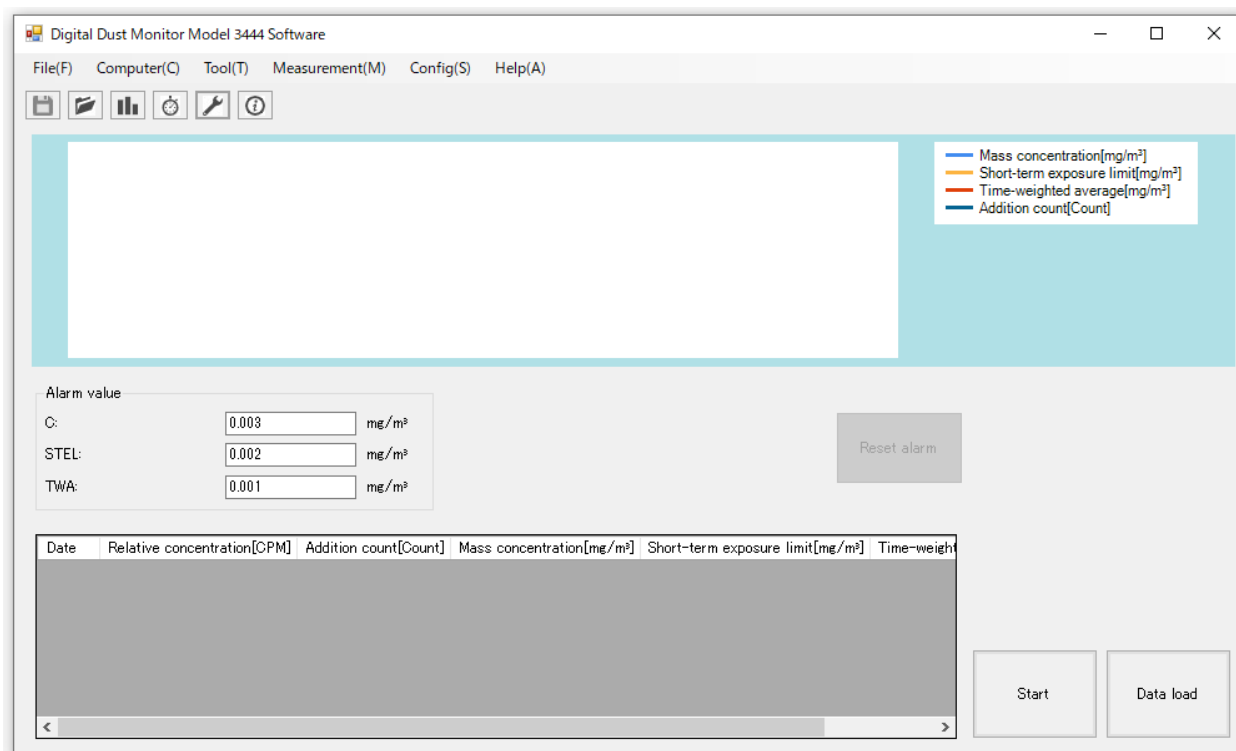
Set the graph settings to mass concentration.

After confirming that the main unit is displayed other than the "logo screen", connect the PC with a USB cable,

Click the measurement start button from the "main screen" of the PC.

"KEY LOCK" is displayed on the screen of the main unit, and the operation of the main unit can only be turned off.

After finishing the measurement, you can operate the main unit.



Mass concentration measurement screen

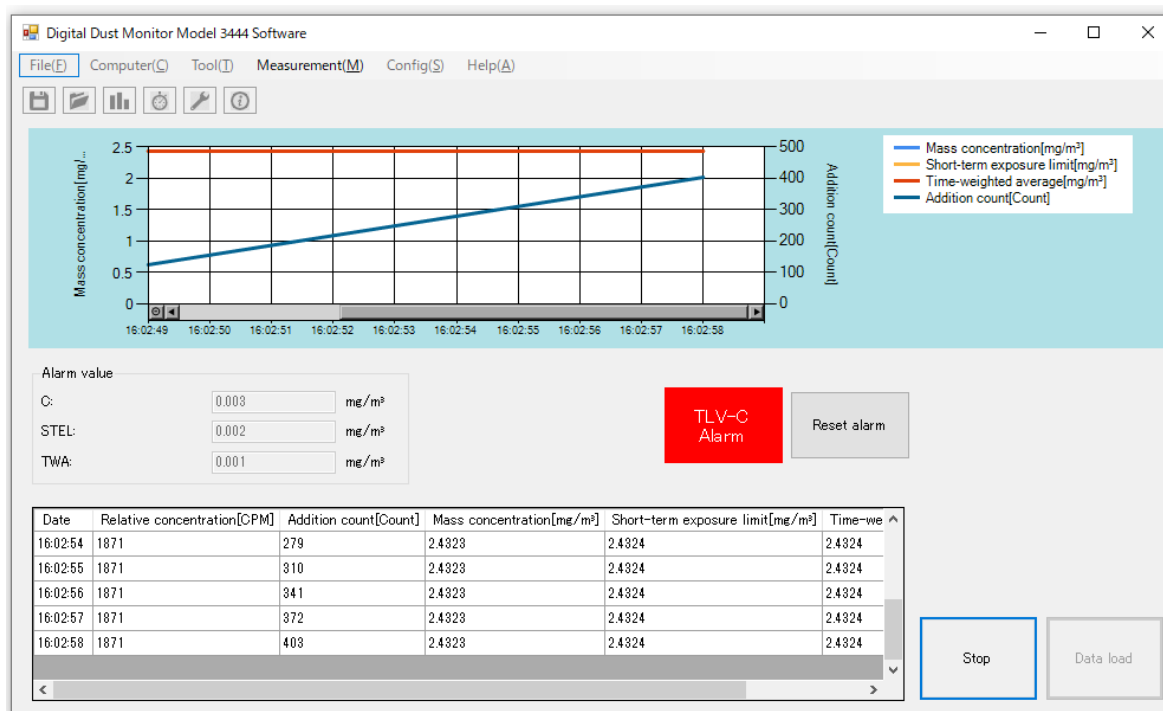
During measurement, the measurement can be stopped by clicking the measurement end button on the measurement menu or the measurement end button on the main screen.

