

Portable
Combustible Gas Detector
NC-1000
Data Logger Management Program
SW-NC-1000
Operating Manual

Request for the Customers

- Read and understand this operating manual before using the management program.
- Use the management program in accordance with the operating manual.

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Preface

The operation procedures and precautions mentioned in this operating manual apply only for the specified use of the program. We do not hold ourselves responsible for uses not described in this operating manual.

This operating manual will not explain the basic common operations of Microsoft Windows 7, Windows 8 and Windows 10, such as selecting commands or setting dialog boxes. First-time users of Windows should read the Windows manual in advance to learn common operations of the operating system.

**WARNING**

This product is distributed on a special type of CD called "CD-ROM".
Do not try to play this CD on a common audio CD player.
Ignoring this warning may cause loud noise, resulting in hearing impairment or speaker damage.

CAUTION**Necessity of pointing devices**

This software requires pointing devices such as a mouse or touchpad.
Keyboard-only operation is not supported.

1-1. Purpose and features of this program

This program is used to download data collected by the data logger function featured in NC-1000 to a PC to use the data effectively.

There are the following advantages in downloading data collected by the data logger function:

- Gathered data can be viewed in a list.
- Gathered data can be viewed in graph and chart formats.
- Graph and chart data can be printed and stored on paper.
- Past data can be stored.
- Manual copying of data is no longer necessary.
- Able to know quickly which unit needs calibration, and perform calibration automatically.
- Able to manage more than one unit easily.

Notice

- Copying or duplicating the content of this manual without our knowledge, in whole or in part, is prohibited unless otherwise specified in law.
- Due to the improvement of the product, the content of this operating manual might be amended without prior notice.
- It is necessary to agree with the Software License Agreement, separately provided, before using this product. Please consent that we assume you have agreed to this agreement when the package is opened.
- Utilization of the software other than for intended purposes is prohibited. If the operating manual is ignored when using the software, or the software is altered in any way, the safety and quality of the product might not be maintained. We will not be liable for any accidents caused by these conditions.

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Installation and Uninstallation

2-1. Precautions on operating environment

This program can be used on Microsoft operating systems Microsoft Windows 7, Windows 8 and Windows 10. Please note that it cannot be used on other operating systems.

This program requires a maximum of 40 MB hard disk when it is installed. Moreover, on operation of the system, it requires hard disk capacity depending on the amount of data. Please use the program with sufficient disk capacity.



CAUTION

Precautions on handling the CD-ROM

1. CD-ROM storage
Do not store the CD-ROM in a place exposed to direct sunlight or a place with high temperature and humidity.
2. CD-ROM drive to use
Avoid using a slot-loading CD-ROM drive.
The label attached on the CD-ROM might prevent CD-ROM from ejecting properly.
Use a tray-type CD-ROM drive.

2-2. Software installation

Insert a disk which stores data of the program to a CD-ROM drive of a Windows-based PC. After a while, an installation screen will automatically start.

