PT0E-2080

RIKEN KEIKI

Portable Gas Detector

9000 Series

Data Logger Management Program

SW-9000Series

Operating Manual

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1. Introduction

The operating procedures and precautions described in this operating manual apply only for use in accordance with the stipulated purposes. Riken Keiki rejects all liability in cases involving use of the program in ways not described in this manual.

This operating manual omits descriptions of basic operations such as command selection and dialog box settings for Microsoft Windows 10. Please read the Windows manual and familiarize yourself with basic Windows operations before using the program.

⚠WARNING

The CD on which this program is provided is a CD-ROM.
Do not attempt to play this CD on a regular audio CD player.
High audio volumes may damage your ears or speakers.

CAUTION

Pointing device required
This software requires the use of a pointing device such as a mouse or touchpad. It cannot be used with a keyboard alone.

1-1. Software purpose and features

This software program is designed to import data collected using the data logger function of the 9000 Series into a PC for various purposes.
Importing data collected using the data logger function into a PC offers the following benefits:

- Allows collected data to be listed.
- Allows collected data details to be viewed in graph or table form.
- Allows graph and table data to be printed and stored as hard copies.
- Retains records of past data.
- Eliminates the need to write down data on paper by hand.
- Helps identify devices that require adjustment.
- Simplifies the management of multiple devices.

NOTE

- Unauthorized reprinting or reproduction of the contents of this document in part or in whole is strictly prohibited, unless otherwise stipulated by law.
- The contents of this document are subject to change without notice to allow product improvements.
- The user must accept the separately provided software license agreement before using this product. Opening the product package constitutes consent to the terms of the license agreement.
- Use this software solely for the intended purpose. Modifying the software or using the software in a manner departing from this manual may affect product safety and quality. Riken Keiki rejects all liability for any incidents or damages arising from failure to observe the warnings indicated above.

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2. Installing and Uninstalling

2-1. Operating environment precautions

This program is compatible with the Microsoft Windows 10 operating system. The program is not compatible with other operating systems.
This program requires up to approximately 41 MB of free hard disk space to install. It may require additional space, depending on the number of data samples. Make sure sufficient disk space is available.

CAUTION

Precautions regarding handling of the CD-ROM
1. CD-ROM storage Do not store in locations subject to direct sunlight or high temperatures and humidity. 2. CD-ROM drive type Do not insert into slot-loading CD-ROM drives. The label on the CD-ROM may prevent the CD-ROM from ejecting properly. Load the CD-ROM into a tray-loading CD-ROM drive.

The program uses a virtual PC COM port with a USB to UART bridge controller.
The USB to UART bridge controller used is the Silicon Laboratories CP2102N.
Serial port settings
Baud rate: 921,600 bps, Data: 8 bits, Parity: Even, Stop bit: 1
Obtaining the driver
Download the CP210x USB Virtual COM Port (VCP) from the Silicon Laboratories website (see below) and install the driver.
https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers

2-2. Installing the software

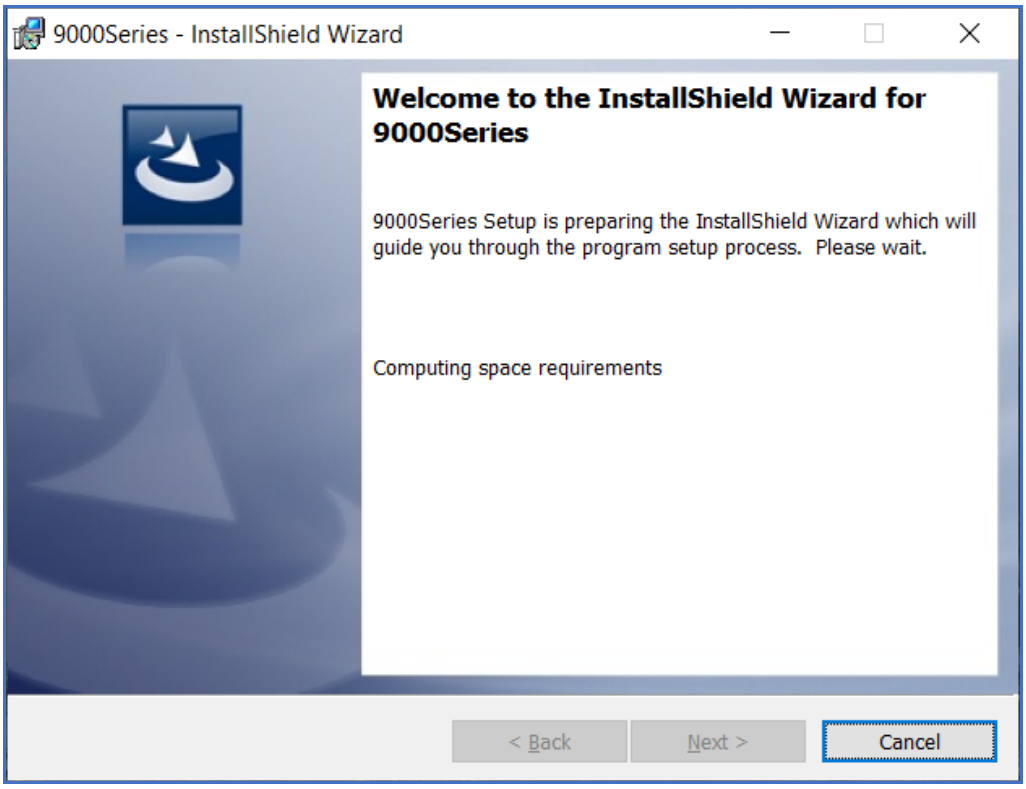
Insert the install CD containing this program into the CD-ROM drive of your PC.
The installation screen will appear automatically after a short while.
Do the following if the PC does not support automatic CD-ROM startup:
1. Open the CD-ROM drive in Explorer.
2. Double-click on the [setup.exe] file.

Note: Install using a user account with administrator rights.

2-3. Installation procedure

● Launch setup

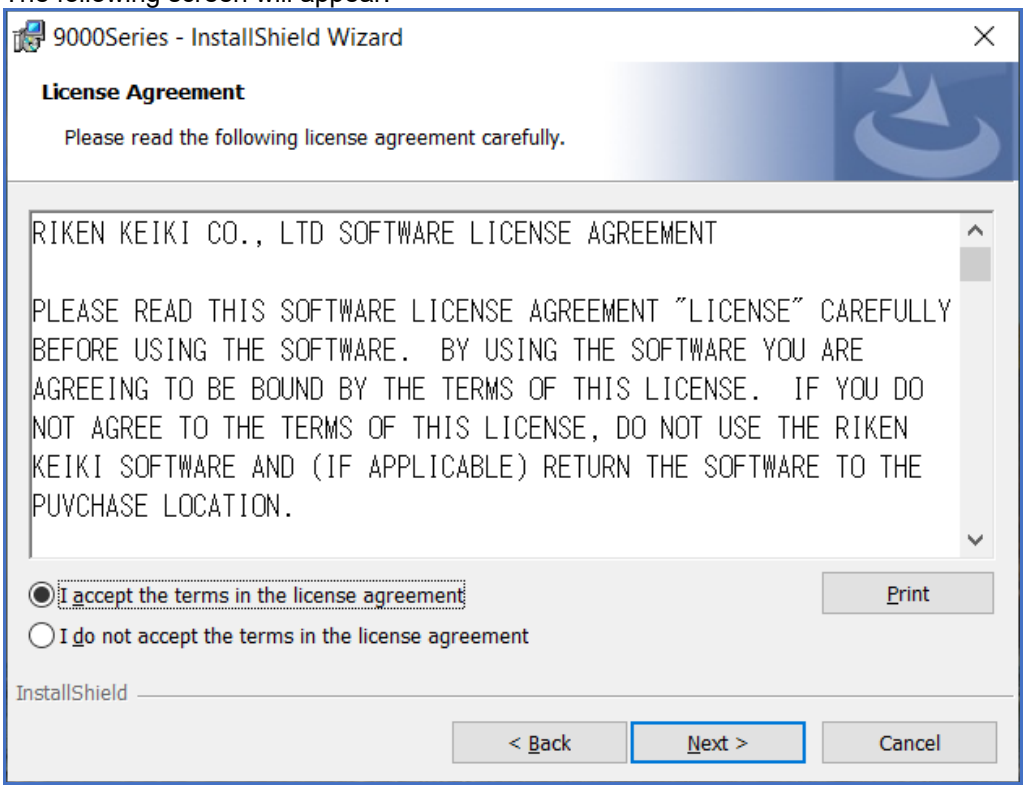
The following screen will appear after the CD-ROM is inserted or setup.exe is launched.



Click the [Next] button.

● Accept license agreement

The following screen will appear:

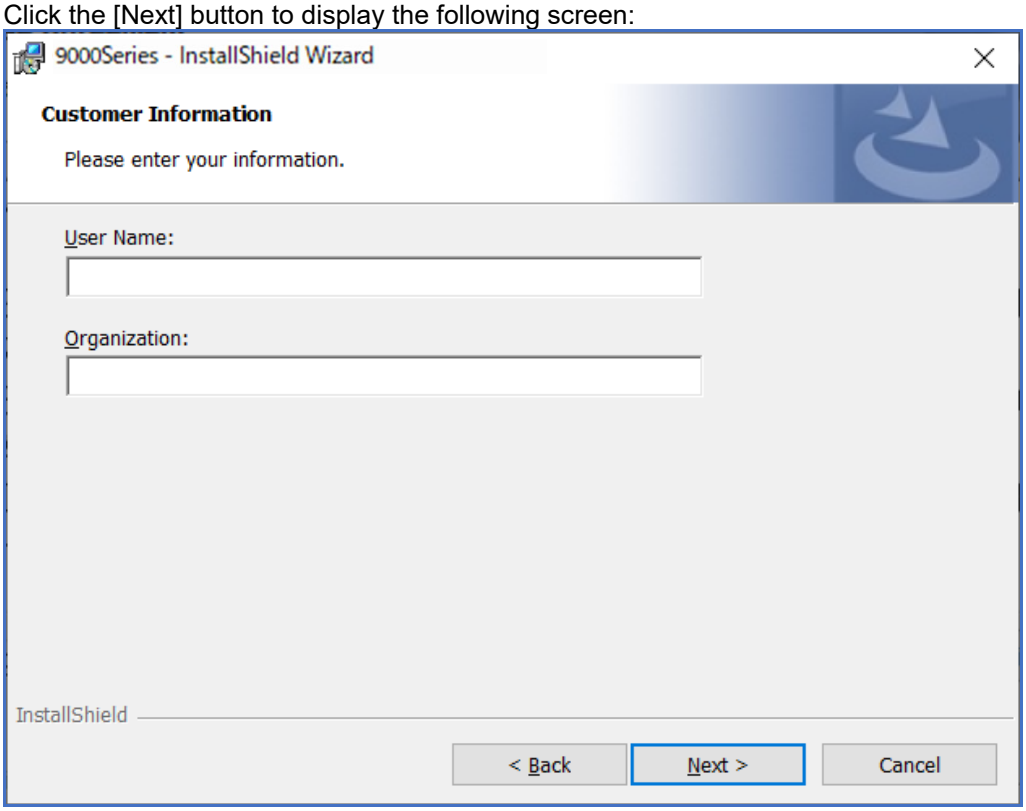


To install the software, click the [Next] button. To abort the process, click the [Cancel] button.

CAUTION: Make sure you have read and fully understand the terms of the software license agreement before installing the software.

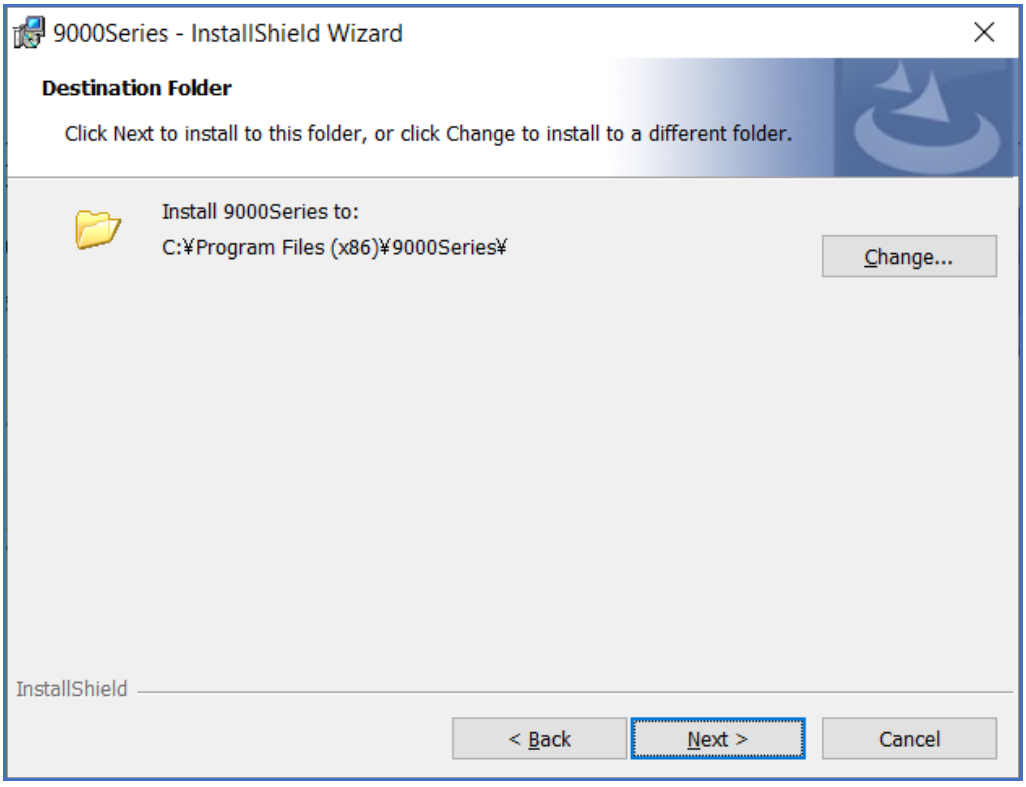
● User information

Click the [Next] button to display the following screen:



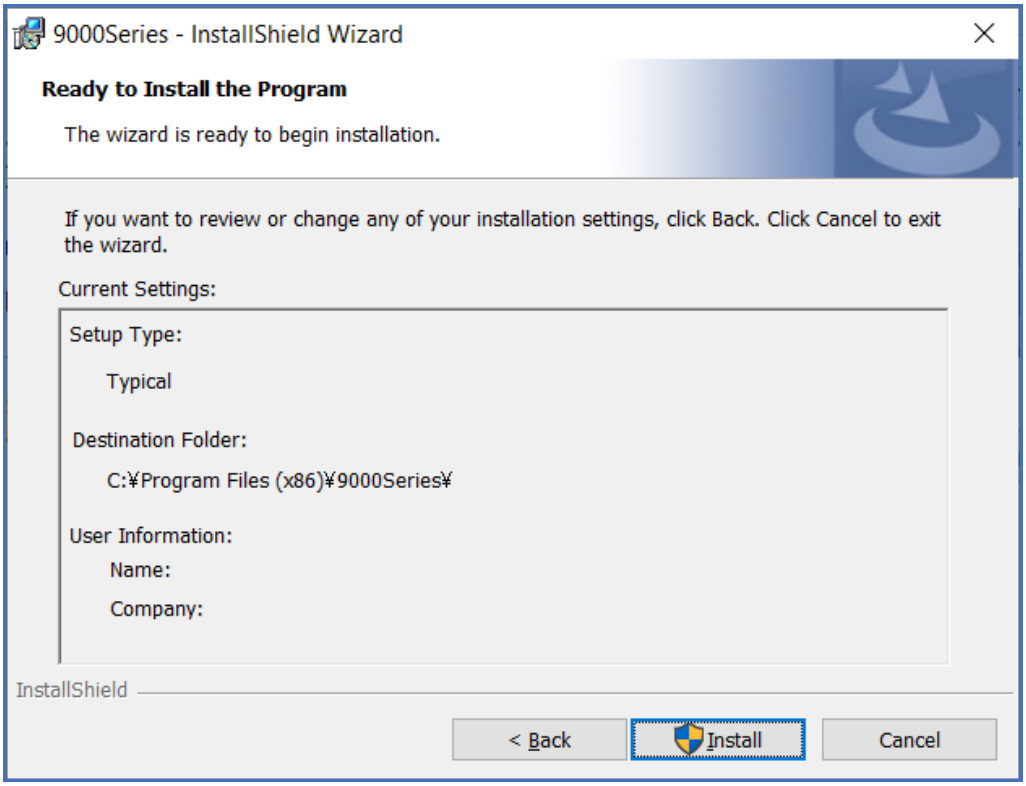
Enter user information on the Customer Information screen, then click the [Next] button to display the following screen:

● Destination folder



To install in this folder, click the [Next] button. To install in a different folder, click the [Change...] button.

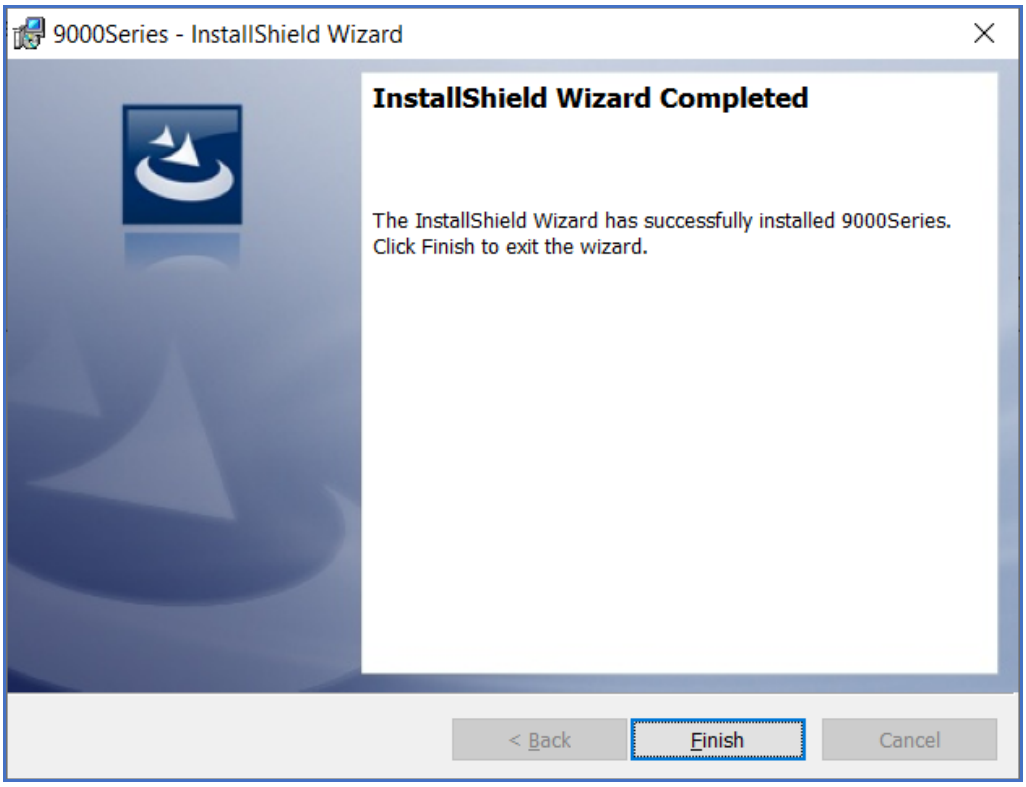
● Start setup



Click the [Install] button to begin installing.
* The User Account Control window is displayed. Click [Yes].