For alarm display conditions, see Chapter 5 Alarm Conditions on page 37.

*1.Only the end of measurement, maximization, and minimization are valid during measurement.

*2.The main unit can only be turned off.

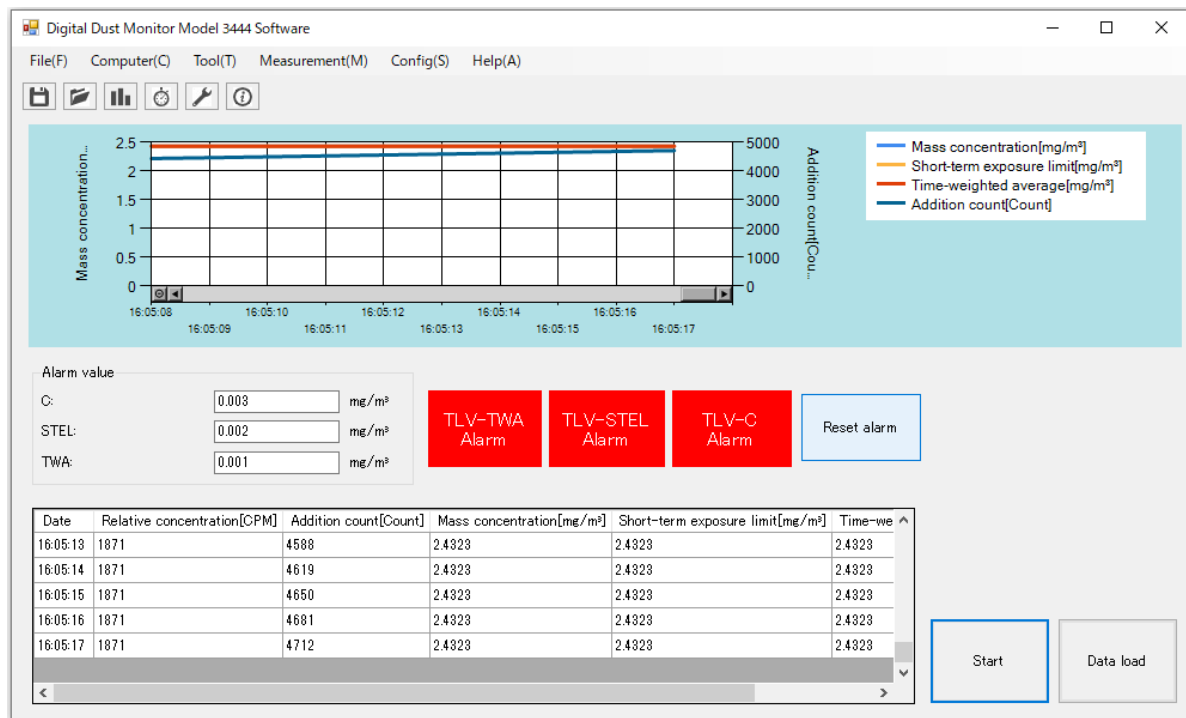
*3.If the main unit is turned off during measurement, the message "Communication error has occurred." will be displayed and measurement will stop.



Mass concentration measurement end screen

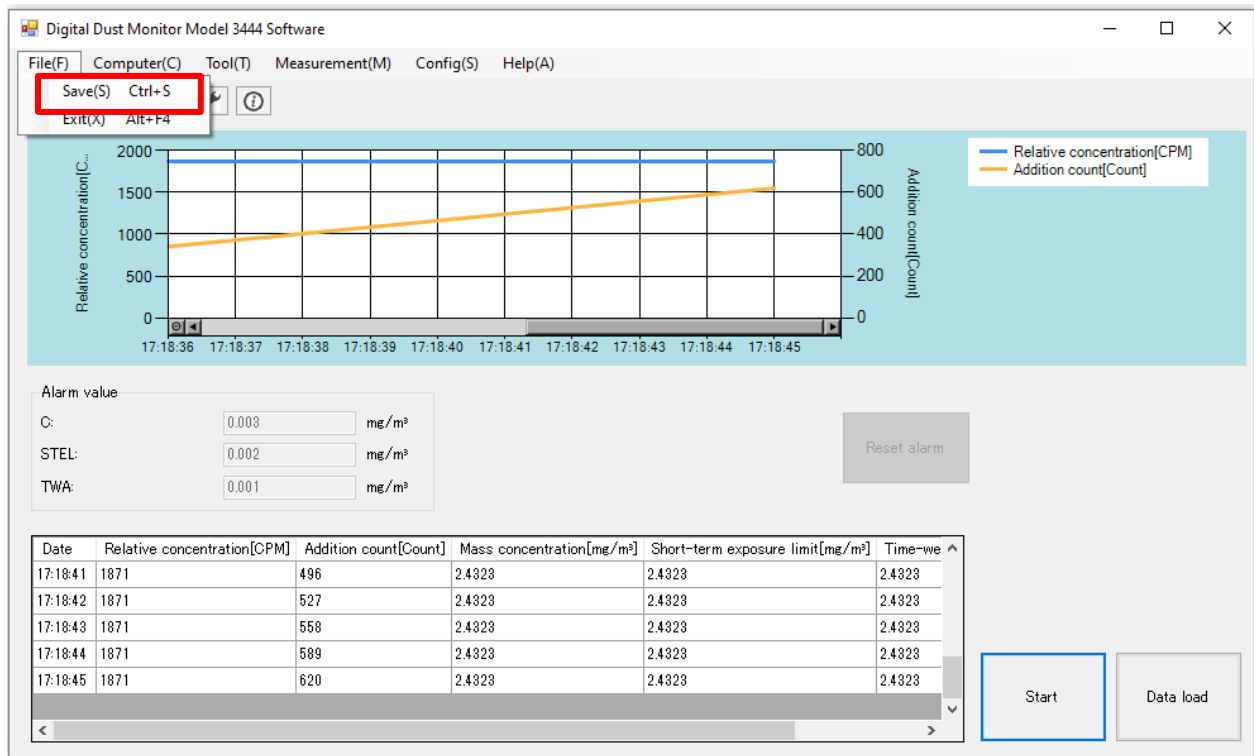
*1 Other buttons are enabled after measurement stops.