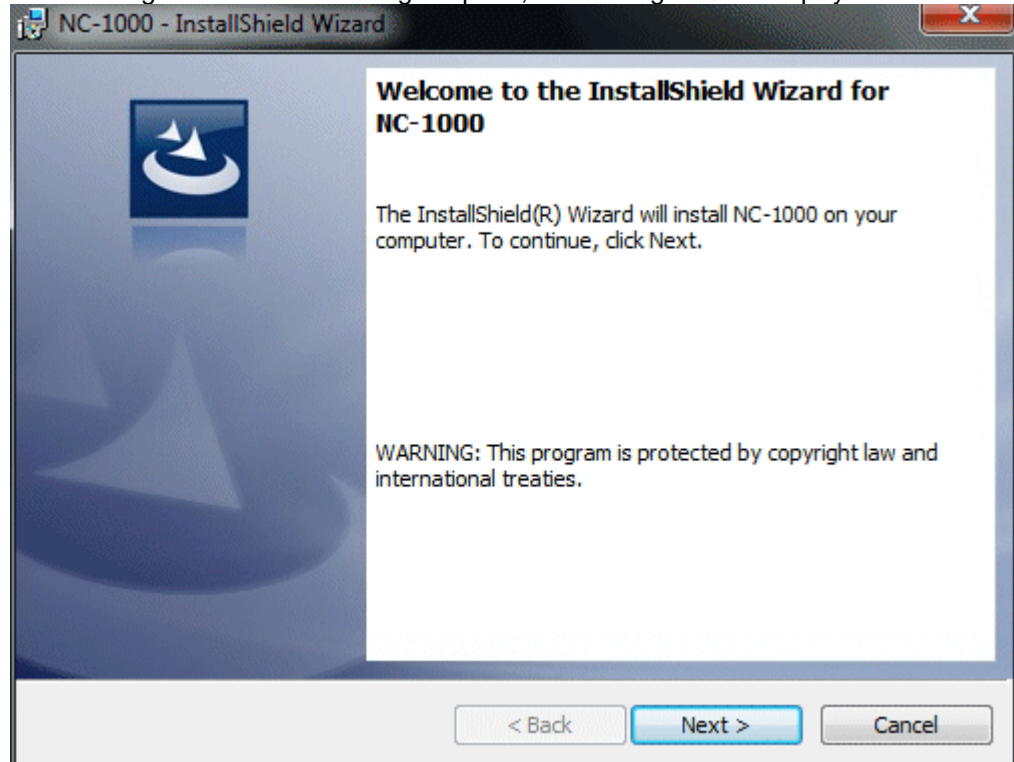
When the PC does not support the auto-start function of the CD-ROM, operate as follows:

1. From Explorer, open the CD-ROM drive.
2. Double-click the "setup.exe" file.

2-3. Installation procedure

- Start the setup program

After inserting the CD-ROM or starting setup.exe, the following screen is displayed.



Click the Next button.

- Accept the license agreement

The following screen is displayed.

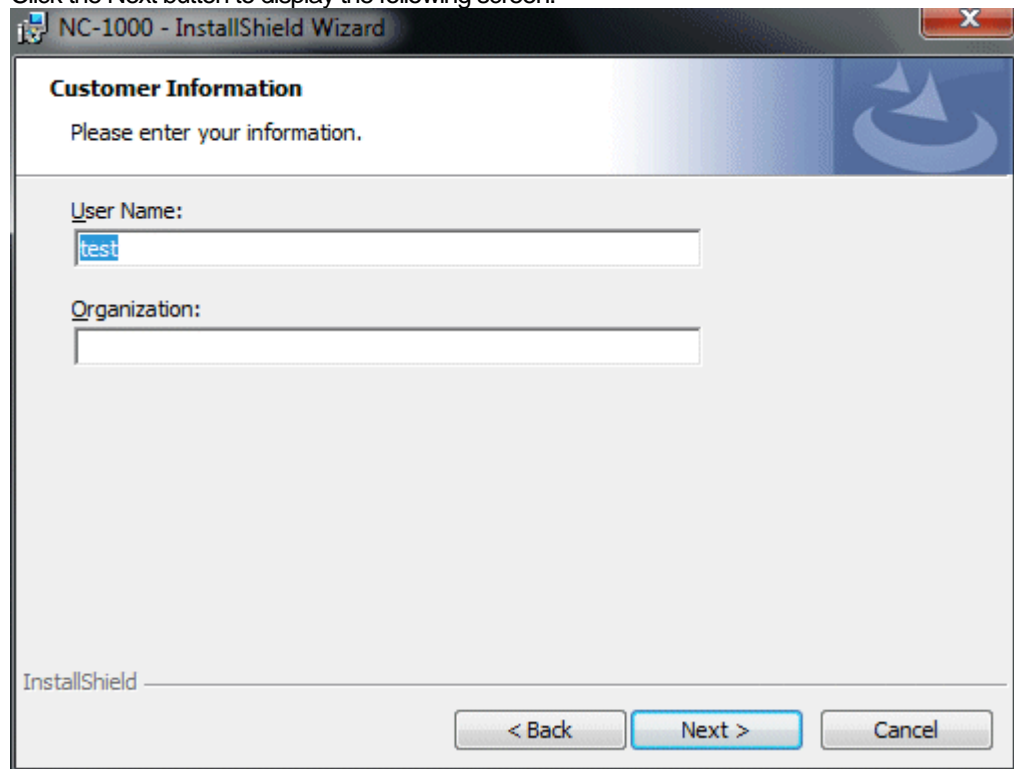


Click the Next button to continue the installation, or the Cancel button to abort the installation.