● Complete

The following screen will appear once setup is complete:



The program can be used as soon as setup is complete.

CAUTION

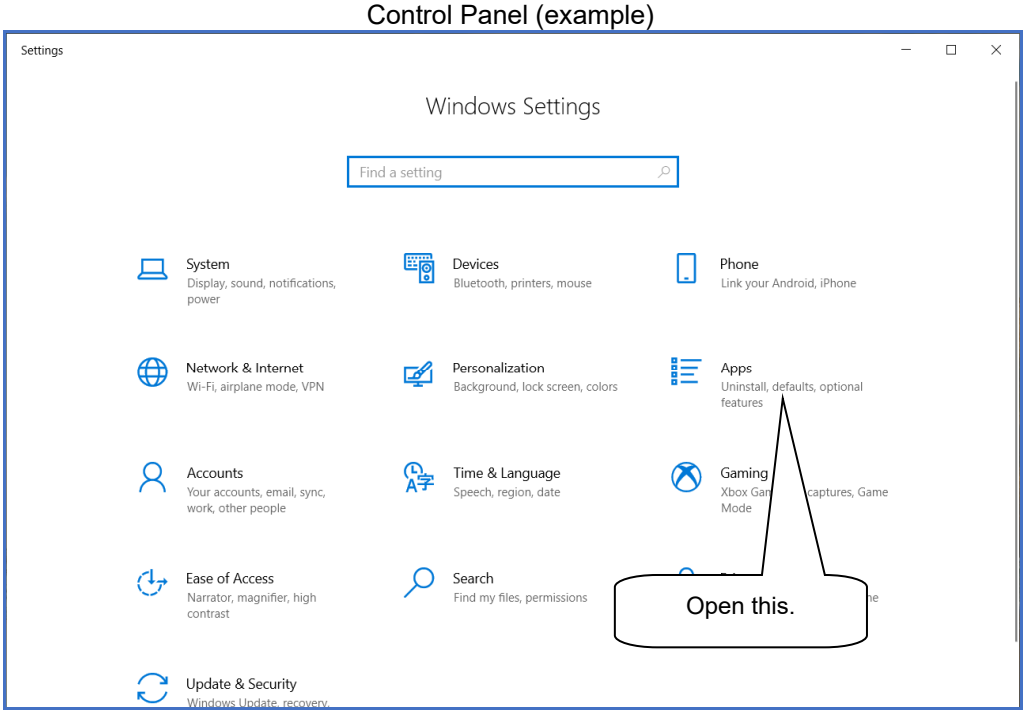
Saving past data before reinstalling
Note the following precautions if reinstalling the program: 1. Uninstall the program before reinstalling. 2. If the program is uninstalled after it has been used, certain files will remain undeleted. One such file is the [9000Series.mdb] database file. If you wish to save past data, save this file to another location before deleting the folder.

2-4. Uninstallation procedure

● Startup

To uninstall the software, click [Start] on the taskbar, click [Settings], and launch the Control Panel.

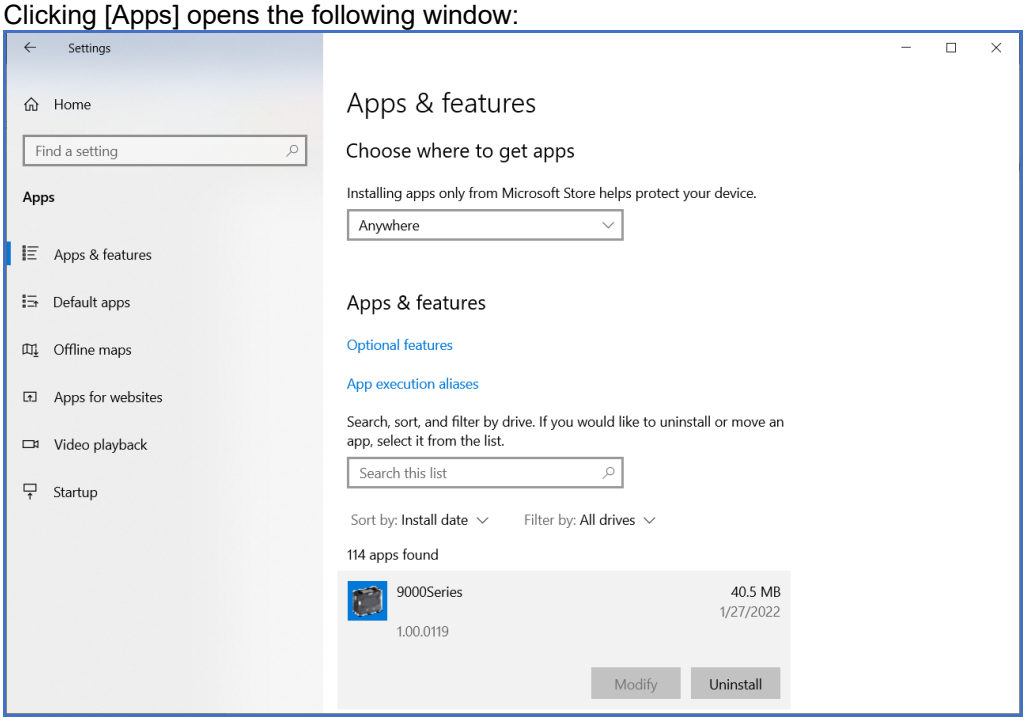
Control Panel (example)



Click to open [Apps] in the Control Panel.

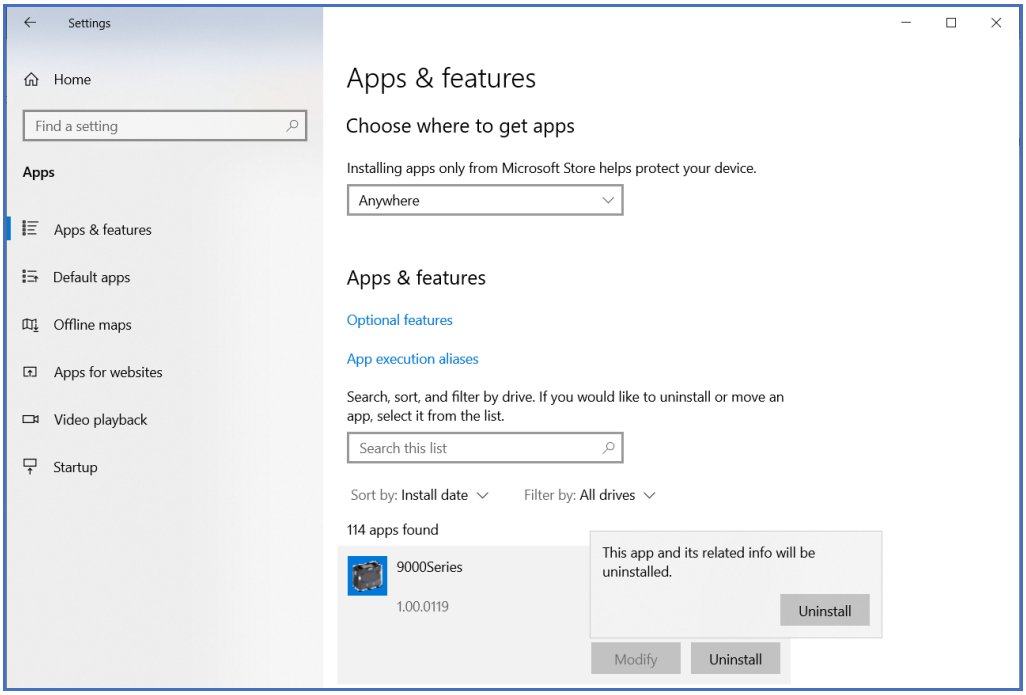
● Select 9000Series

Clicking [Apps] opens the following window:



Click [9000Series].

● Start deletion



Click [Uninstall] to display the confirmation window.
Click [Uninstall] again in the confirmation window to begin uninstalling.
* The User Account Control window is displayed. Click [Yes].

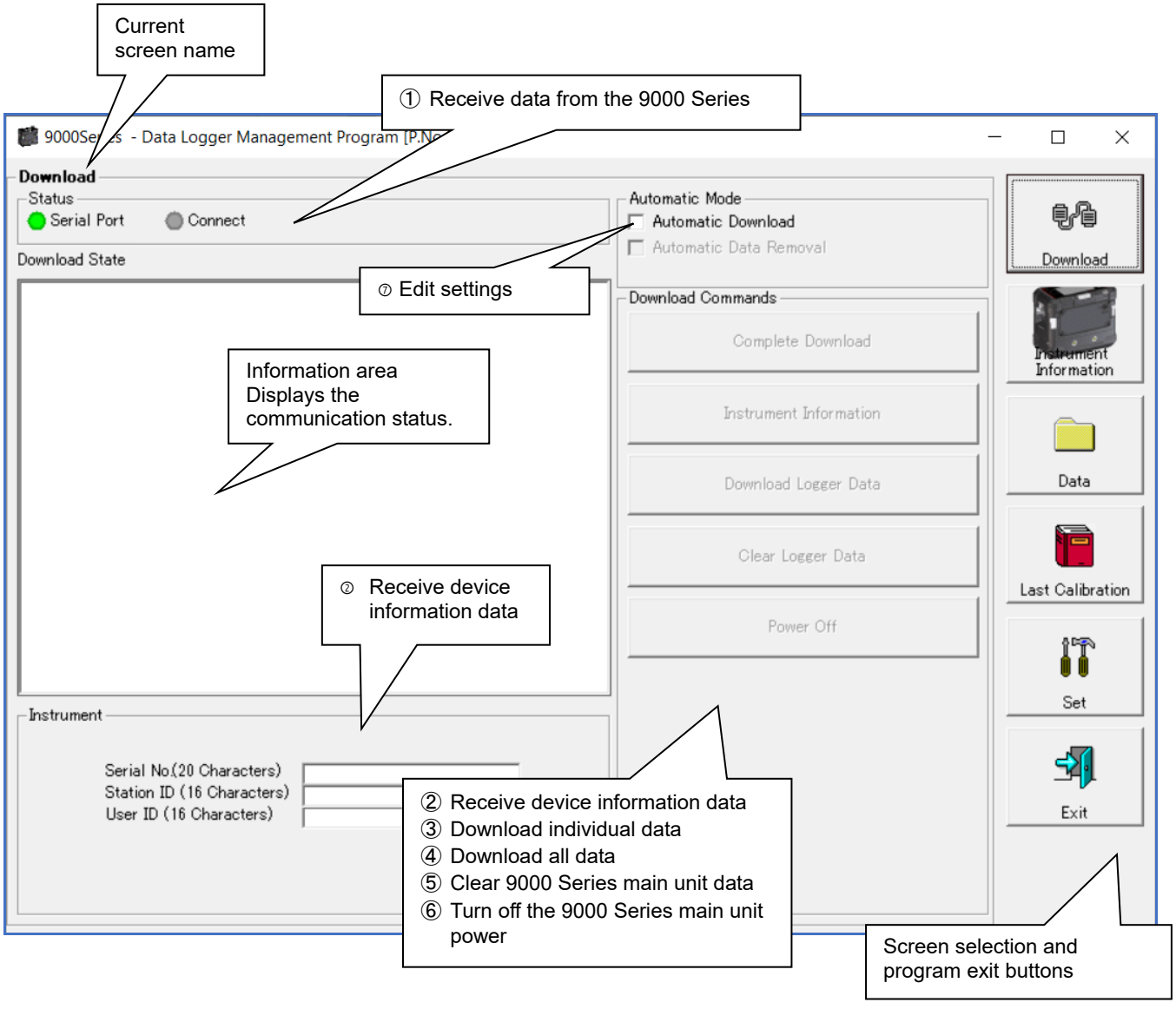
CAUTION: A dialog such as [Do you want to remove the shared file?] may appear while uninstalling. Select [No]. Selecting [Yes] may affect other applications.

3. Operating Procedures

Start the program by clicking the [9000Series] shortcut on the desktop or click the Start menu and start the program.

3-1. Download screen

The Download screen follows the splash screen.



To start data communication, connect using a USB cable, start this program, and turn on the main unit. The program will automatically determine whether data communication is possible; if so, it will enter reception standby mode.

CAUTION: If connection is not possible, either disconnect and then reconnect the USB cable, or restart the PC.

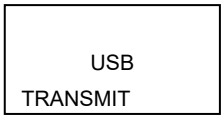
① Receive data from the 9000 Series

● Main unit preparation

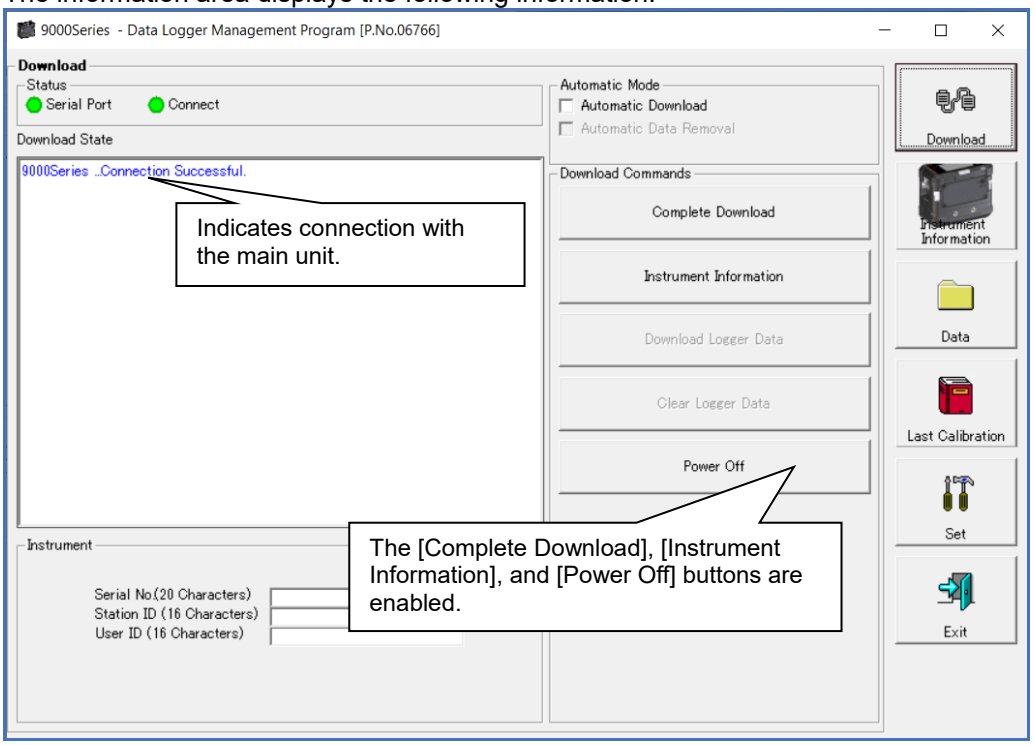
1. Start this software.
2. Connect the USB cable with the 9000 Series main unit power turned off.
3. Turn on the power for the 9000 Series main unit.

CAUTION:
Be sure to connect the USB cable before turning on the 9000 Series power.
The 9000 Series main unit does not enter communication standby if it is connected to the PC using the USB cable with the main unit power turned on.

The LCD on the 9000 Series main unit will appear as shown on the right. →
(This may be somewhat difficult to read due to the display limitations of the 9000 Series LCD.)

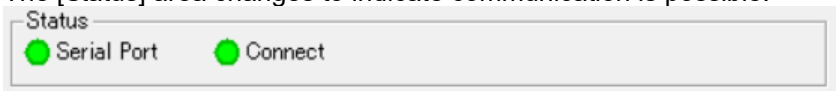


The information area displays the following information:



CAUTION:
If the details shown in the information area differ from those shown above, turn off the 9000 Series main unit power and check the USB cable connection before turning on the power once again.

The [Status] area changes to indicate communication is possible.

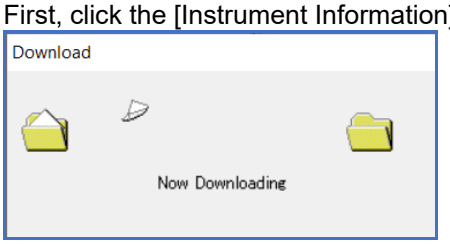


Serial Port:
Communication possible: Green The PC port is available for use.
Communication not possible: Red
Connect:
Standby: Gray
Communicating: Green

② Receive device information data

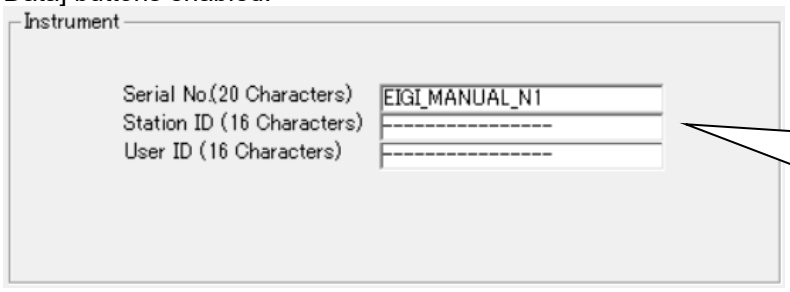
● Receive device information

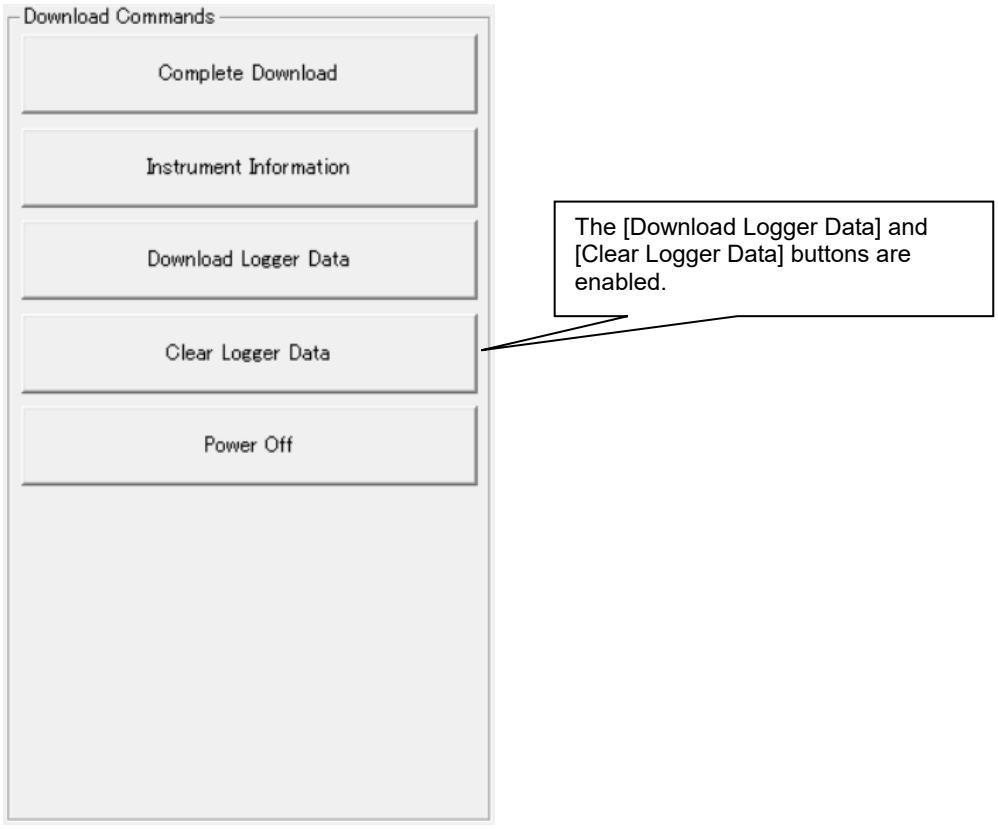
First, click the [Instrument Information] button to receive device information data.