*2 Buttons other than the Power button on the main unit are enabled.

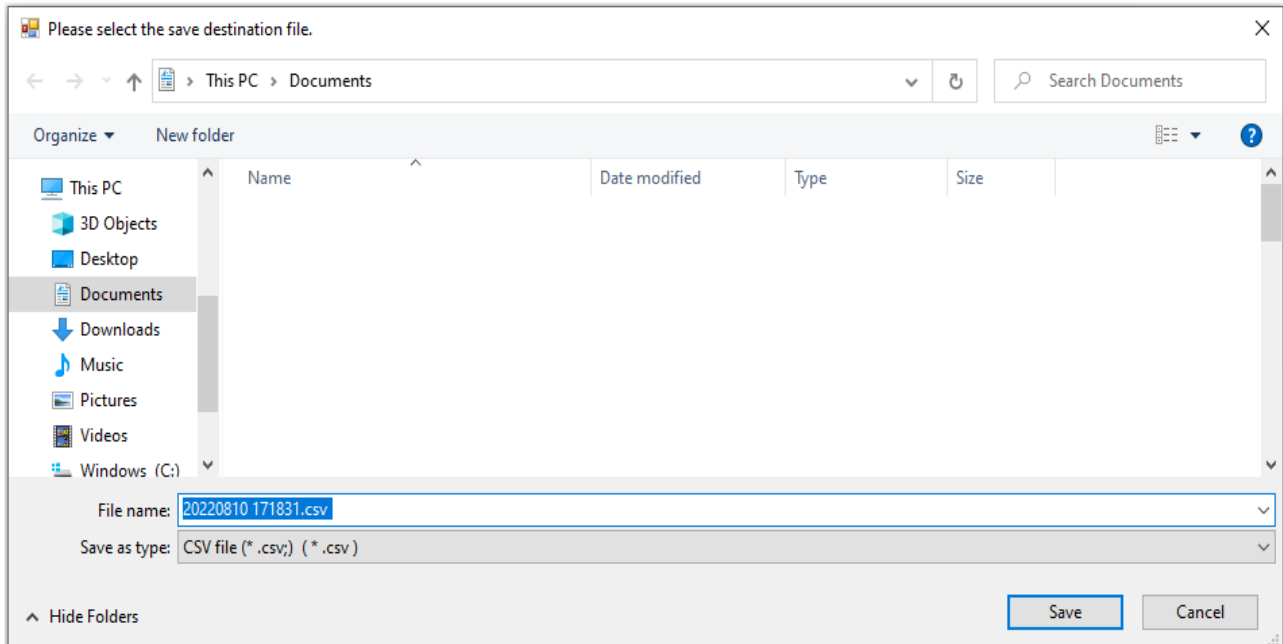


3.7 Saving measurement data

After finishing the measurement, click "File" - "Save".



When the save dialog is displayed, click the "Save" button. Your data is saved.



*The file name is year/month/day/hour/minute/second at the start of measurement.csv, and the file type is CSV.

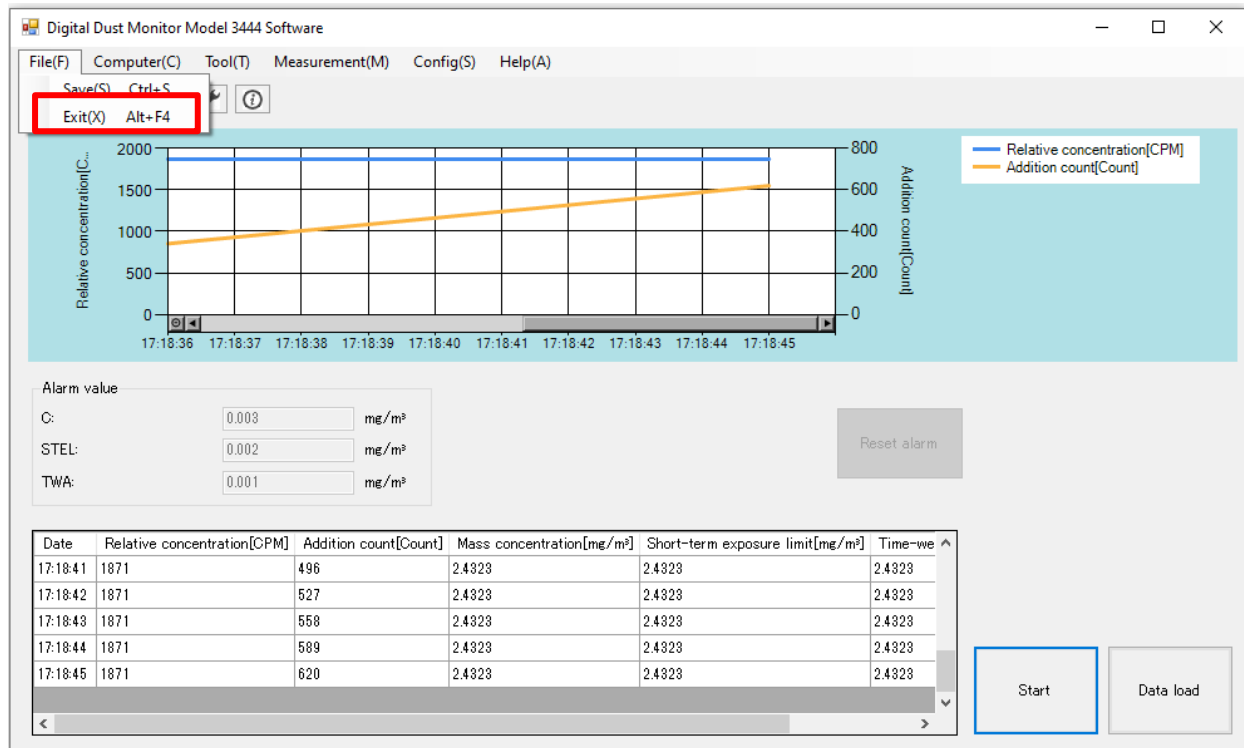
(Ex. For August 10, 2022 17:18:31, it will be "20220810 171831.csv".)