Caution: Fully understand the license agreement before continuing with the installation of the software.

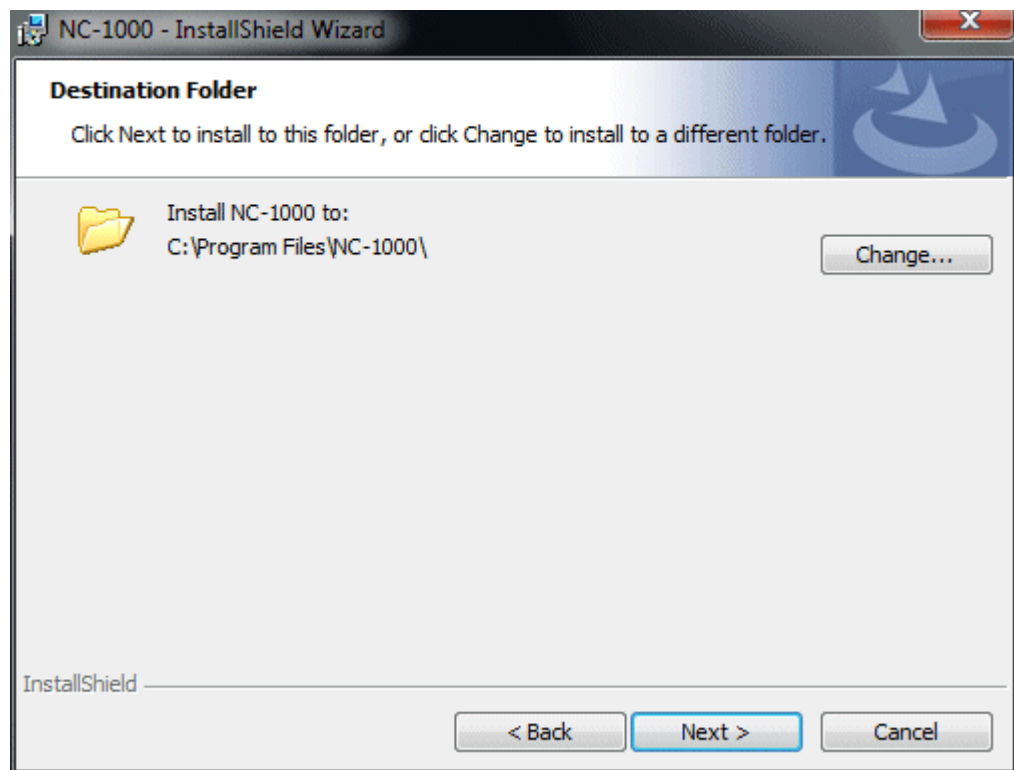
- **Customer Information**

Click the Next button to display the following screen.



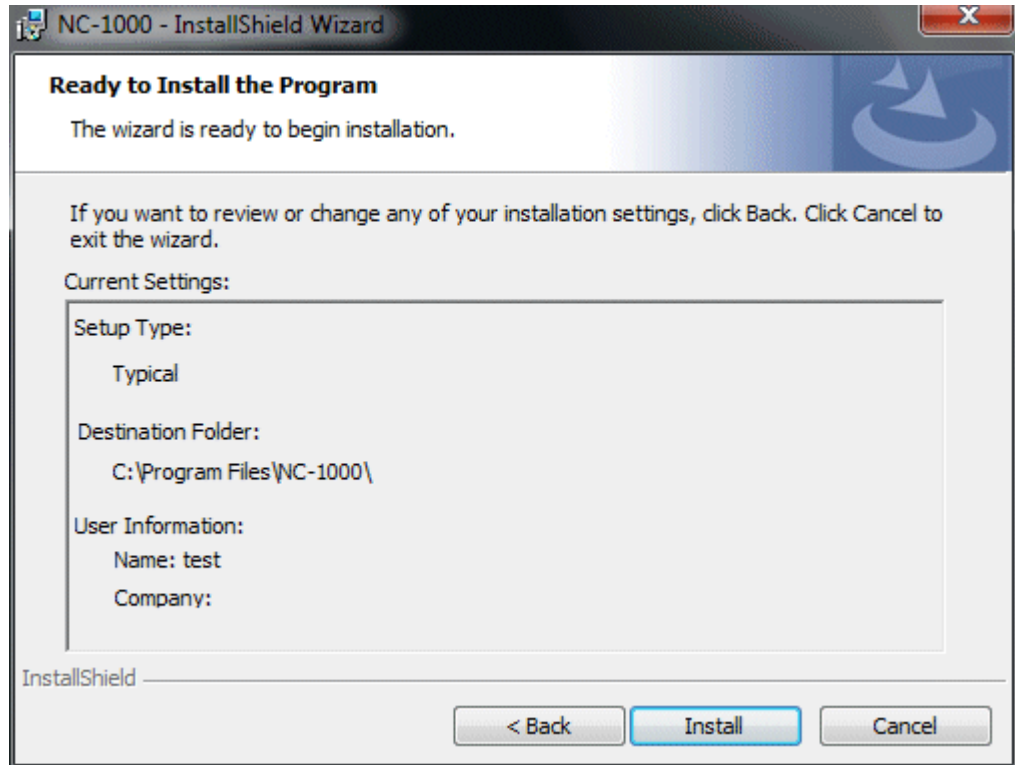
Click the Next button.