An animated display will appear while data is being received.

Once the [Instrument Information] data has been received, the details shown in the [Instrument] area will be updated and the [Download Logger Data] and [Clear Logger Data] buttons enabled.



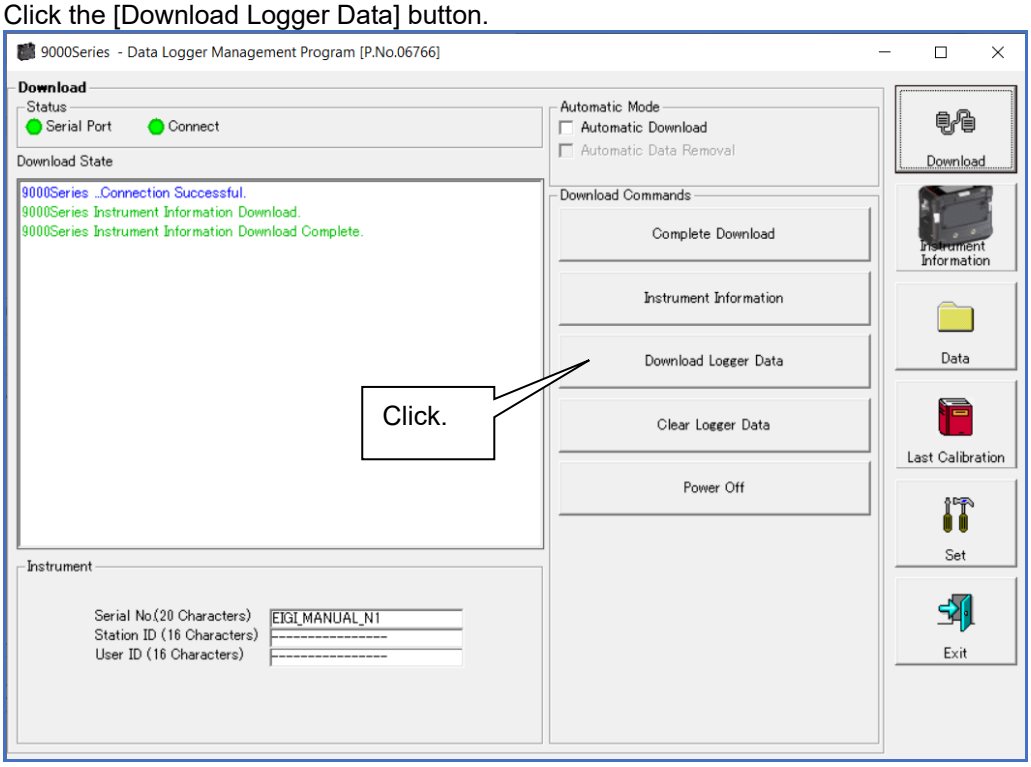


③ Download individual data

● Event data

After clicking the [Instrument Information] button and downloading the device information data, the [Download Logger Data] button is enabled.

Click the [Download Logger Data] button.



The information area displays the data receiving status.

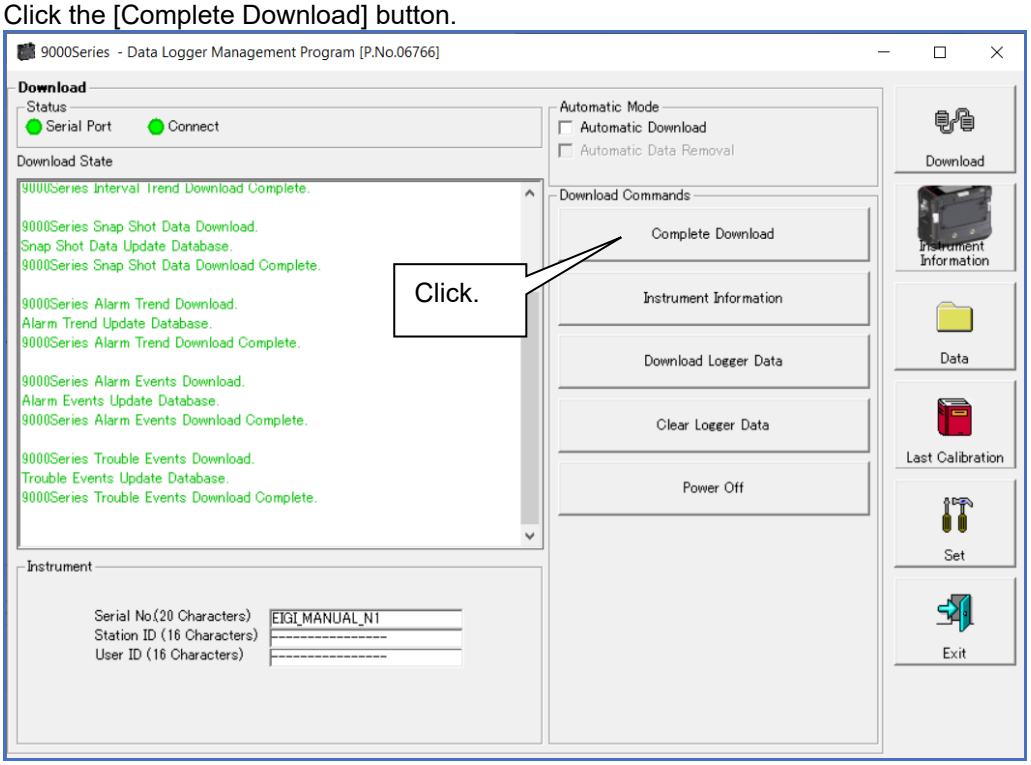
CAUTION: Other download buttons and the [Set] button are disabled while data is being downloaded, as access to other data is not permitted.

④ Download all main unit data

● All data

Clicking the [Complete Download] button downloads all data, including device information, interval trend, alarm trend, alarm event, trouble event, and shapshot data.

Click the [Complete Download] button.



The information area displays the data receiving status.

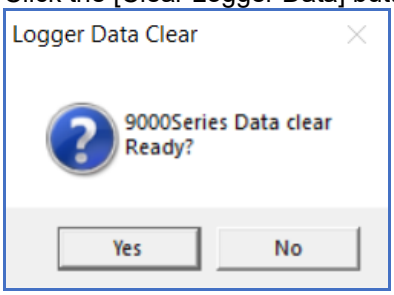
CAUTION: Other download buttons and the [Set] button are disabled while data is being downloaded, as access to other data is not permitted.

⑤ Clear 9000 Series main unit data

● Clear data

Clicking the [Clear Logger Data] button clears all data inside the 9000 Series.

Click the [Clear Logger Data] button.



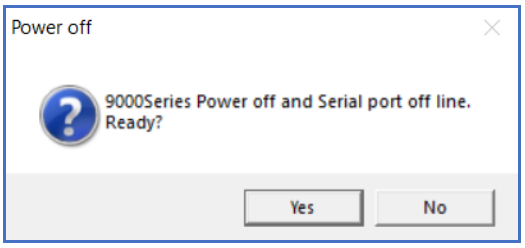
Click [Yes] to begin clearing the data.
Once cleared, data cannot be restored. Store required data before clearing.

⑥ Turn off the 9000 Series main unit power

● Power off

Clicking the [Power Off] button turns off the power for the 9000 Series main unit and resets the PC serial port.

1. Click the [Power Off] button.

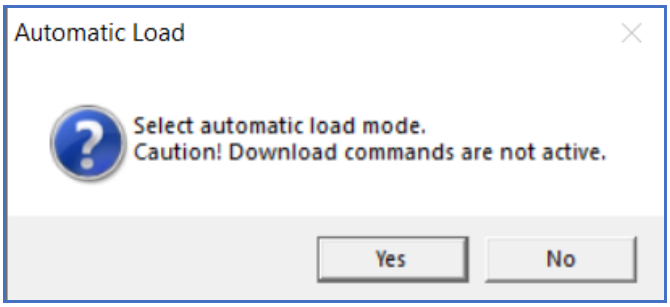


Click [Yes] to begin the process of turning off the 9000 Series main unit power and to reset the PC serial port before switching to standby to await data from the main unit.

⑦ Switch to automatic processing

● Automatic download mode

1. Select the [Automatic Download] checkbox. (if not already selected)



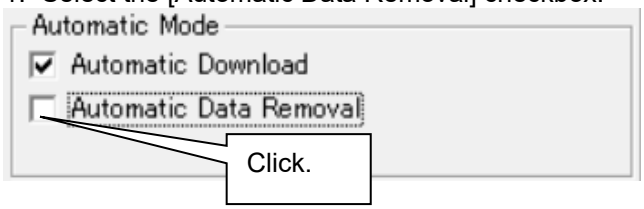
Click [Yes] to switch to automatic processing and to download data from the main unit automatically when communication is performed next.
Click [No] to cancel the mode change.

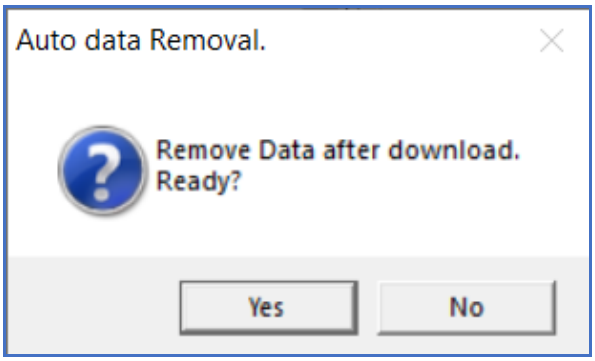
● Automatic deletion after downloading

All data is automatically downloaded to the PC when the 9000 Series main unit power is turned on. The 9000 Series main unit will then turn off.
Data cannot be downloaded manually while automatic processing is underway.

Automatic processing can be configured to automatically delete downloaded data after it is downloaded.

1. Select the [Automatic Data Removal] checkbox.



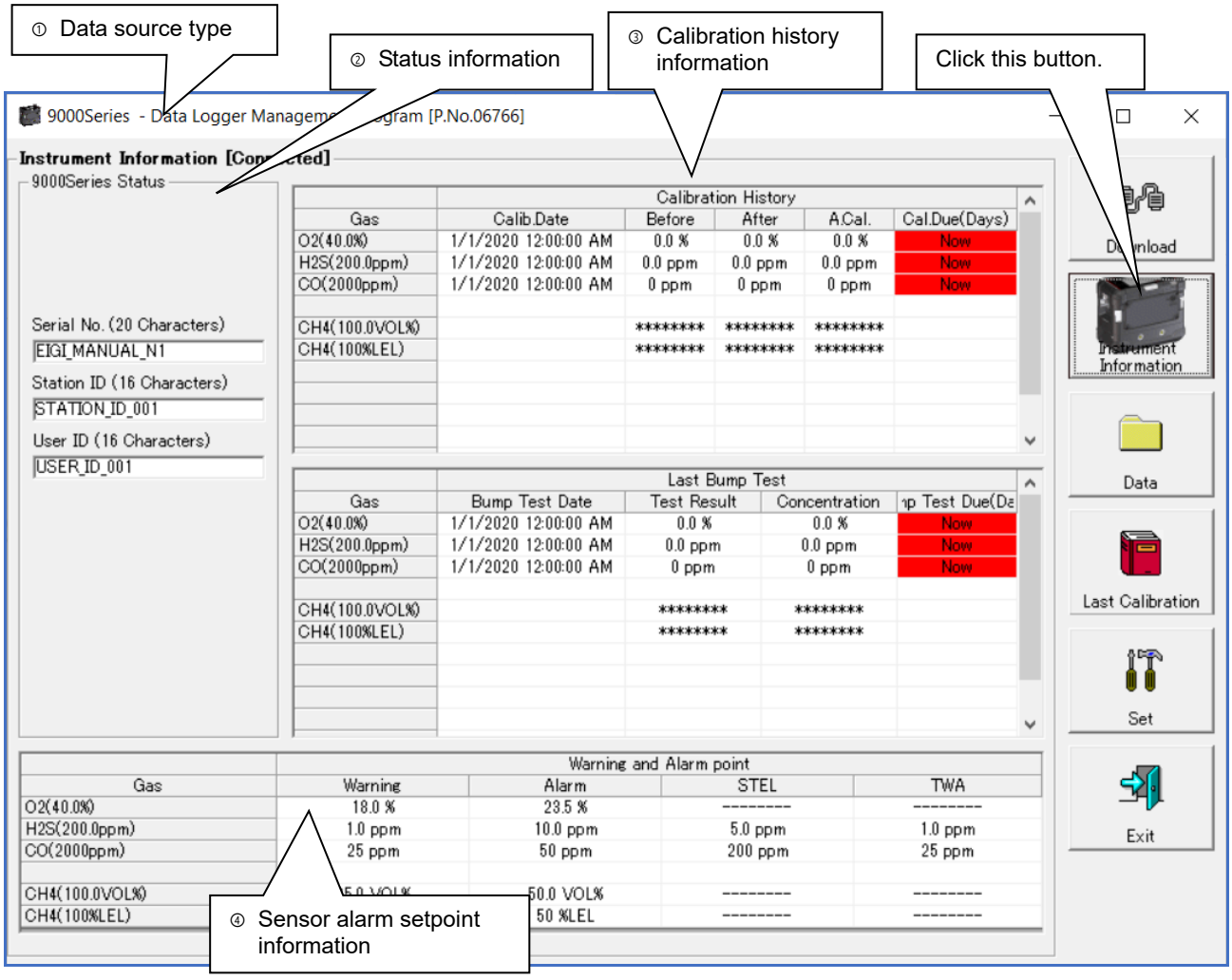


Click [Yes] to automatically delete all data on the 9000 Series after the data is downloaded.

* This reduces download times when repeating the Download → Delete → Download procedure several times.

3-2. Instrument Information screen

Click the [Instrument Information] button on the right-hand side of the screen to display the following screen.
This screen lists device information data about the connected 9000 Series main unit.

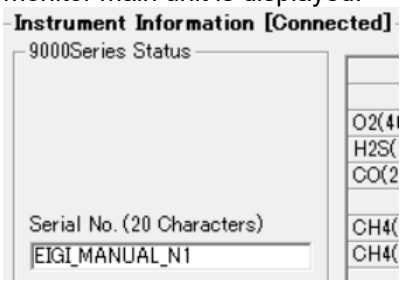


CAUTION: This screen is read-only. Data cannot be edited on this screen. → Refer to '3-6. Set screen'.
Data is not displayed if the [Instrument Information] data has not been downloaded.

① Data source type

● Data source information

The indication will be [Connected] if information about the connected multi-gas monitor main unit is displayed.

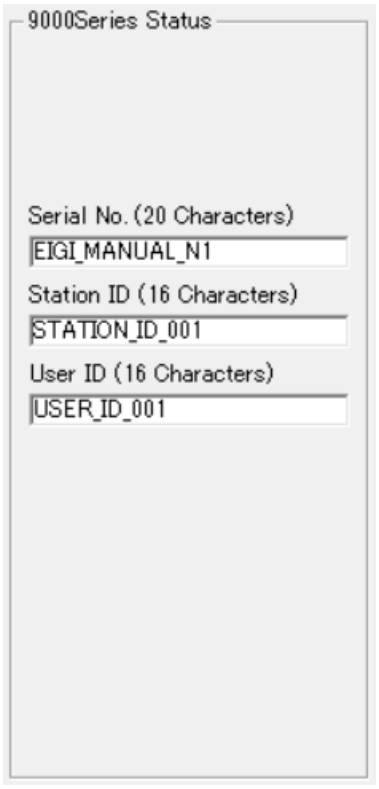


② Status information

● Information details

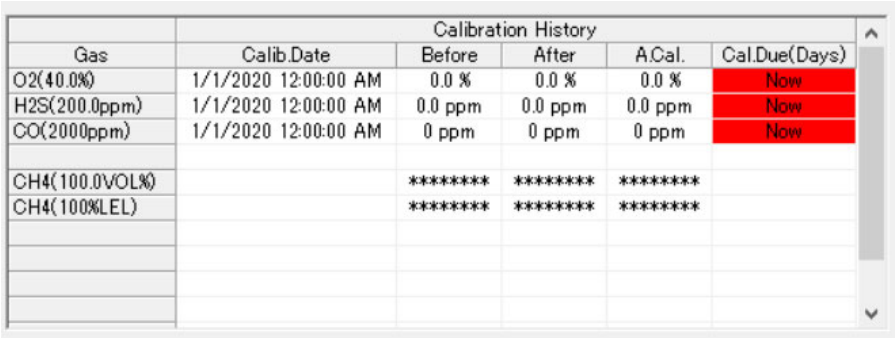
Displays the [Serial No.], [Station ID], and [User ID] stored inside the main unit.

CAUTION: These boxes are read-only and cannot be edited.