*If you have not set the save folder, the save folder will be Documents.

3.8 Application termination

Click "File" - "Exit" or X.

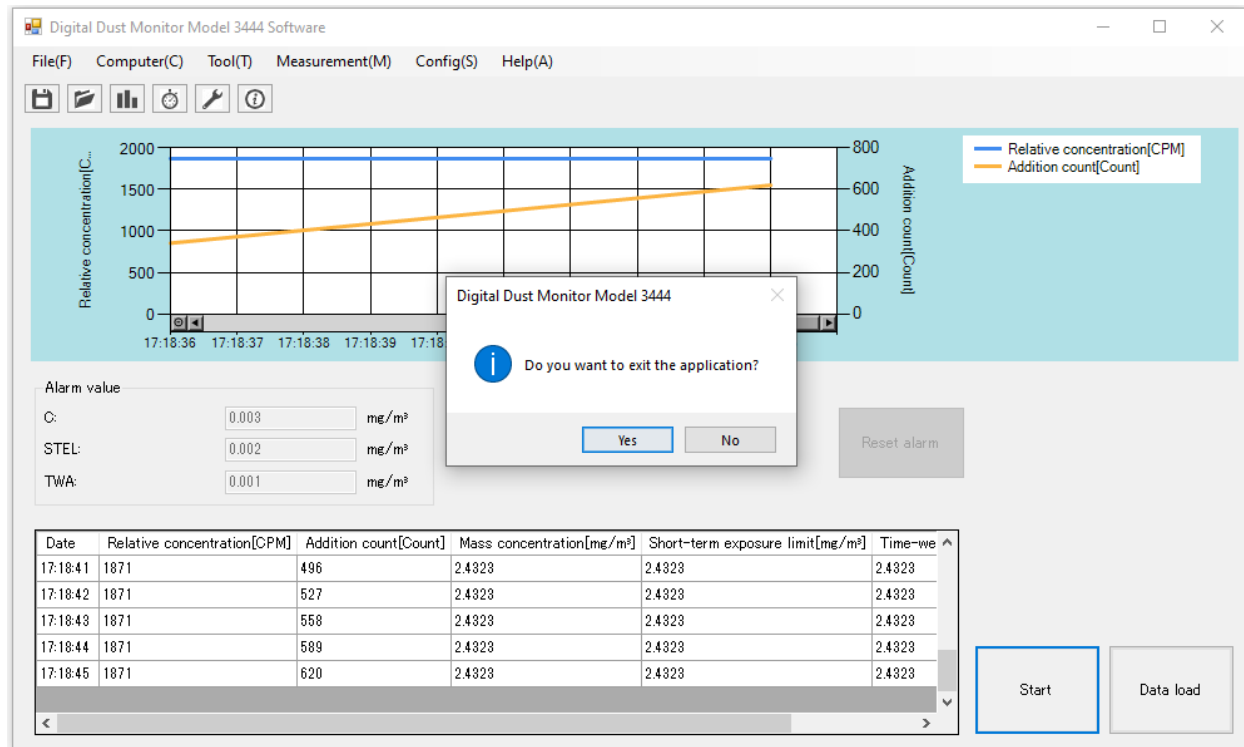
*Unsaved data will be discarded.



A message box will appear.

Click "Yes" to close the app.

Clicking "No" will close the message box and the app will continue.



3.9 Device settings

After confirming that the main unit has a display other than the "logo screen" and connecting the PC with a USB cable,

Click the main unit settings on the main screen.

You can change the settings of the main unit from the PC software.

Config

① Calculation ② Time adjust ③ K value

Start date(YYYY/MM/DD): 2022 / 09 / 02

Start time: 11 : 17 : 10

Sampling times : 01 : 00

No.Trial: 10 Times

Total time: 00 : 10 : 00

Write

④ Close

①	Calculation tab	Switch to the calculation setting screen.
②	Time adjust tab	Switch to the main unit setting screen.
③	K value tab	Switch to the mass concentration conversion factor setting screen.
④	Close button	Closes the screen without making any changes.

3.9.1 Calculation settings

You can change the calculation settings of the main unit from the PC software.

When you enter each item and click the setting button, the setting contents are transferred to the main unit.

The screenshot shows the 'Config' window with the 'Calculation' tab selected. The settings are as follows:

- Start date(YYYY/MM/DD): 2022 / 09 / 02
- Start time: 11 : 17 : 10
- Sampling times : 01 : 00
- No.Trial: 10 Times
- Total time: 00 : 10 : 00

Buttons: Write, Close

①	Start date (yyyy)	You can enter from the current AD to 2099. *1
②	Start date (MM)	You can enter the current 1 to 12. *1
③	Start date (dd)	You can enter the current 1 to 31 days. *1
④	Start time (hour)	You can enter the current time from 00 to 23:00. *1
⑤	Start time (min)	You can enter the current 00 to 59 minutes. *1
⑥	Start time (seconds)	You can enter the current 00 to 59 seconds. *1
⑦	Sampling times (minutes)	You can enter from 0 to 99 minutes. *2
⑧	Sampling times (seconds)	The initial value is 00.
⑨	No.Trial	You can enter from 0 to 59 seconds. *2
⑩	Total Time	The initial value is 01.
⑪	Write Button	You can enter from 1 to 65535 times.

*1 The measurement start date and measurement start time cannot be set in the past.

Entering a past value automatically switches to the current value.

*2 If both the minutes and seconds of the measurement interval are set to 0, it will automatically switch to 00:01.

3.9.2 Main unit time setting

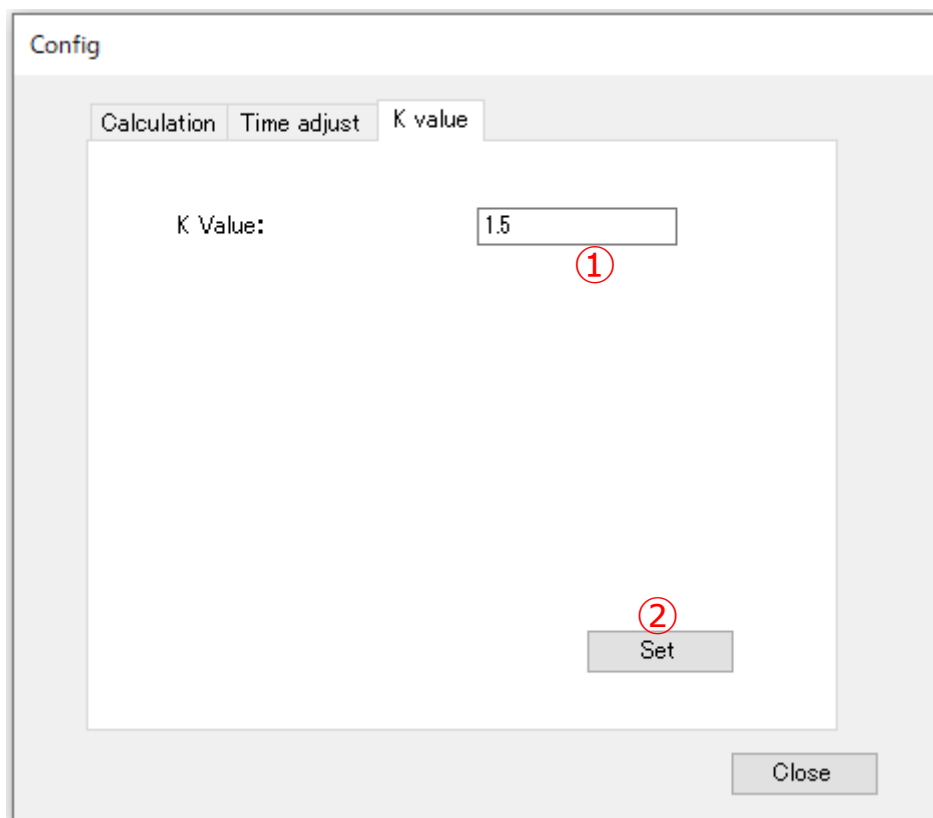
You can change the time on the main unit from the PC software.

Click the setting button to match the date of the main unit with the date of the PC.

①	Date to computer	Displays the current date on your PC.
②	Time to computer	Shows the current time of the PC.
③	Date to main unit	Displays the date set on the main unit.
④	Time to main unit	Displays the time set on the main unit.
⑤	Adjust button	Change the date and time of the main unit to the date and time of the PC.

3.9.3 K value setting

You can change the K value of the main unit from the PC software.



①	Mass concentration conversion coefficient (K value)	You can enter from 0.1 to 9.9. The initial value is the K value acquired from the main unit and displayed.
②	Set	The initial value is 1.5.

Change of K value

Enter the K value and click Settings.

* The range of K values that can be set is $K = 0.1$ to 9.9 .

*At the time of shipment, $1 \text{ CPM} = 0.001 \text{ mg/m}^3$ is assigned to the calibration particles in advance.

The setting value is set to 1.0 .

* Example when $K = 1.0$: $100\text{CPM} \rightarrow 0.1 \text{ mg/m}^3$

When $K = 2.0$: $100\text{CPM} \rightarrow 0.2 \text{ mg/m}^3$

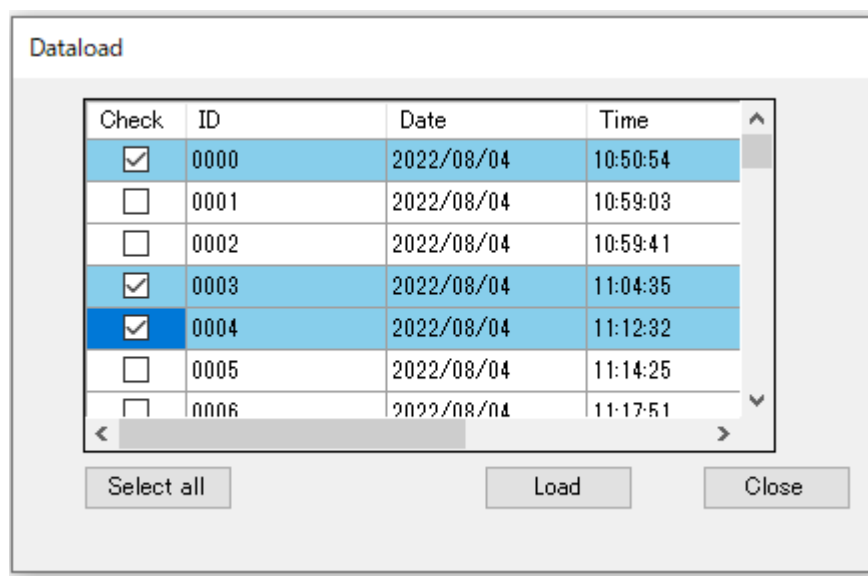
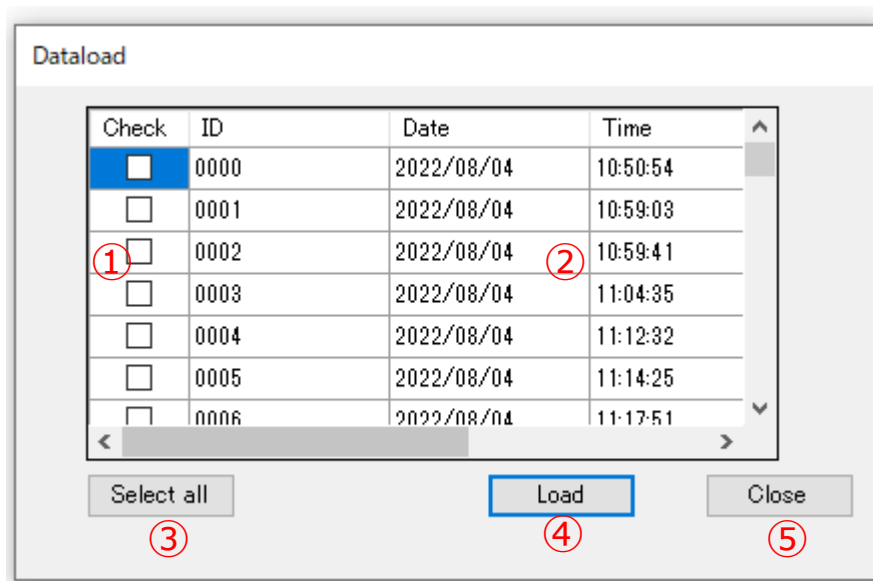
3.10 Check version information



You can check the software version and software name.