③ Adjustment history information

● Adjustment history details

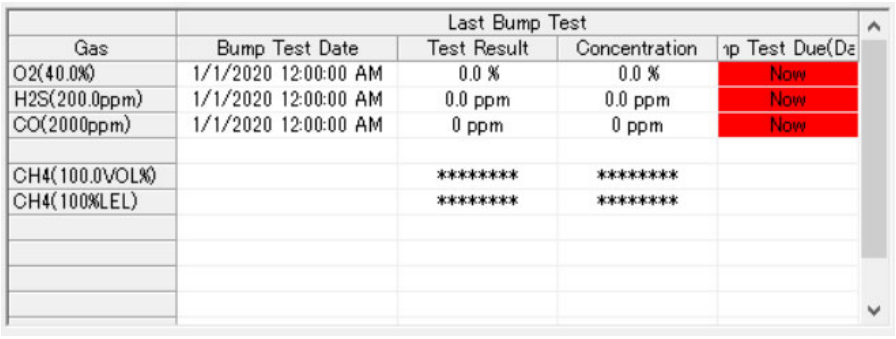


Calibration History					
Gas	Calib.Date	Before	After	A.Cal.	Cal.Due(Days)
O2(40.0%)	1/1/2020 12:00:00 AM	0.0 %	0.0 %	0.0 %	Now
H2S(200.0ppm)	1/1/2020 12:00:00 AM	0.0 ppm	0.0 ppm	0.0 ppm	Now
CO(2000ppm)	1/1/2020 12:00:00 AM	0 ppm	0 ppm	0 ppm	Now
CH4(100.0VOL%)		********	********	********	
CH4(100%LEL)		********	********	********	

Details:

Gas:	Measured gas names (full-scale units)
Calib.Date:	Date of last adjustment
Before:	Concentration before last adjustment
After:	Concentration after last adjustment/adjustment failure
A.Cal.:	Automatic adjustment concentration
Cal.Due(Days):	Remaining period in unadjusted state (A warning is displayed in red one month before adjustment is due.)

● Bump test history details



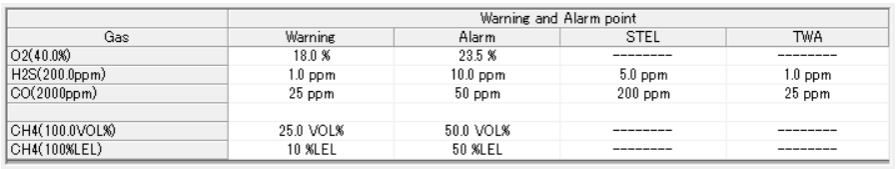
Last Bump Test				
Gas	Bump Test Date	Test Result	Concentration	ıp Test Due(Da
O2(40.0%)	1/1/2020 12:00:00 AM	0.0 %	0.0 %	Now
H2S(200.0ppm)	1/1/2020 12:00:00 AM	0.0 ppm	0.0 ppm	Now
CO(2000ppm)	1/1/2020 12:00:00 AM	0 ppm	0 ppm	Now
CH4(100.0VOL%)		********	********	
CH4(100%LEL)		********	********	

Details:

Gas:	Measured gas names (full-scale units)
Bump Test Date:	Date of last bump test
Test Result:	Concentration result for last bump test
Concentration:	Gas concentration for last bump test
Bump Test Due(Days):	Remaining period in no bump test state (A warning is displayed in red one month before the bump test is due.)

④ Sensor alarm setpoint information

● Details



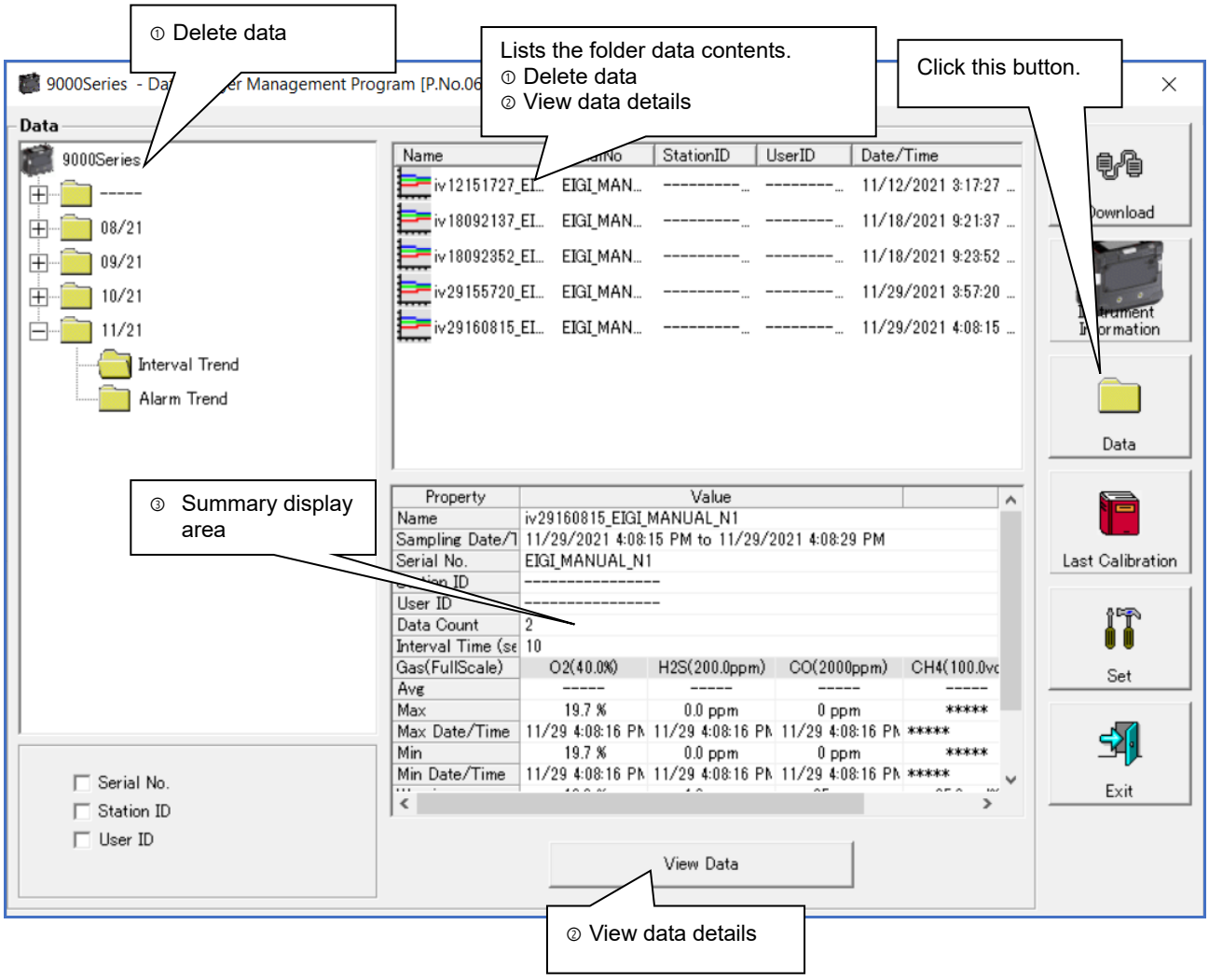
Warning and Alarm point				
Gas	Warning	Alarm	STEL	TWA
O2(40.0%)	18.0 %	23.5 %	--------	--------
H2S(200.0ppm)	1.0 ppm	10.0 ppm	5.0 ppm	1.0 ppm
CO(2000ppm)	25 ppm	50 ppm	200 ppm	25 ppm
CH4(100.0VOL%)	25.0 VOL%	50.0 VOL%	--------	--------
CH4(100%LEL)	10 %LEL	50 %LEL	--------	--------

Details:

Gas:	Measured gas names
Warning:	1st alarm setpoint concentration
Alarm:	2nd alarm setpoint concentration
STEL:	STEL alarm setpoint concentration
TWA:	TWA alarm setpoint concentration

3-3. Data screen

Click the [Data] button on the right-hand side of the screen to display the following screen. This screen lists the downloaded data.



This screen can be operated in the same way as Windows Explorer. However, the following operations are not available:

1. Renaming data
2. Moving data to other locations

The Explorer-style folders are displayed hierarchically in order of serial number, station ID, and user ID.

The folder and data names have the following formats:

Folder name: 03/11 = Data for March 2011

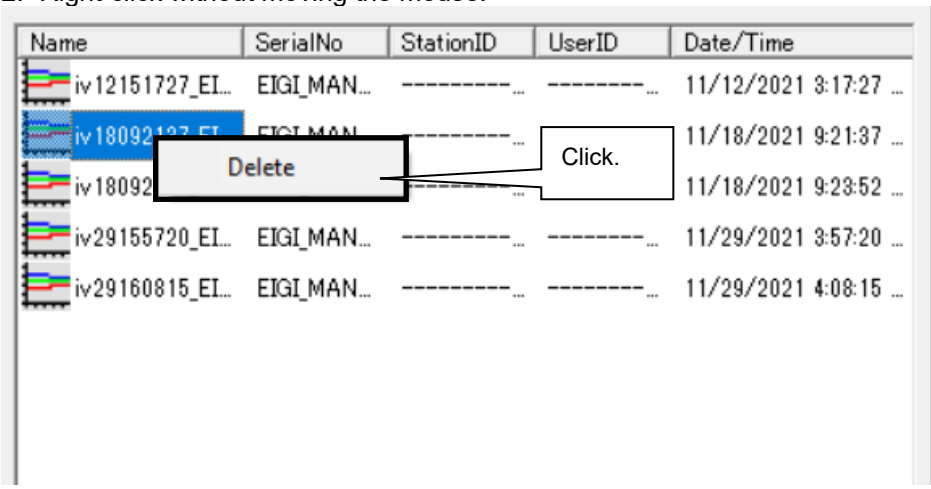
File name: 22111930_3EB = Interval trend for 11:19:30 on 22nd (date and time of logging start)
al26150419_3EB = Alarm trend for 15:04:19 on 26th (date and time of alarm occurrence)

The number of data samples allowed in each folder is limited by the PC's hard disk capacity. To maintain acceptable response times, you should back up data files. Refer to '4. Data Maintenance'.

① Delete data

● Delete

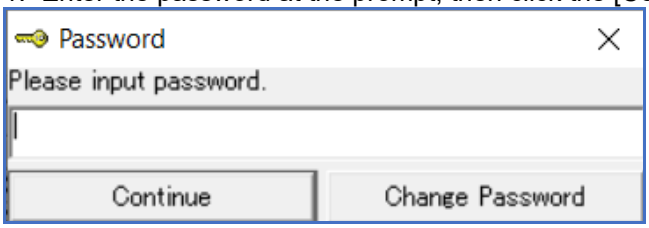
1. Click and select the data (folder) to delete.
2. Right-click without moving the mouse.



Click [Delete] on the [Delete] menu that appears.

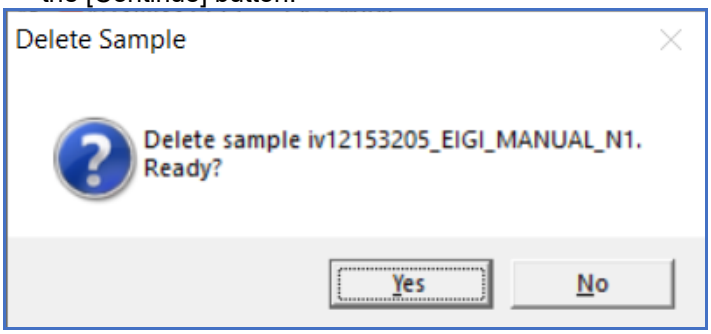
● Password input

1. Enter the password at the prompt, then click the [Continue] button.



CAUTION: Clicking [Continue] without entering a password will cancel deletion.

2. The following message will appear when you enter the correct password and click the [Continue] button:



Click the [Yes] button to delete the data.
Click the [No] button to cancel data deletion.
CAUTION: The default password immediately after installation is "Rki" (not case-sensitive). For details of how to change the password, refer to '④ Change password' in '3-5'.

② View data details

● To data details

1. Click the data the details of which you wish to view. Confirm that the summary appears in the summary display area, then click the [View Data] button.

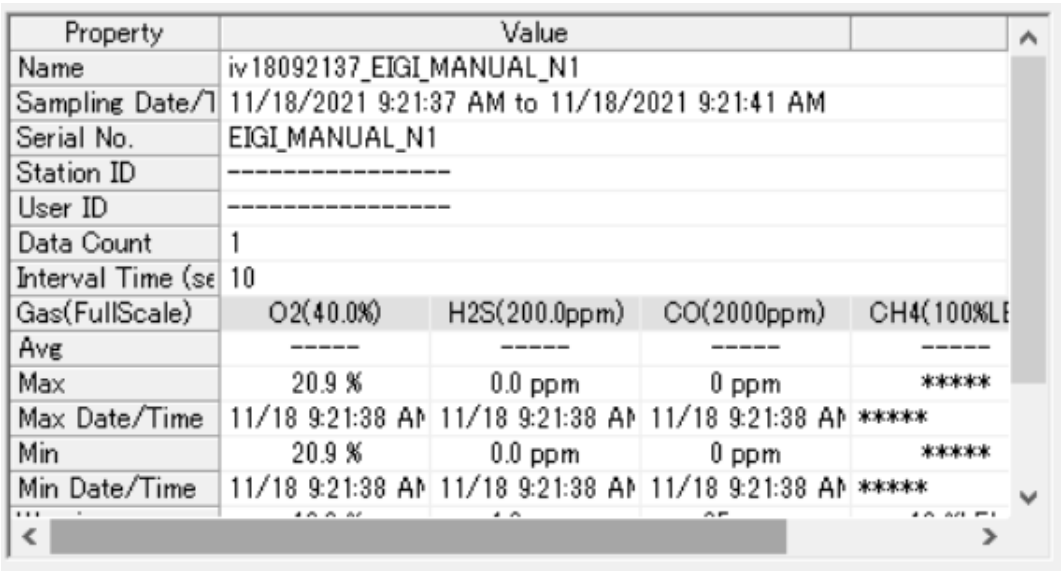
Or:

2. Double-click the data the details of which you wish to view.
   For details of how to use the Data View screen, refer to '3-4. Data View screen'.

③ Summary display area

● Details

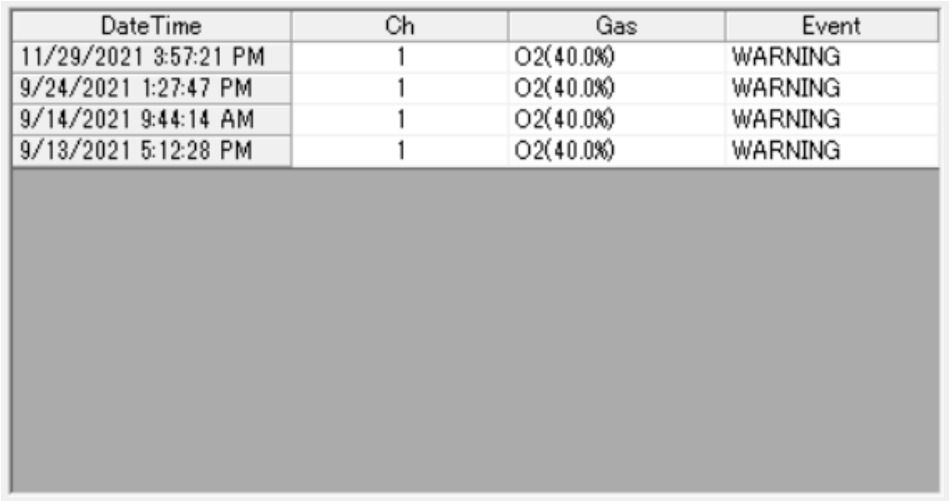
A summary of the data is displayed if the data selected is normal data.
Interval Trend



Property	Value			
Name	iv18092137_EIGI_MANUAL_N1			
Sampling Date/T	11/18/2021 9:21:37 AM to 11/18/2021 9:21:41 AM			
Serial No.	EIGI_MANUAL_N1			
Station ID	----------			
User ID	----------			
Data Count	1			
Interval Time (se	10			
Gas(FullScale)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	CH4(100%LE
Avg	-----	-----	-----	-----
Max	20.9 %	0.0 ppm	0 ppm	*****
Max Date/Time	11/18 9:21:38 AM	11/18 9:21:38 AM	11/18 9:21:38 AM	*****
Min	20.9 %	0.0 ppm	0 ppm	*****
Min Date/Time	11/18 9:21:38 AM	11/18 9:21:38 AM	11/18 9:21:38 AM	*****

Name:	Data name
Sampling Date/Time:	Date and time of measurement start and end
Serial No./Station ID/User ID:	9000 Series main unit status
Data Count:	Number of data samples
Interval Time (sec):	Sampling interval (seconds)
Gas(FullScale):	Gas (full scale)
Avg:	Gas average value
Max:	Gas data maximum value
Max Date/Time:	Date and time of maximum value detection
Min:	Gas data minimum value
Min Date/Time:	Date and time of minimum value detection
Warning:	1st alarm setpoint
Alarm:	2nd alarm setpoint
STEL:	STEL alarm setpoint
TWA:	TWA alarm setpoint

Alarm Events



DateTime	Ch	Gas	Event
11/29/2021 3:57:21 PM	1	O2(40.0%)	WARNING
9/24/2021 1:27:47 PM	1	O2(40.0%)	WARNING
9/14/2021 9:44:14 AM	1	O2(40.0%)	WARNING
9/13/2021 5:12:28 PM	1	O2(40.0%)	WARNING

DateTime:	Date and time of event occurrence
Ch:	Channel
Gas:	Gas generated
Event:	Event type

Alarm Trend

Property	Value			
Name	al29155721_EIGI_MANUAL_N1			
Alarm Date/Tim	11/29/2021 3:57:21 PM			
Serial No.	EIGI_MANUAL_N1			
Station ID	----------			
User ID	----------			
Data Count	720			
Interval Time (se	5			
Gas(FullScale)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	CH4(100.0vol%)
Value	19.7 %	0.0 ppm	0 ppm	-----
Warning	18.0 %	1.0 ppm	25 ppm	25.0 vol%
Alarm	23.5 %	10.0 ppm	50 ppm	50.0 vol%
STEL	-----	5.0 ppm	200 ppm	-----
TWA	-----	1.0 ppm	25 ppm	-----

Name: Data name
Alarm Date/Time: Date and time of alarm occurrence
Serial No./Station ID/User ID: 9000 Series main unit status
Data Count: Number of data samples
Interval Time (sec): Sampling interval
Gas(FullScale): Gas (full scale)
Value: Concentration at time of alarm occurrence
Warning: 1st alarm setpoint
Alarm: 2nd alarm setpoint
STEL: STEL alarm setpoint
TWA: TWA alarm setpoint

Adjustment History

DateTime	Gas	Before	After
9/24/2021 1:22:28 PM	O2(40.0%)	21.2 %	0.3 %
9/24/2021 1:22:28 PM	H2S(200.0ppm)	-----	-----
9/24/2021 1:22:28 PM	CO(2000ppm)	0 ppm	-----
	----(---)	-----	-----
9/24/2021 1:22:28 PM	CH4(100.0vol%)	-----	-----
9/24/2021 1:22:28 PM	CH4(100%LEL)	0 %LEL	-----
	----(---)	-----	-----
9/24/2021 10:53:12 AM	O2(40.0%)	17.3 %	12.0 %
9/24/2021 10:53:12 AM	H2S(200.0ppm)	-----	-----
9/24/2021 10:53:12 AM	CO(2000ppm)	0 ppm	-----
	----(---)	-----	-----
9/24/2021 10:53:12 AM	CH4(100.0vol%)	-----	-----
9/24/2021 10:53:12 AM	CH4(100%LEL)	1 %LEL	-----
...	Total	6	Datas

DateTime: Date and time of event occurrence
Gas: Gas
Before: Concentration before adjustment
After: Concentration after adjustment