3.11 Read main unit data

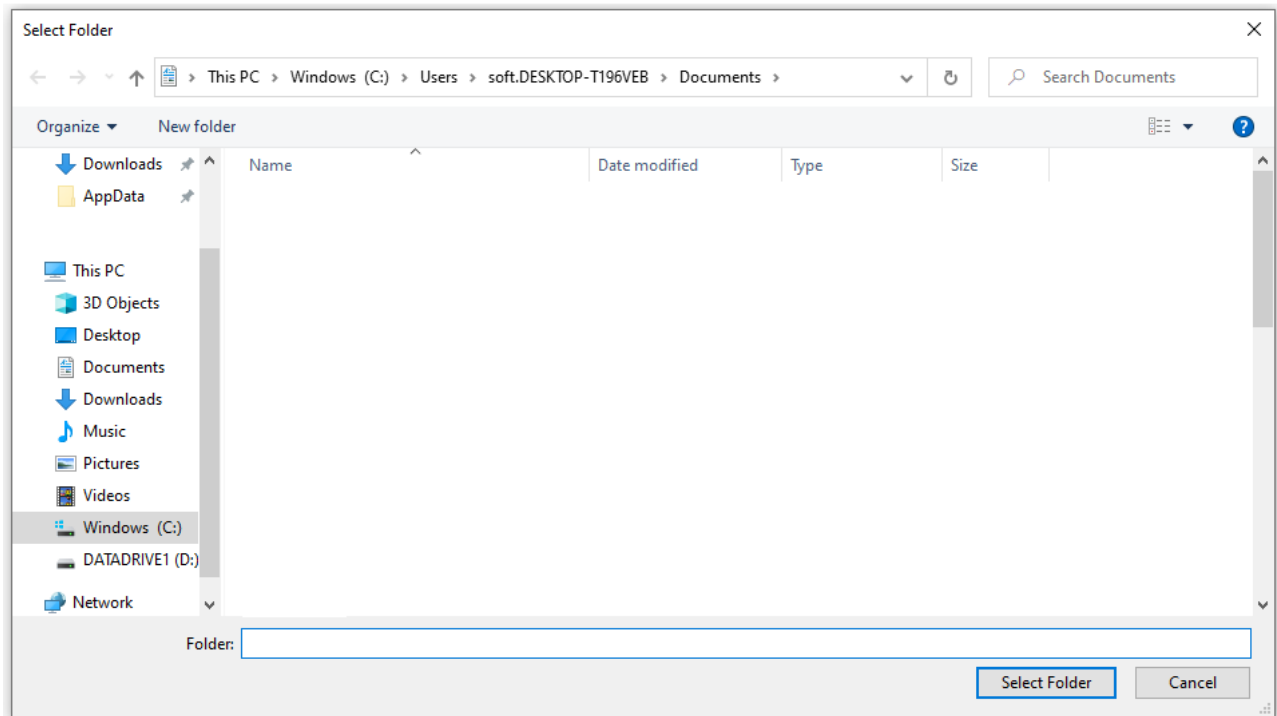
The measurement data saved in the main unit can be saved in the PC.



①	Checkbox	データ転送したいデータにチェックを入れます。 チェックを入れるとその行が青くなります。
②	Data table	本体に保存されているデータの一覧が表示されます。 データ転送したいデータにチェックが入るとその行が青くなります。
③	Select all button/ Cancel all button	全選択ボタンをクリックすると全てのチェックボックスにチェックが入り、 全解除ボタンに切り替わります。 全解除ボタンをクリックすると全てのチェックボックスからチェックが外れ、 全選択ボタンに切り替わります。
④	Load button	チェックボックスにチェックが入ったデータを本体から読み出し保存します。
⑤	Close button	画面を閉じます。

Saving device data

Check the data you want to save and click the Read button to display the folder selection dialog.



Data transfer starts and data is saved in the selected folder.

Capter 4 File save format

4.1 Files

Measured data is saved in CSV format.

4.2 Software measurement data file

The automatically generated file name is "yyyymmdd hhmmss" and the extension is "csv".

The file name can be freely changed by the user.

The save format is as follows.

[Content]

Date	2022/08/10	Count of data	20	K Value	1.3
Date	Relative concentration[CPM]	Addition count[Count]	Mass concentration[mg/m ³]	Short-term exposure limit[mg/m ³]	Time-weighted average[mg/m ³]
17:18:26	1871	31	2.4323	2.4323	2.4323
17:18:27	1871	62	2.4323	2.4323	2.4323
17:18:28	1871	93	2.4323	2.4323	2.4323
17:18:29	1871	124	2.4323	2.4323	2.4323
17:18:30	1871	155	2.4323	2.4323	2.4323
17:18:31	1871	186	2.4323	2.4323	2.4323
17:18:32	1871	217	2.4323	2.4323	2.4323
17:18:33	1871	248	2.4323	2.4323	2.4323
17:18:34	1871	279	2.4323	2.4323	2.4323
17:18:35	1871	310	2.4323	2.4323	2.4323
17:18:36	1871	341	2.4323	2.4323	2.4323
17:18:37	1871	372	2.4323	2.4323	2.4323
17:18:38	1871	403	2.4323	2.4323	2.4323
17:18:39	1871	434	2.4323	2.4323	2.4323
17:18:40	1871	465	2.4323	2.4323	2.4323
17:18:41	1871	496	2.4323	2.4323	2.4323
17:18:42	1871	527	2.4323	2.4323	2.4323
17:18:43	1871	558	2.4323	2.4323	2.4323
17:18:44	1871	589	2.4323	2.4323	2.4323
17:18:45	1871	620	2.4323	2.4323	2.4323