Trouble Events

DateTime	Ch	Gas/Body	Event
11/29/2021 3:57:33 PM	-	Body	Fail(FLOW)
11/29/2021 3:56:15 PM	-	Body	Fail(FLOW)
11/18/2021 9:24:06 AM	-	Body	Fail(FLOW)
11/18/2021 9:21:28 AM	6	CH4(100.0vol%)	Fail(iSens)
11/18/2021 9:21:28 AM	5	CH4(100%LEL)	Fail(iSens)
10/28/2021 9:21:49 AM	-	Body	Fail(FLOW)
10/26/2021 10:02:28 AM	-	Body	Fail(FLOW)
9/24/2021 1:22:27 PM	6	CH4(100%LEL)	Fail(Span)
...	Total	28 Datas	

DateTime: Date and time of event occurrence
Ch: Channel
Gas/Body: Gas generated or 9000 Series main unit
Event: Event type

Bump Test

DateTime	Gas	Test Result	Concentration	Judge
9/24/2021 10:52:03 A	O2(40.0%)	18.8 %	12.0 %	FAIL
9/24/2021 10:52:03 A	H2S(200.0ppm	-----	-----	-----
9/24/2021 10:52:03 A	CO(2000ppm)	0 ppm	50 ppm	FAIL
	----(---)	-----	-----	
9/24/2021 10:52:03 A	CH4(100.0vol%	-----	-----	-----
9/24/2021 10:52:03 A	CH4(100%LEL)	1 %LEL	50 %LEL	FAIL
9/24/2021 10:42:43 A	O2(40.0%)	21.0 %	12.0 %	FAIL
9/24/2021 10:42:43 A	H2S(200.0ppm	-----	-----	-----
9/24/2021 10:42:43 A	CO(2000ppm)	0 ppm	50 ppm	FAIL
	----(---)	-----	-----	
9/24/2021 10:42:43 A	CH4(100.0vol%	-----	-----	-----
9/24/2021 10:42:43 A	CH4(100%LEL)	1 %LEL	50 %LEL	FAIL
...	Total	3	Datas	

DateTime: Date and time of event occurrence
Gas: Gas
Test Result: Test result concentration
Concentration: Calibration gas concentration
Judge: Test assessment

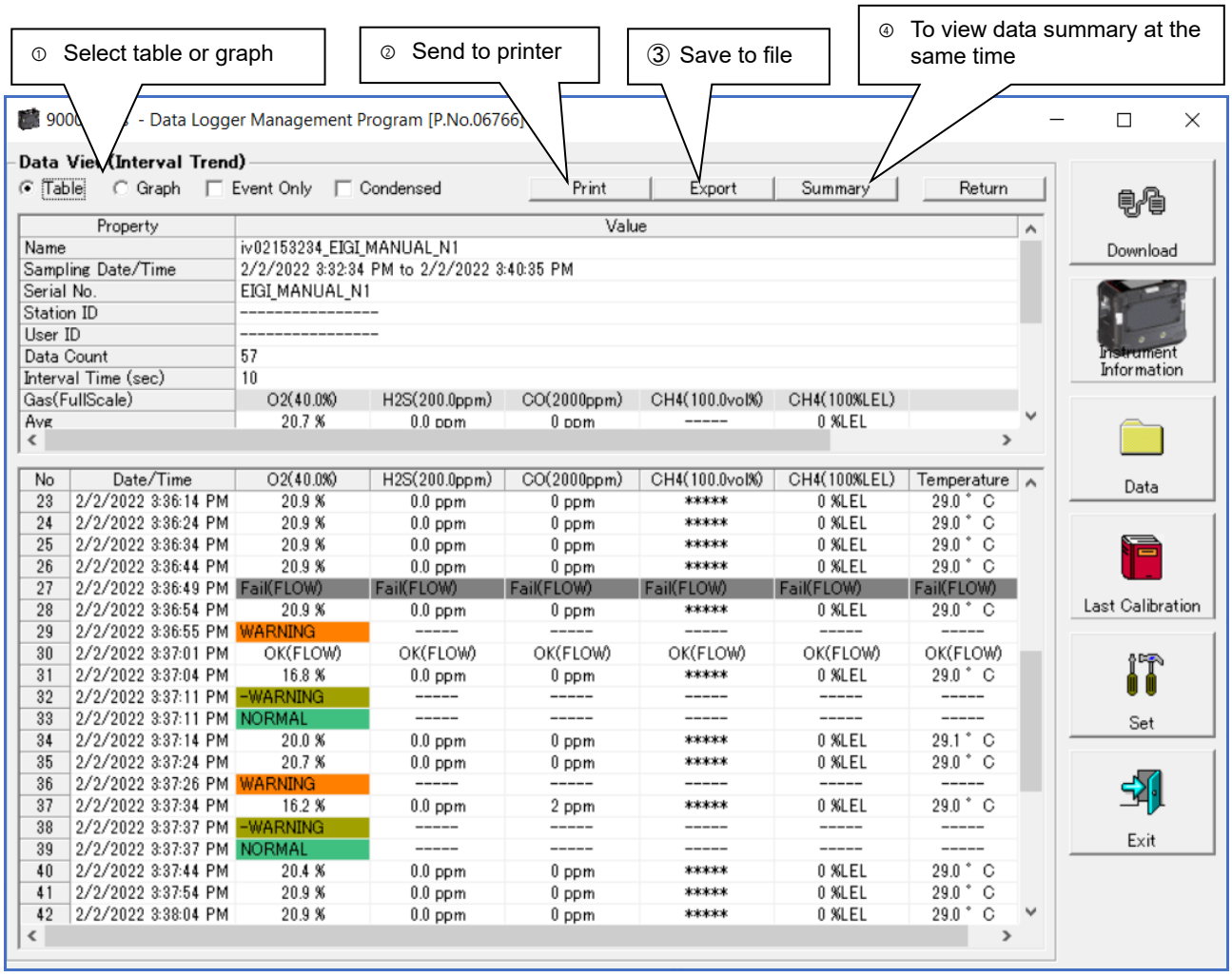
Normal Measurement Snap Log

Property	Value			
Name	ss02140739_EIGI_MANUAL_N1			
Sampling Date/T	2/2/2022 2:07:39 PM			
Serial No.	EIGI_MANUAL_N1			
Station ID	----------			
User ID	----------			
-----	-----			
-----	-----			
Gas(FullScale)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	CH4(100.0vol%)
Concentration	19.8 %	0.0 ppm	0 ppm	-----

Name: Data name
Sampling Date/Time: Time recorded
Serial No./Station ID/User ID: 9000 Series main unit status
Gas(FullScale): Gas (full scale)
Concentration: Concentration recorded

3-4. Data View screen

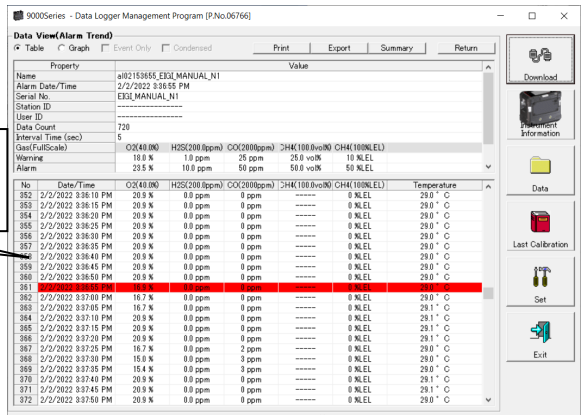
This screen displays data details in table and graph format.



[☐ Event Only]: Displays event data only.
[☐ Condensed]: Displays only fluctuating sample data.
CAUTION: No graph will be drawn unless there are at least five samples.

The [Alarm Trend] data table highlights the locations of active alarms in red.

For WARNING, ALARM, and OVER



Separate window for WARNING, ALARM, and OVER
Click the [Return] button to exit the window.

The mouse cursor will appear as follows when hovered over [WARNING], [ALARM], or [OVER] event data. Click on the cell here to search for corresponding event data and to display the data (if any) in a separate window.

① Select table or graph

● Select graph

1. Select [Graph] of the [Table] and [Graph] radio buttons at the top left of the screen.

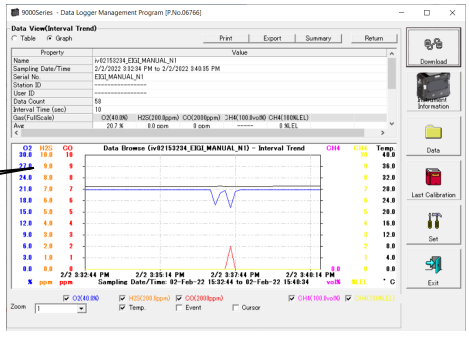
Various operations are available using the checkboxes and combo boxes at the bottom of the screen.

Upper checkboxes (gas names):	Display or hide the corresponding gas data.
[Zoom] combo box:	Specify a horizontal axis scale factor appropriate for the number of samples.
[Event] checkbox:	Displays event information markers for alarms and other events.
[Cursor] checkbox:	Displays the cursor on the graph.

CAUTION: The maximum value on the vertical axis of the graph is adjusted automatically based on the following formula. If the maximum value for data with no events is “x” and the full scale is 10 or greater:
Ymax = {int (x / 10) + 1} × 10, and for full scale under 10: Ymax = {int (x) + 1}
“int”: Decimal values are discarded.

CAUTION: The graph will not be drawn unless there are at least five normal concentration data samples. Data consisting only of events cannot be displayed in graph form because they do not contain concentration information.
The mouse cursor will appear as follows when hovered over [WARNING], [ALARM], or [OVER] event data. Click here to search for corresponding event data and to display the data (if any) in a separate window.

For WARNING, ALARM, and OVER



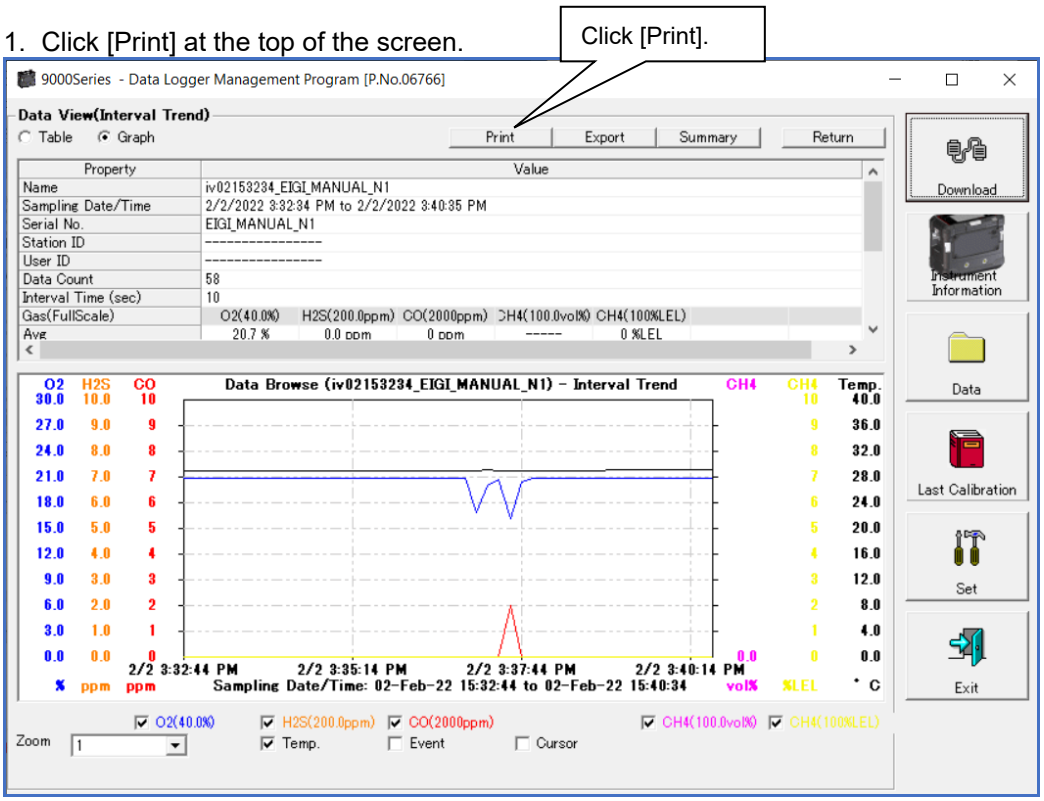
Separate window for WARNING, ALARM, and OVER
Click the [Return] button to exit the window.

② Send to printer

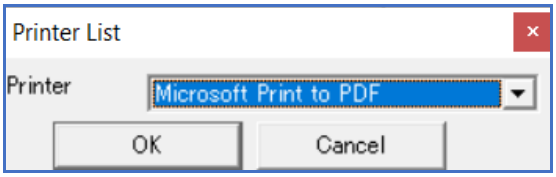
● Print

Details currently displayed on the Data View screen can be sent to the printer to be printed.

1. Click [Print] at the top of the screen.

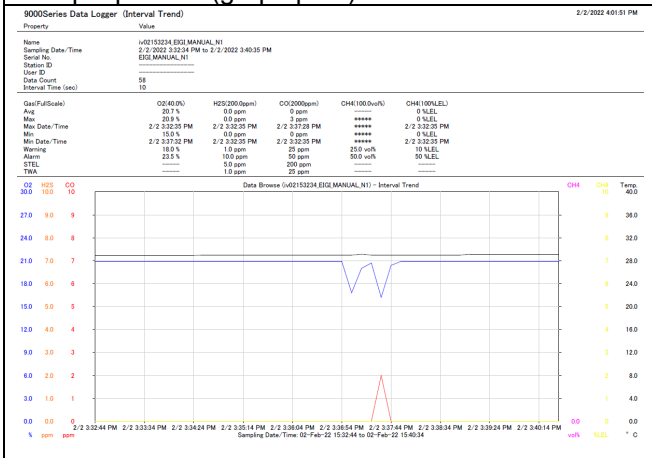


The printer selection window appears. Select the desired printer and click the [OK] button.



Click the [OK] button to begin printing.
Click the [Cancel] button to return to the Data View screen without printing.

Sample printout (graph print)



9000Series Data Logger (Interval Trend) 2/2/2022 4:01:51 PM

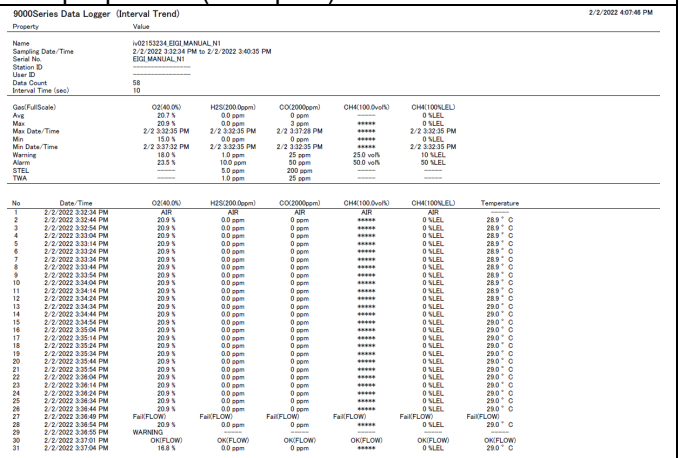
Property	Value
Name	iv02153234.EIGI_MANUAL_N1
Sampling Date/Time	2/2/2022 3:32:34 PM to 2/2/2022 3:40:35 PM
Serial No.	EIGI_MANUAL_N1
Station ID	----------
User ID	----------
Data Count	58
Interval Time (sec)	10

Gas(FullScale)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	CH4(100.0vol%)	CH4(100%LEL)
Avg	20.7 %	0.0 ppm	0 ppm	------	0 %LEL
Max	20.9 %	0.0 ppm	3 ppm	*****	0 %LEL
Max Date/Time	2/2 3:32:35 PM	2/2 3:32:35 PM	2/2 3:37:28 PM	*****	2/2 3:32:35 PM
Min	15.0 %	0.0 ppm	0 ppm	*****	0 %LEL
Min Date/Time	2/2 3:37:32 PM	2/2 3:32:35 PM	2/2 3:32:35 PM	*****	2/2 3:32:35 PM
Warning	18.0 %	1.0 ppm	25 ppm	25.0 vol%	10 %LEL
Alarm	23.5 %	10.0 ppm	50 ppm	50.0 vol%	50 %LEL
STEL	------	5.0 ppm	200 ppm	------	------
TWA	------	1.0 ppm	25 ppm	------	------

Data Browse (\\v02153234.EIGI_MANUAL_N1) - Interval Trend

Sampling Date/Time: 02-Feb-22 15:32:44 to 02-Feb-22 15:40:34

Sample printout (table print)



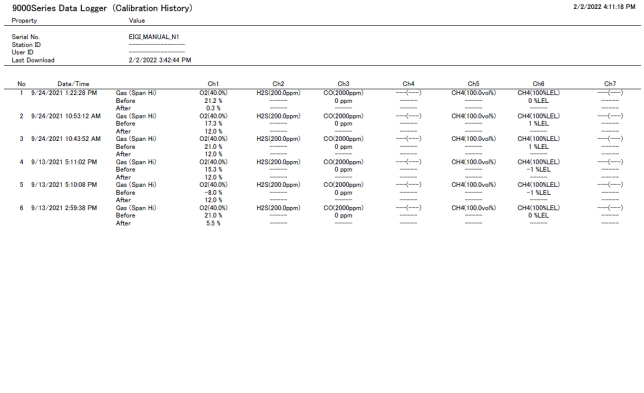
9000Series Data Logger (Interval Trend) 2/2/2022 4:07:46 PM

Property	Value
Name	iv02153234.EIGI_MANUAL_N1
Sampling Date/Time	2/2/2022 3:32:34 PM to 2/2/2022 3:40:35 PM
Serial No.	EIGI_MANUAL_N1
Station ID	----------
User ID	----------
Data Count	58
Interval Time (sec)	10

Gas(FullScale)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	CH4(100.0vol%)	CH4(100%LEL)
Avg	20.7 %	0.0 ppm	0 ppm	------	0 %LEL
Max	20.9 %	0.0 ppm	3 ppm	*****	0 %LEL
Max Date/Time	2/2 3:32:35 PM	2/2 3:32:35 PM	2/2 3:37:28 PM	*****	2/2 3:32:35 PM
Min	15.0 %	0.0 ppm	0 ppm	*****	0 %LEL
Min Date/Time	2/2 3:37:32 PM	2/2 3:32:35 PM	2/2 3:32:35 PM	*****	2/2 3:32:35 PM
Warning	18.0 %	1.0 ppm	25 ppm	25.0 vol%	10 %LEL
Alarm	23.5 %	10.0 ppm	50 ppm	50.0 vol%	50 %LEL
STEL	------	5.0 ppm	200 ppm	------	------
TWA	------	1.0 ppm	25 ppm	------	------