4.3 Main unit measurement data file

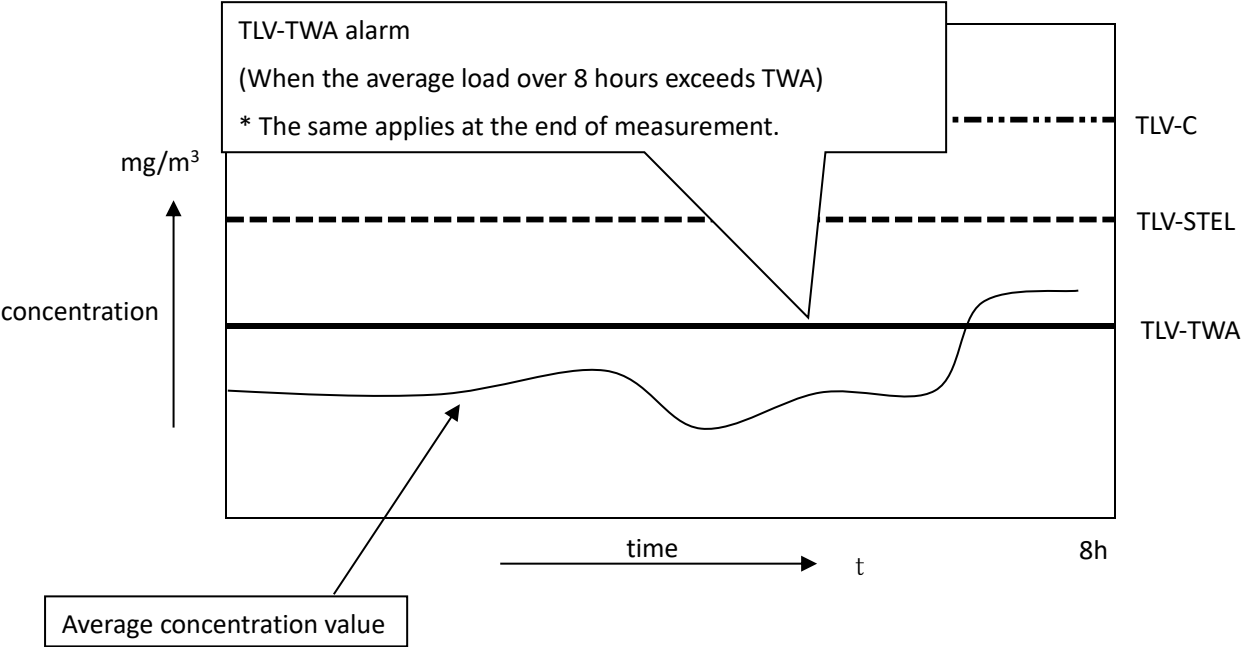
The name of the automatically generated file is "yyyymmdd hhmmss" of the main data, and the extension is "csv".

The file name can be freely changed by the user.

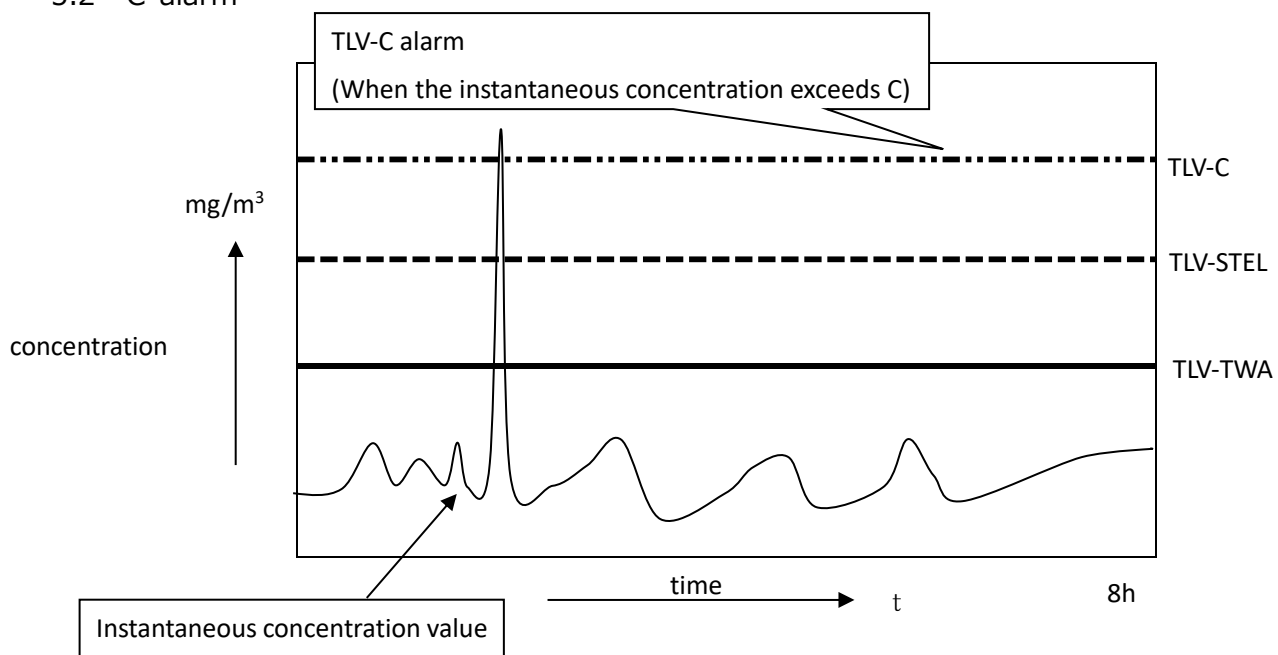
The saving format is the same as the software measurement data file.