No	Date/Time	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	CH4(100.0vol%)	CH4(100%LEL)	Temperature
1	2/2/2022 3:32:34 PM	AIR	AIR	AIR	AIR	AIR	------
2	2/2/2022 3:32:44 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
3	2/2/2022 3:32:54 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
4	2/2/2022 3:33:04 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
5	2/2/2022 3:33:14 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
6	2/2/2022 3:33:24 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
7	2/2/2022 3:33:34 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
8	2/2/2022 3:33:44 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
9	2/2/2022 3:33:54 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
10	2/2/2022 3:34:04 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
11	2/2/2022 3:34:14 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
12	2/2/2022 3:34:24 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	28.9 ° C
13	2/2/2022 3:34:34 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
14	2/2/2022 3:34:44 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
15	2/2/2022 3:34:54 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
16	2/2/2022 3:35:04 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
17	2/2/2022 3:35:14 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
18	2/2/2022 3:35:24 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
19	2/2/2022 3:35:34 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
20	2/2/2022 3:35:44 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
21	2/2/2022 3:35:54 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
22	2/2/2022 3:36:04 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
23	2/2/2022 3:36:14 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
24	2/2/2022 3:36:24 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
25	2/2/2022 3:36:34 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
26	2/2/2022 3:36:44 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
27	2/2/2022 3:36:49 PM	Fail(FLOW)	Fail(FLOW)	Fail(FLOW)	Fail(FLOW)	Fail(FLOW)	Fail(FLOW)
28	2/2/2022 3:36:54 PM	20.9 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C
29	2/2/2022 3:36:55 PM	WARNING	------	------	------	------	------
30	2/2/2022 3:37:01 PM	OK(FLOW)	OK(FLOW)	OK(FLOW)	OK(FLOW)	OK(FLOW)	OK(FLOW)
31	2/2/2022 3:37:04 PM	18.8 %	0.0 ppm	0 ppm	*****	0 %LEL	29.0 ° C

Sample printout (adjustment history)

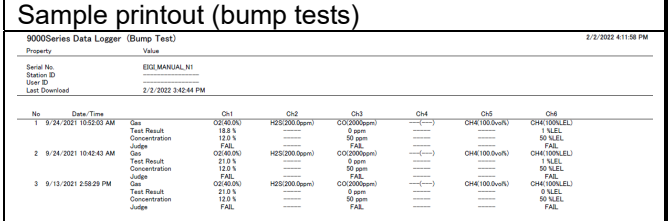


9000Series Data Logger (Calibration History) 2/2/2022 4:11:18 PM

Property	Value
Serial No.	EIGI_MANUAL_N1
Station ID	----------
User ID	----------
Last Download	2/2/2022 3:42:44 PM

No	Date/Time		Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	Ch7
1	9/24/2021 1:22:28 PM	Gas (Span Hi)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	---(---)	CH4(100.0vol%)	CH4(100%LEL)	---(---)
		Before	21.2 %	------	0 ppm	------	------	0 %LEL	------
		After	0.3 %	------	------	------	------	------	------
2	9/24/2021 10:53:12 AM	Gas (Span Hi)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	---(---)	CH4(100.0vol%)	CH4(100%LEL)	---(---)
		Before	17.3 %	------	0 ppm	------	------	1 %LEL	------
		After	12.0 %	------	------	------	------	------	------
3	9/24/2021 10:43:52 AM	Gas (Span Hi)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	---(---)	CH4(100.0vol%)	CH4(100%LEL)	---(---)
		Before	21.0 %	------	0 ppm	------	------	1 %LEL	------
		After	12.0 %	------	------	------	------	------	------
4	9/13/2021 5:11:02 PM	Gas (Span Hi)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	---(---)	CH4(100.0vol%)	CH4(100%LEL)	---(---)
		Before	15.3 %	------	0 ppm	------	------	-1 %LEL	------
		After	12.0 %	------	------	------	------	------	------
5	9/13/2021 5:10:08 PM	Gas (Span Hi)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	---(---)	CH4(100.0vol%)	CH4(100%LEL)	---(---)
		Before	-8.0 %	------	0 ppm	------	------	-1 %LEL	------
		After	12.0 %	------	------	------	------	------	------
6	9/13/2021 2:59:38 PM	Gas (Span Hi)	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	---(---)	CH4(100.0vol%)	CH4(100%LEL)	---(---)
		Before	21.0 %	------	0 ppm	------	------	0 %LEL	------
		After	5.5 %	------	------	------	------	------	------

Sample printout (bump tests)

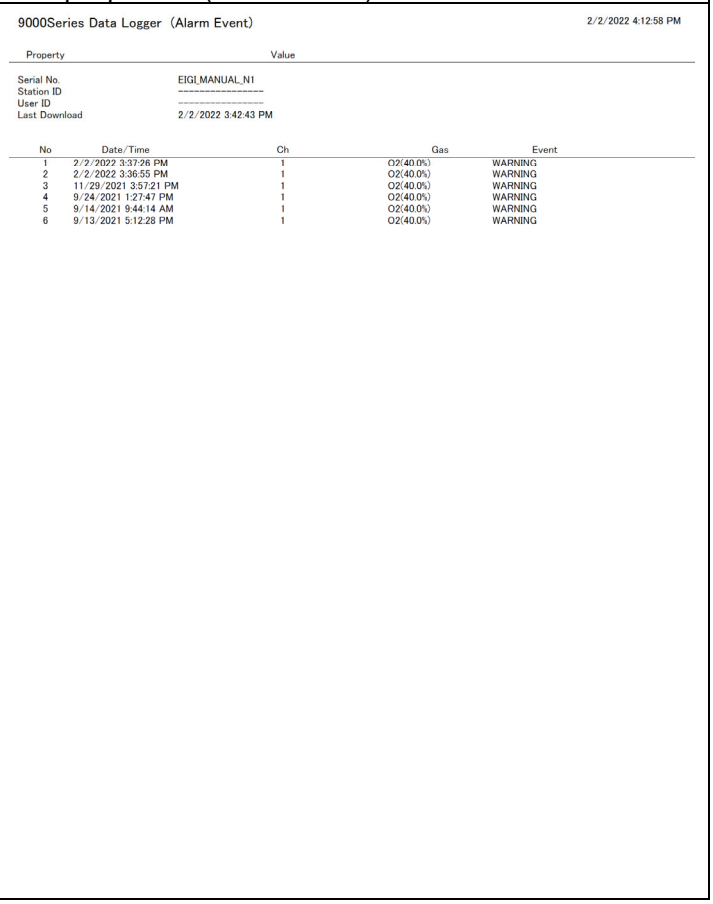


9000Series Data Logger (Bump Test) 2/2/2022 4:11:58 PM

Property	Value
Serial No.	EIGI_MANUAL_N1
Station ID	----------
User ID	----------
Last Download	2/2/2022 3:42:44 PM

No	Date/Time		Ch1	Ch2	Ch3	Ch4	Ch5	Ch6
1	9/24/2021 10:52:03 AM	Gas	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	---(---)	CH4(100.0vol%)	CH4(100%LEL)
		Test Result	18.8 %	------	0 ppm	------	------	1 %LEL
		Concentration	12.0 %	------	50 ppm	------	------	50 %LEL
		Judge	FAIL	------	FAIL	------	------	FAIL
2	9/24/2021 10:42:43 AM	Gas	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	---(---)	CH4(100.0vol%)	CH4(100%LEL)
		Test Result	21.0 %	------	0 ppm	------	------	1 %LEL
		Concentration	12.0 %	------	50 ppm	------	------	50 %LEL
		Judge	FAIL	------	FAIL	------	------	FAIL
3	9/13/2021 2:58:29 PM	Gas	O2(40.0%)	H2S(200.0ppm)	CO(2000ppm)	---(---)	CH4(100.0vol%)	CH4(100%LEL)
		Test Result	21.0 %	------	0 ppm	------	------	0 %LEL
		Concentration	12.0 %	------	50 ppm	------	------	50 %LEL
		Judge	FAIL	------	FAIL	------	------	FAIL

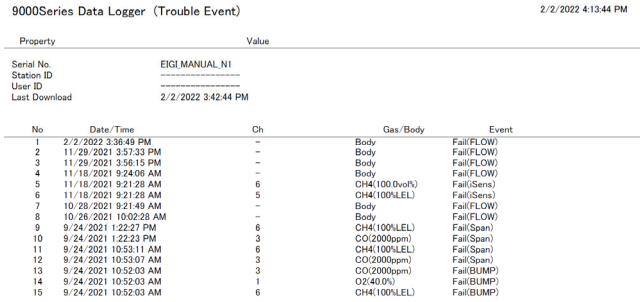
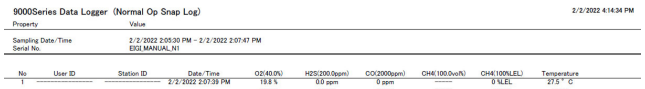
Sample printout (alarm events)



9000Series Data Logger (Alarm Event) 2/2/2022 4:12:58 PM

Property	Value
Serial No.	EIGI_MANUAL_N1
Station ID	----------
User ID	----------
Last Download	2/2/2022 3:42:43 PM

No	Date/Time	Ch	Gas	Event
1	2/2/2022 3:37:26 PM	1	O2(40.0%)	WARNING
2	2/2/2022 3:36:55 PM	1	O2(40.0%)	WARNING
3	11/29/2021 3:57:21 PM	1	O2(40.0%)	WARNING
4	9/24/2021 1:27:47 PM	1	O2(40.0%)	WARNING
5	9/14/2021 9:44:14 AM	1	O2(40.0%)	WARNING
6	9/13/2021 5:12:28 PM	1	O2(40.0%)	WARNING

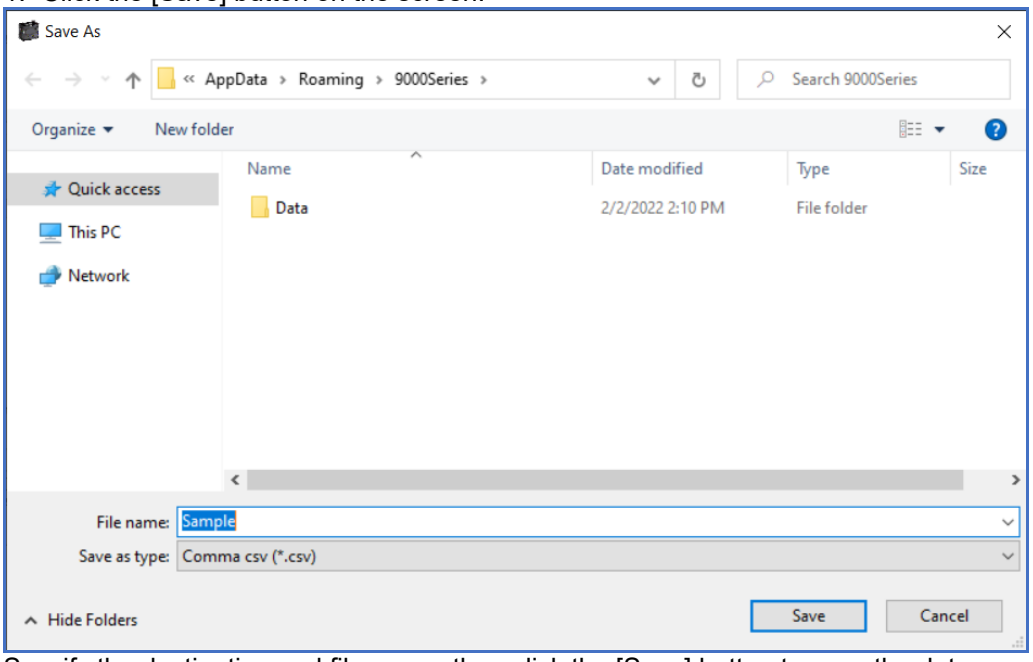
Sample printout (trouble events)	Sample printout (normal measurement snap)
	

Printer setup precautions
① The detailed printer settings vary depending on the printer used. Refer to the printer instruction manual. ② This program does not allow the print area to be specified when printing. This means it is not possible to select and print only a certain part of the data view. ③ The setting for the number of copies can be edited only on printers that allow this. Changes in the settings made here will also apply to other applications subsequently used. (For example, if two copies were set here, two copies may also be printed out when using other applications.) When printing from other applications after changing the printer settings for this program, check the print settings for that application before printing.

③ Save to file

● Save

1. Click the [Save] button on the screen.



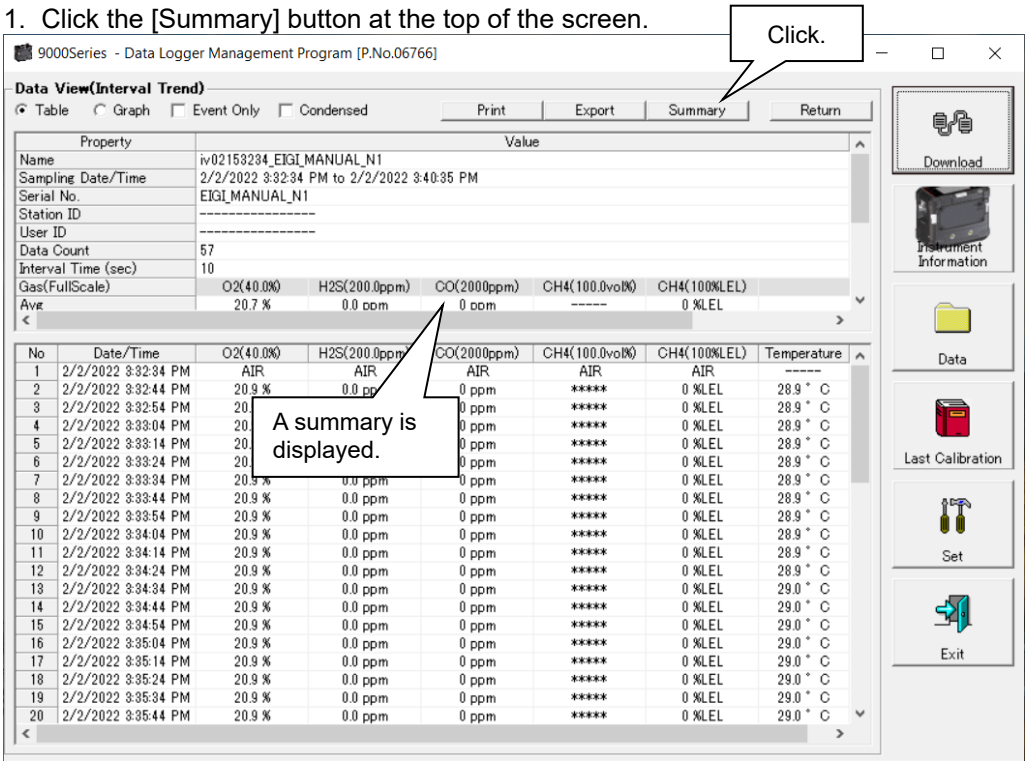
Specify the destination and file name, then click the [Save] button to save the data.
Click the [Cancel] button to cancel saving.

CAUTION: If a table is displayed, the table contents will be saved in CSV format.
If a graph is displayed, the graph will be saved as a bitmap.

④ To view data summary at the same time

● Summary display

1. Click the [Summary] button at the top of the screen.

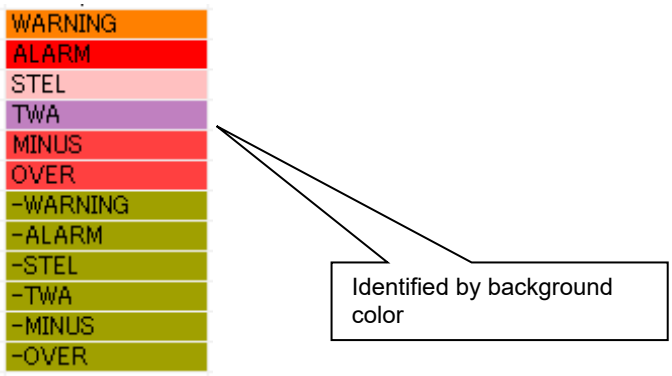


Clicking the [Summary] button while the summary is displayed hides the summary display.

⑤ Table details

● Event colors

The concentration display cells for each gas in the table have different colored backgrounds based on the type of event that occurred.

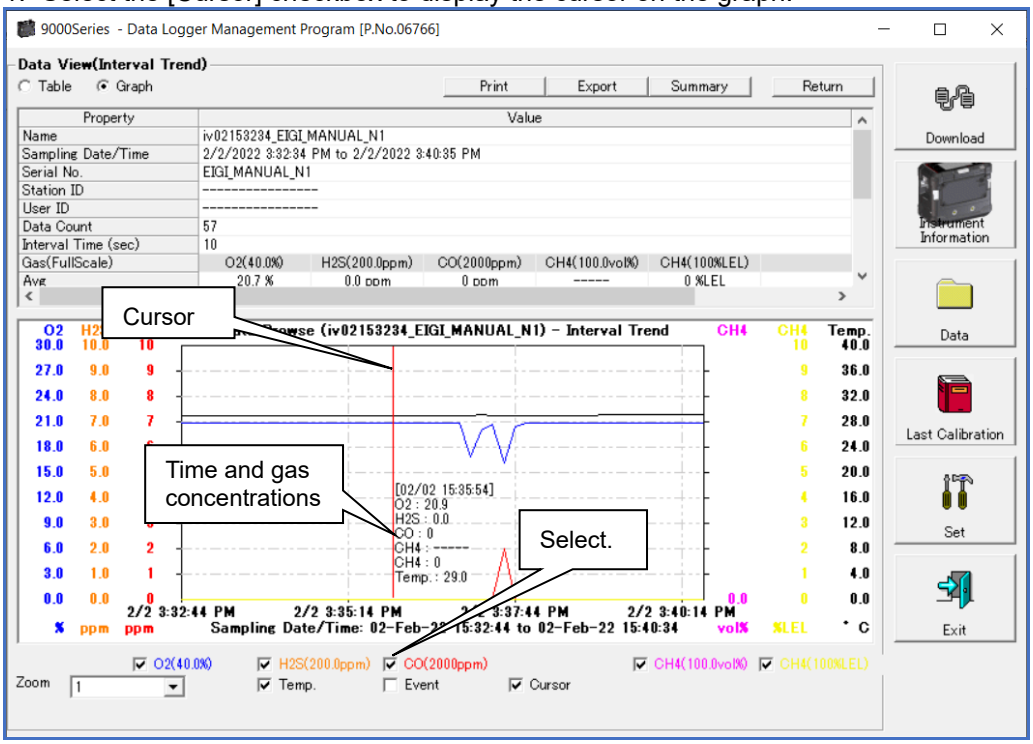


Fail:	Gray	Trouble
WARNING:	Orange	1st alarm
ALARM:	Red:	2nd alarm
TWA:	Bright purple	TWA alarm
STEL:	Pink	STEL alarm
Normal:	Dark green	Restored from above statuses
OVER:	Bright red	Full-scale over
MINUS:	Bright red	Minus-scale over

⑥ Graph details

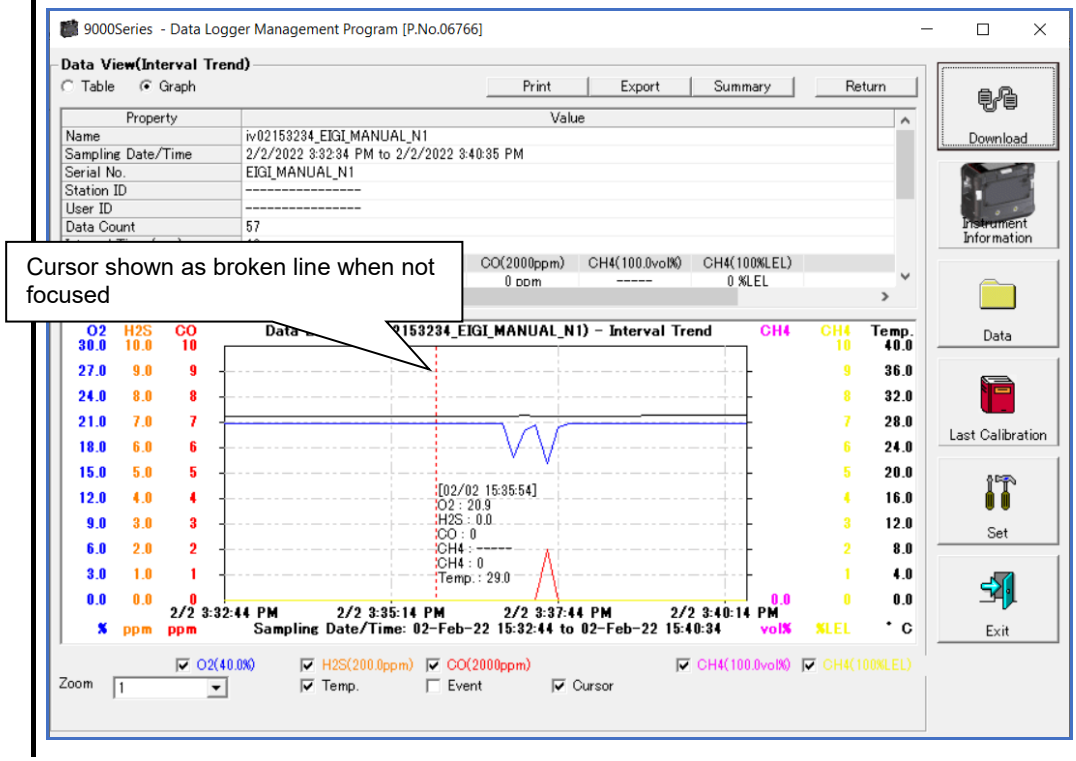
● Cursor

1. Select the [Cursor] checkbox to display the cursor on the graph.



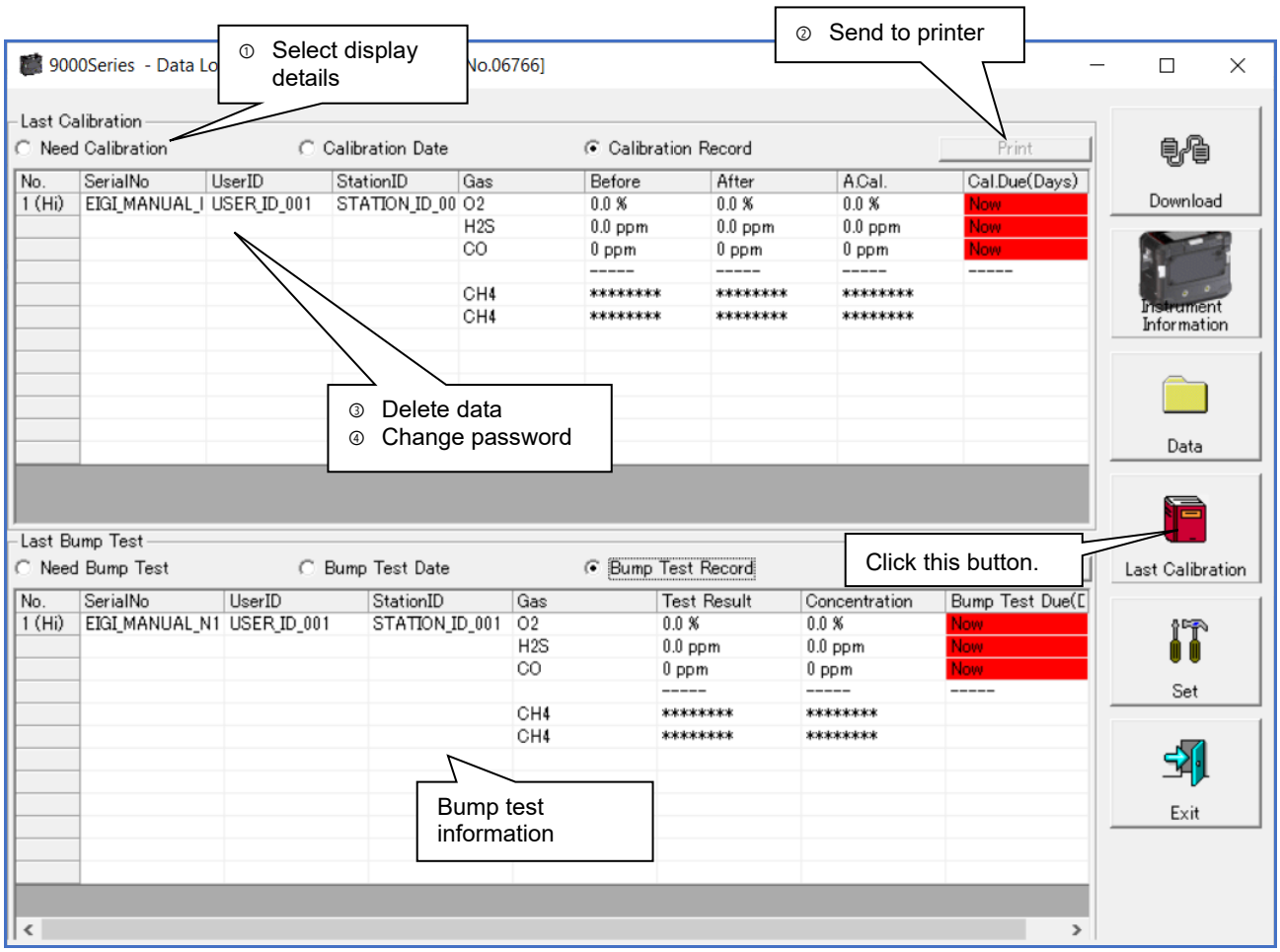
Use the ← and → keys to move the cursor left and right. Use the ↑ and ↓ keys to move the time and concentration display up and down.
Hold down the Shift key at the same time for faster cursor/display movement.

CAUTION: The cursor cannot be moved if a window for another program is opened and the focus is not currently on the graph area. In this case, the cursor appears as a broken line. To return the focus, click anywhere within the graph area.



3-5. Last Calibration screen

This checks for the adjustment expiration of previously downloaded main unit data. Bump tests are also displayed in the same way.

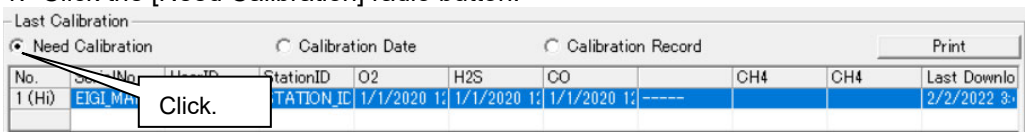


CAUTION: The table details are read-only and cannot be edited.

① Select display details

● Expired data

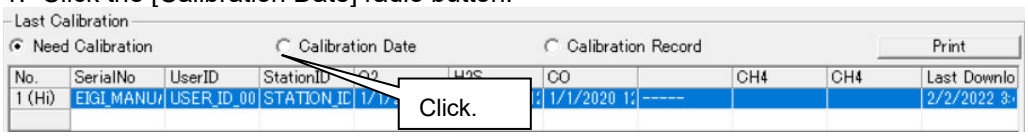
1. Click the [Need Calibration] radio button.



Displays adjustment data for previously connected 9000 Series main units (for which device information data has been downloaded) that have expired.

● List display

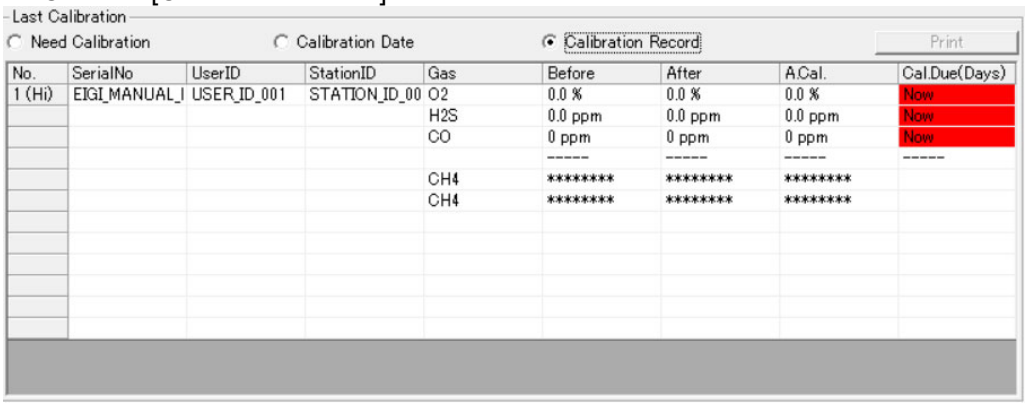
1. Click the [Calibration Date] radio button.



Data is listed for previously connected 9000 Series main units. (Only the most recent data is listed for units with the same serial number, user ID, and station ID.)

● Detailed display

1. Click the [Calibration Record] radio button.



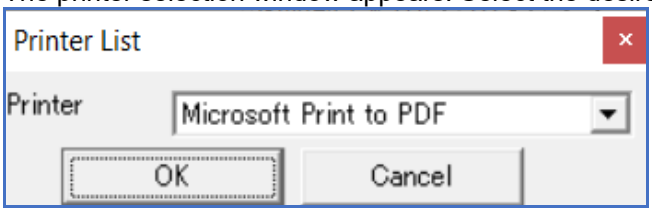
Data is listed for previously connected 9000 Series main units in the same format as the Instrument Information screen.

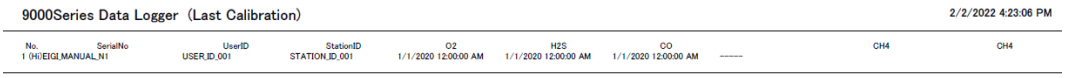
For more information on display contents, refer to '③ Adjustment history information' in '3-2. Instrument Information screen'.

② Send to printer

● Print

The most recent adjustment dates can be printed after selecting the [Need Calibration] or [Calibration Date] radio button.
The printer selection window appears. Select the desired printer and click the [OK] button.

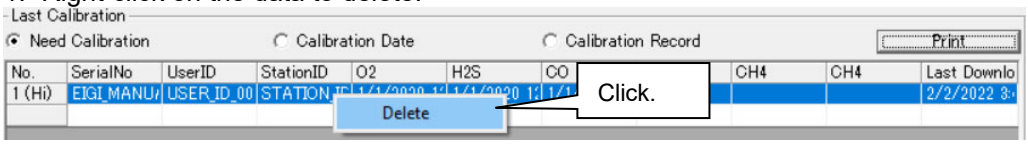




③ Delete data

● Delete

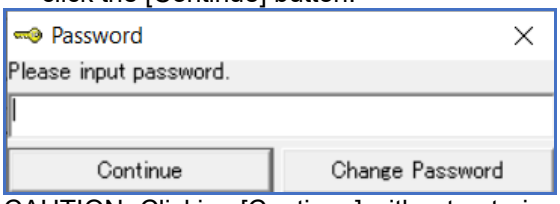
1. Right-click on the data to delete.



CAUTION: Only data shown in the [Need Calibration] and [Calibration Date] displays can be deleted.
Data cannot be deleted in the [Calibration Record] display.

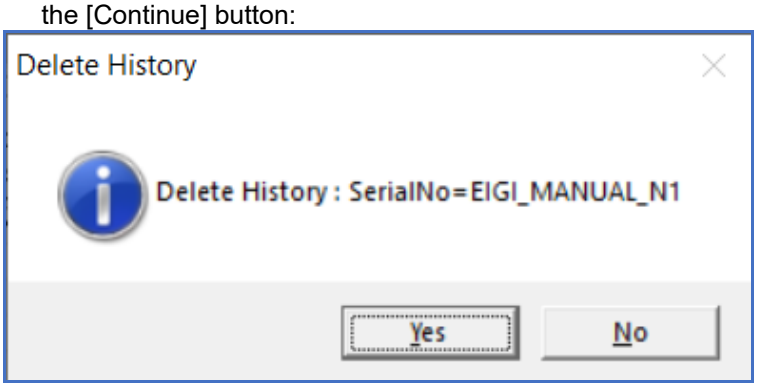
● Password input

1. Click the [Delete] button to display a password dialog. Enter the password, then click the [Continue] button.



CAUTION: Clicking [Continue] without entering a password will cancel deletion.

2. The following message will appear when you enter the correct password and click the [Continue] button:



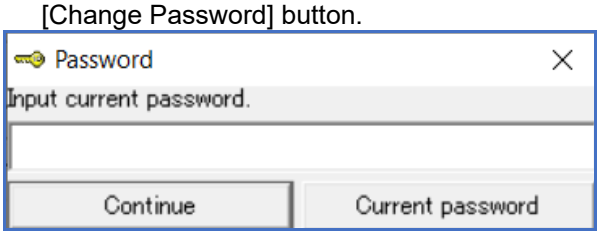
Click the [Yes] button to delete the data.
Click the [No] button to cancel data deletion.

CAUTION: The default password immediately after installation is “Rki” (not case sensitive). For details of how to change the password, refer to '④ Change password' in '3-5. Last Calibration screen'.

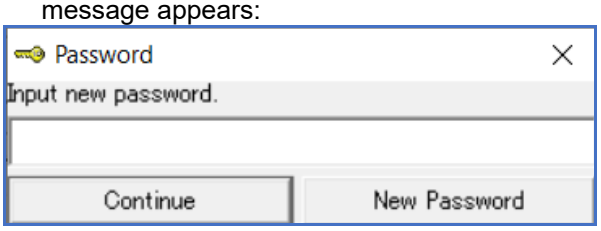
④ Change password

● Password input

1. Open the password dialog in the same way as for data deletion, then click the [Change Password] button.

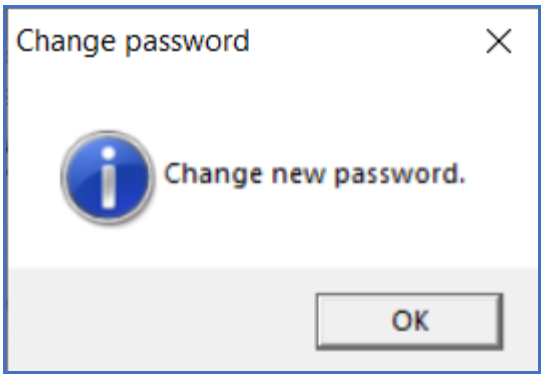


2. Enter the correct password, then click the [Current password] button. The following message appears:



3. Enter the new password here, then click the [New Password] button.

4. The password dialog will appear once again. Enter the same (new) password, then click the [New Password] button.

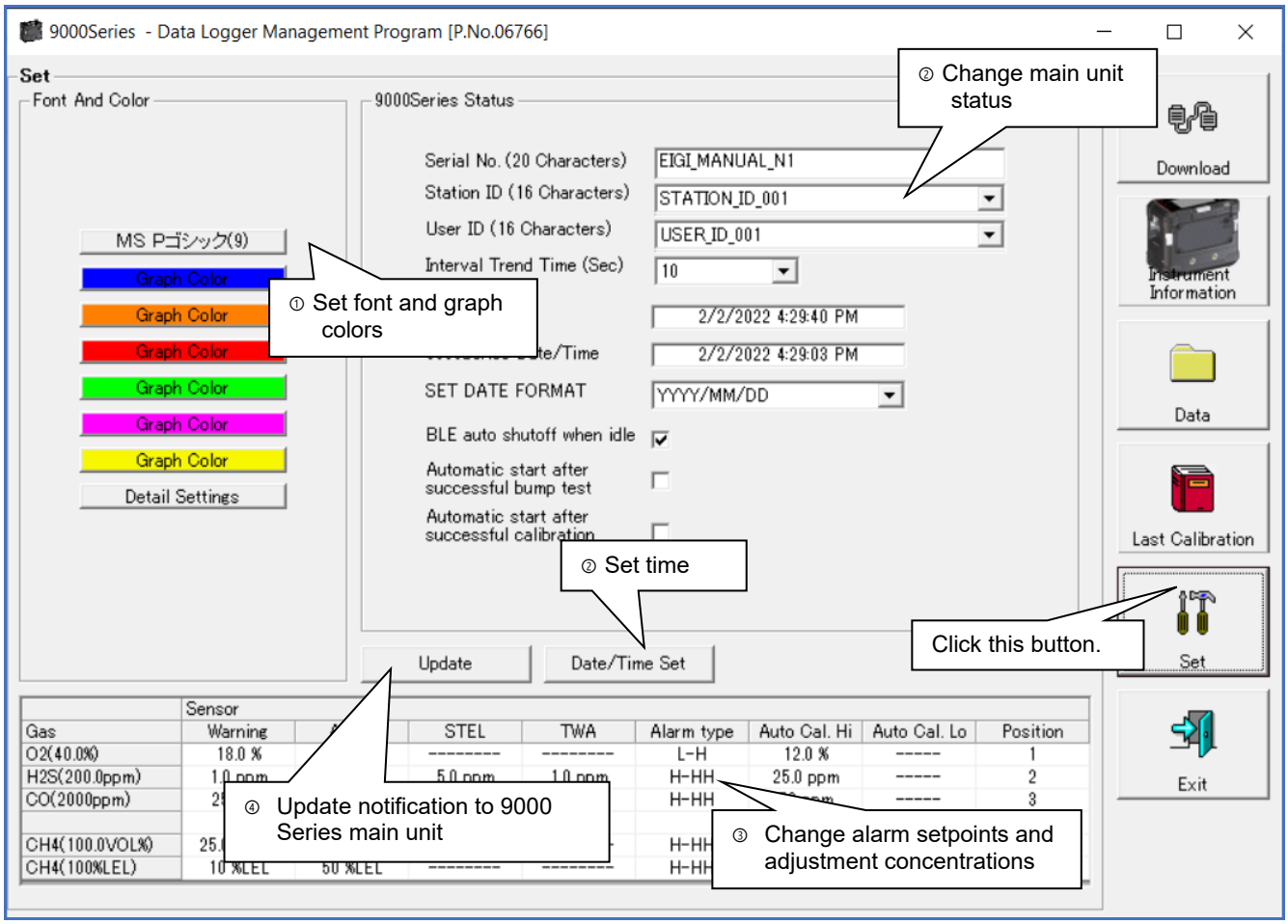


Lastly, click [OK] to update to the new password.