Capter 5 Alarm condition

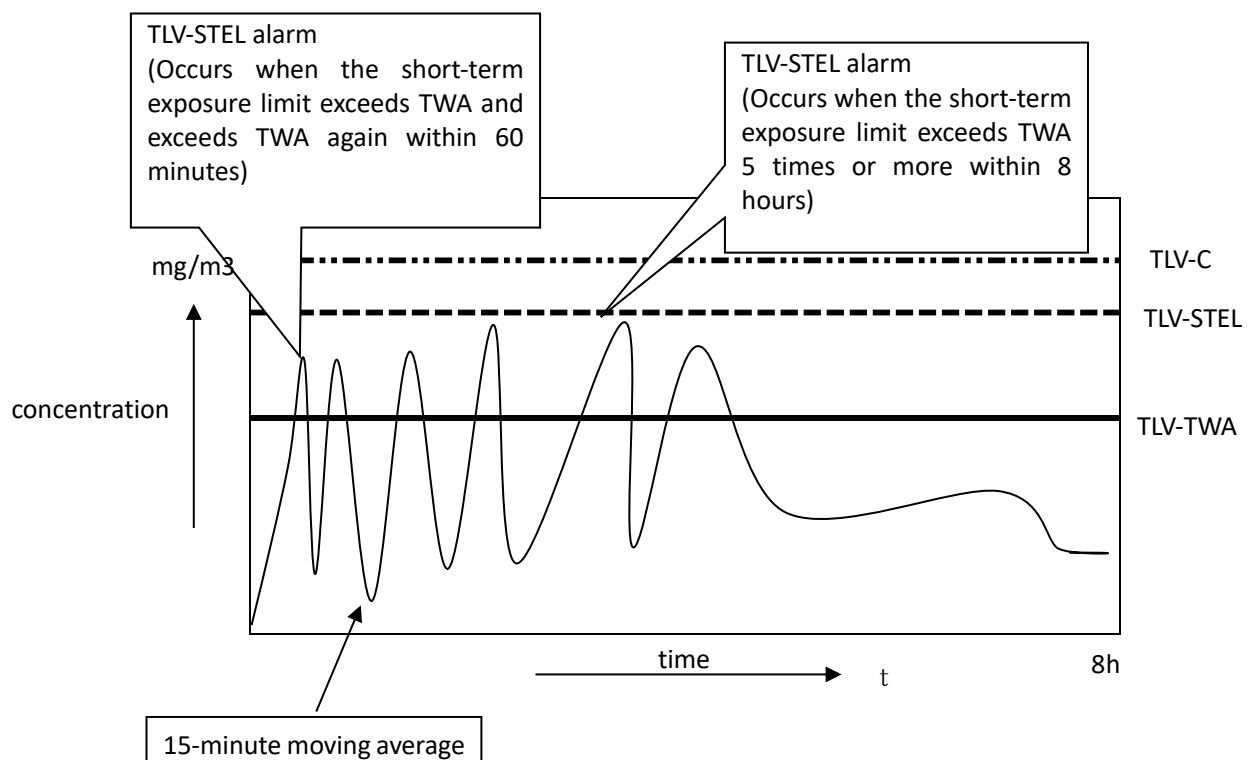
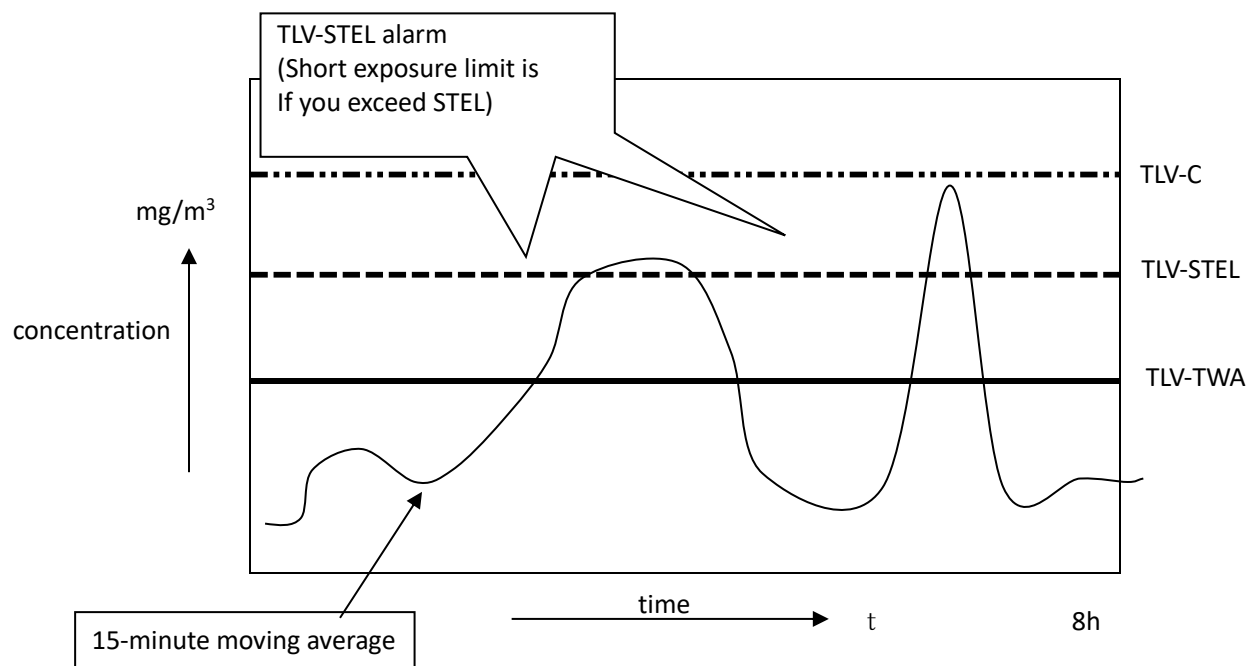
5.1 TWA alarm



5.2 C alarm



5.3 STEL alarm



Chapter 6 Contact Information



If you have any questions or inquiries about this product, please check the contact information below, as it depends on the region where you purchased the product.

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