CAUTION: The default password immediately after installation is "Rki" (not case-sensitive).

3-6. Set screen

This screen is used to configure screen display settings and main unit status settings.



CAUTION: Data that has been set or changed must be sent to the 9000 Series main unit by clicking the [Update] button.

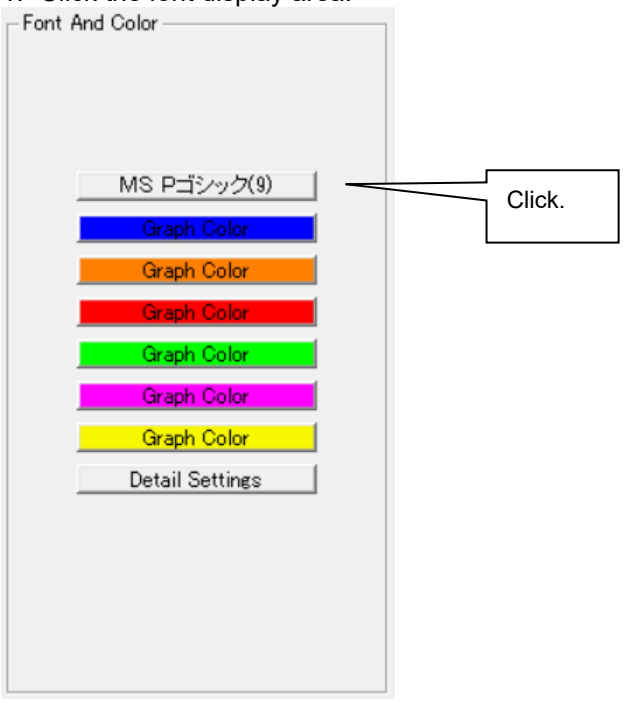
CAUTION: Font settings will be applied from the next time the program is started.

CAUTION: [BLE auto shutoff when idle] is displayed only when the BLE function is enabled.

① Change font and graph colors

● Change font

1. Click the font display area.



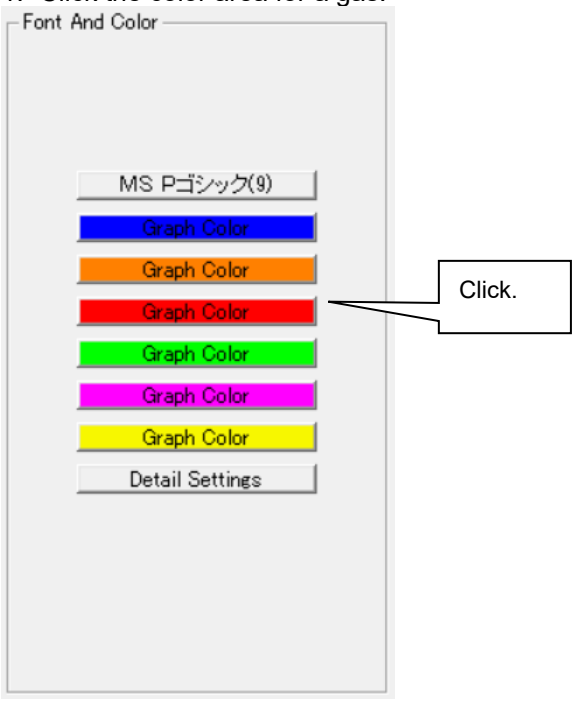
Set the desired font in the font setting dialog that appears.

CAUTION: The screen display may be hard to read if you use an excessively large font.
Changes made here will be applied from the next time the program is started.

● Change graph color

The display colors on the graph can be changed for each gas.

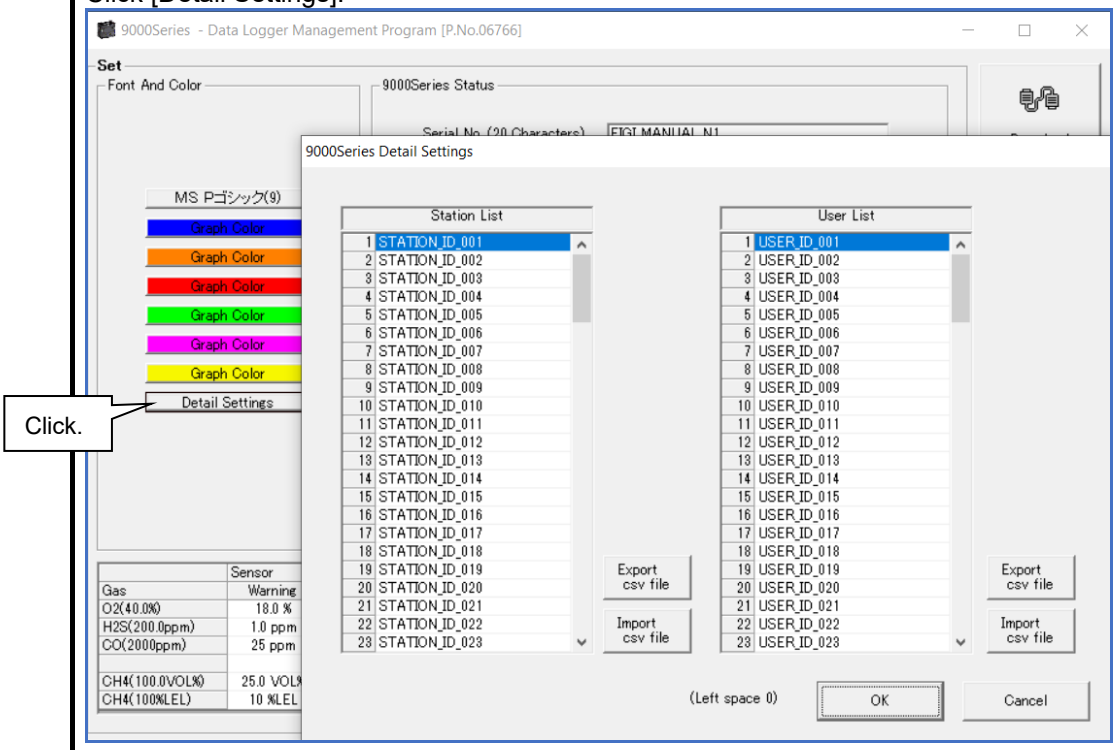
1. Click the color area for a gas.



Select the desired color in the color selection dialog that appears.

● Edit station/user lists

1. Edit the station ID and user ID lists.
Click [Detail Settings].

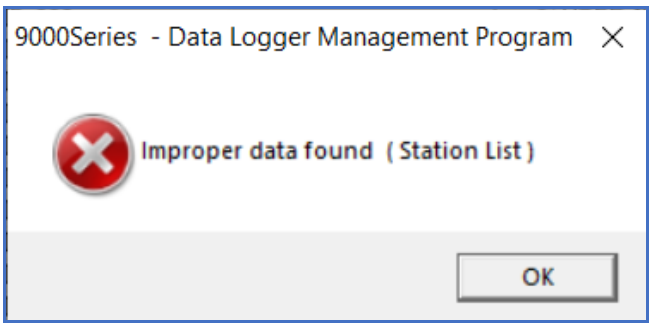


An edit dialog appears. The station list can contain up to 128 entries.
Up to 16 alphanumerical characters can be used, including the space, hyphen, and slash symbols (all single-byte characters).

[Export csv file]: Outputs to a file. Creates a text file containing the number and data entries.

[Import csv file]: Imports from a text file containing number and data entries. The background color will appear in red for entries with unsupported characters or too many characters.

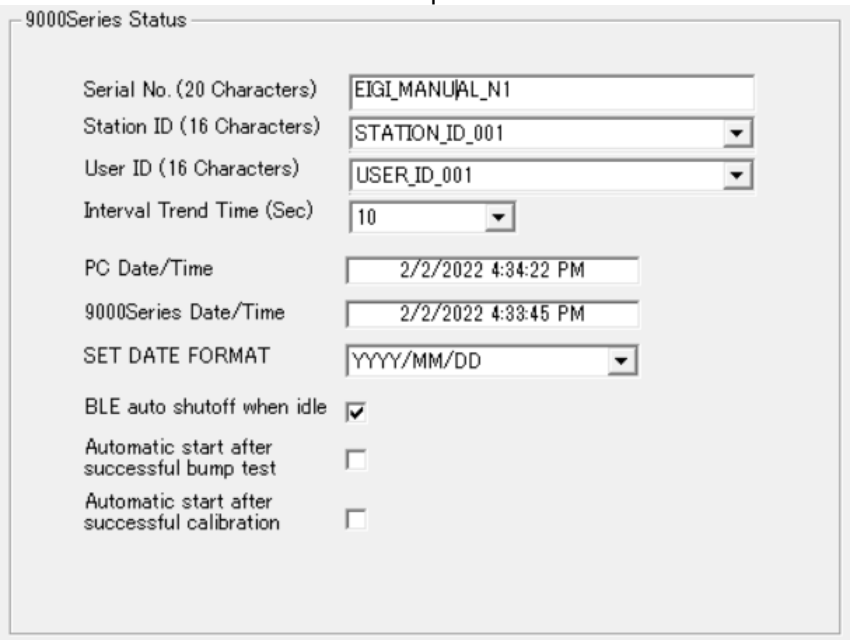
* [OK] is disabled if any entries have a red background.



② Change main unit status

● Edit

1. Edit data in the status area as required.



Details indicated for [Serial No.], [Station ID], and [User ID] can be edited provided they do not exceed 16 characters in length.
[Interval Trend Time] can be changed by selecting from the pull-down list.
Click the [Date/Time Set] button to synchronize the PC time ([PC Date/Time]) with the 9000 Series main unit internal clock ([9000Series Date/Time]).

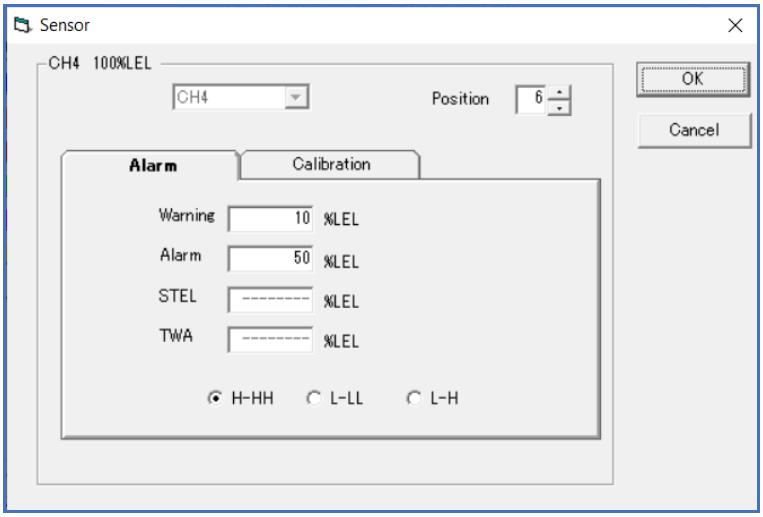
CAUTION: Dates and times cannot be entered directly into the date/time boxes.
CAUTION: Apart from clock setting, changing the status data here alone will not update the same data in the 9000 Series main unit. Be sure to click [Update] to update (send) the changes to the main unit.

[BLE auto shutoff when idle]:Displayed only when the BLE function is enabled. Connection processing is disabled when BLE connection is not possible.
[Automatic start after successful bump test]/[Automatic start after successful calibration]: Start automatic measurement once the corresponding processing is successful.

③ Change alarm setpoints and adjustment concentrations

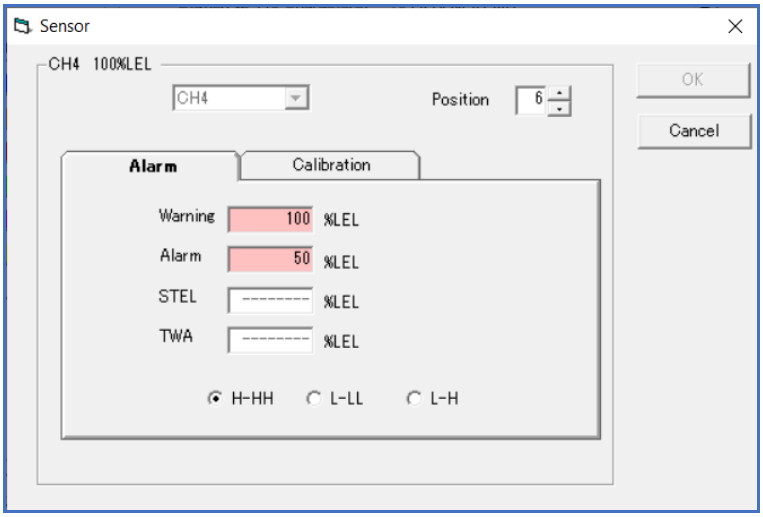
● Call up edit screen

1. Right-click the sensor row to be changed to display the edit screen.



● Edit alarm setpoints

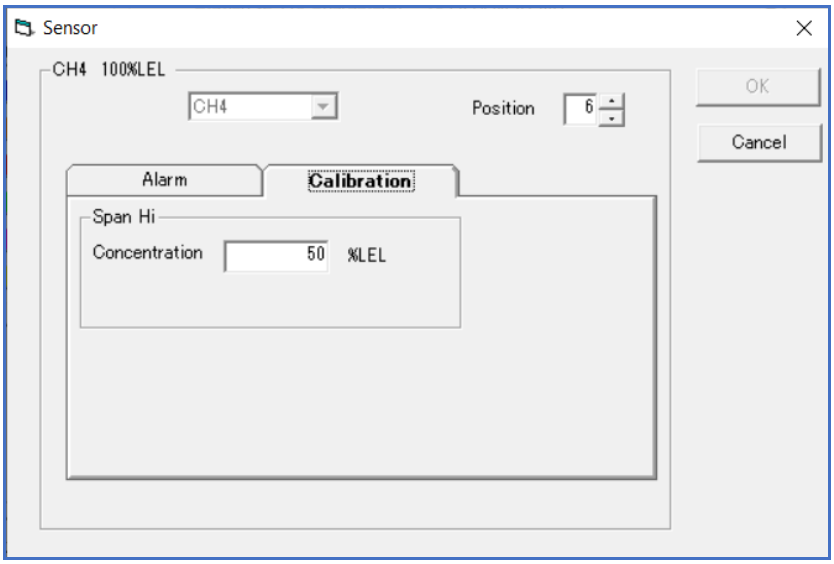
[Position] is the number indicated on the 9000 Series main unit. Edit this number to avoid duplicating sensors.
The alarm type (H-HH, L-LL, L-H) can be changed.
The [LO]/[HI] selection is displayed if the sensor has a double range.



If the magnitude relationship between the warning and alarm setpoint values is inappropriate for the [LO]/[HI] or alarm type selection, the values are displayed with a pink background and the [OK] button is disabled.

● Edit adjustment concentrations

Edit the values on the [Calibration] tab.

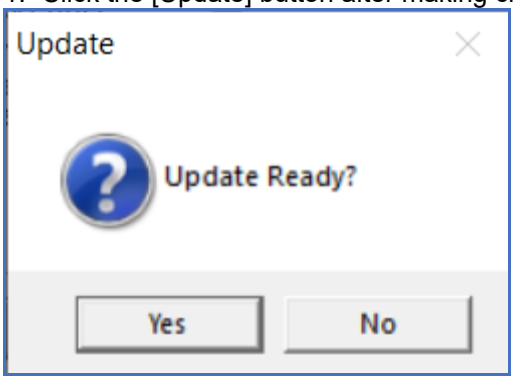


The [Span Lo] area is displayed only for sensors that allow double-range adjustment.

④ Update notification to 9000 Series main unit

● Update notification

1. Click the [Update] button after making changes.



Click the [Yes] button to send the changes to the 9000 Series main unit to be stored.
Click the [No] button to cancel update notification.

CAUTION: Details cannot be restored once they have been changed. If update notification has not yet been made, you can restore the main unit information by clicking the [Instrument Information] button on the Download screen to download the device information data.

4. Data Maintenance

Depending on how the program is used—for example, if data is read in several times a day—this may increase both data volumes and data management burdens. Unforeseen problems with the PC may also lead to loss of valuable data.
We recommend backing up data periodically to protect against such data management problems.

4-1. Data storage structure

Data is contained within the installed 9000Series program folder.

1) File name: 9000Series.mdb
   File type: Microsoft JET 3.6 database file

2) File name: Data
   File type: Individual event data files (within each year and month folder)

4-2. Backing up

Although it depends on the usage pattern, we recommend copying data to a separate hard disk drive or external auxiliary storage device (for example, CD-R).
When restoring data, copy the data to the location at which the 9000Series executable file is saved. This will allow data to be searched and viewed when the program is started.

5. Usage Precautions

Note the following precautions when using this program:

① Connect the USB cable correctly for receiving data.

② Avoid using similar functions on other applications at the same time when data is being received.

③ Do not forcibly shut down this program. (For example, using the Ctrl + Alt + Del operation) The program shutdown processing saves configuration parameters for the next time the program starts. Force-quitting the program may cause problems the next time the program starts.

④ Do not directly modify or overwrite data files.

6. Troubleshooting

Symptom	Cause	Corrective action
Communication is not possible.	The USB cable is not correctly connected.	Confirm that it is correctly connected.
	The COM port is not recognized. *1	Install the correct driver.
	The driver is out of date.	Install the latest driver version.

*1 Normally recognized as Silicon Labs CP210x USB to UART Bridge (COM No.)

If the problems persist even after taking the action described above, please contact Riken Keiki.

7. File Structure

Details of the files present when the program is installed and the files present during operation are provided below.

7-1. Current directory immediately after installation

File name	Details
9000Series.exe RKComm2.ocx Filemove.avi RkIrDA11.ocx	9000Series program body Communication component Animation file used during data reception Infrared communication component

7-2. Current directory during operation

File name	Details
9000Series.ini 9000Series.dat 9000Series.mdb Data Seriallog.log	9000Series initial setup file Data downloading file Database file (Microsoft Jet 3.6 database) Directory for saving event data files Record of communication port details since the program was started (for investigation/maintenance use)

CAUTION: The files and directories listed below the double line are created after the program is started.

8. Software Function Specifications

Product name (Program name)	9000 Series Data Logger Management Program
Product model:	SW-9000Series
Executable file name	9000Series.exe
Compatible operating systems	Microsoft Corporation Windows 10
Program size	Main part approx. 4.8 MB, library approx. 5.2 MB (Uses up to 42 MB of hard disk space during installation.)
Communication with main unit	Serial interface (USB to UART） Baud rate: 921,600 bps Data bits: 8 bits Stop bit: 1 bit Parity: Even
Transmission time	Max. approx. 3 minutes (for maximum number of data samples and standard communication settings)
Medium	CD-ROM ×1
Package contents	Operating manual (this document) Product warranty registration card Software license agreement

Revision history

Issue	Revision	Issue date
0	First issue	2022/3/23