- **Destination Folder**



Click the Next button.

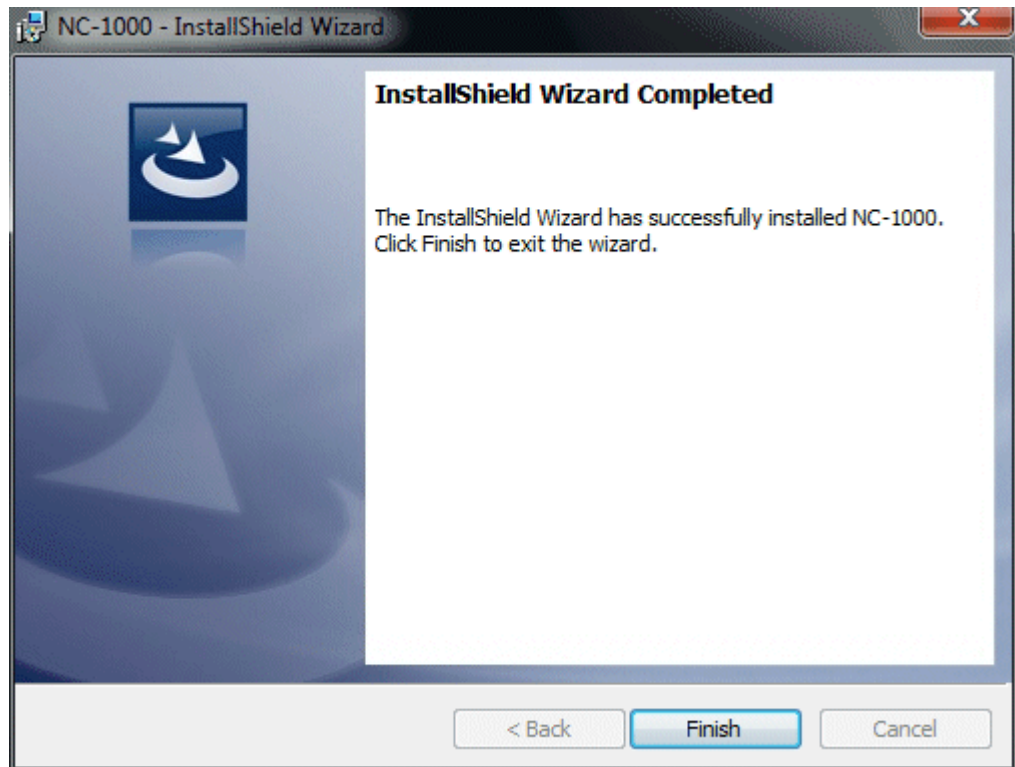
• **Start setup**



Click the Next button to start installation.

• **Complete**

When the setup process is completed, the following screen is displayed.



The program can be used immediately after setup.



CAUTION

Save past data for reinstallation

Please note the following when reinstalling the software:

1. Uninstall the software before reinstallation.
2. If the software is uninstalled after some operation, some files will remain on the PC. Of these files, NC1000.mdb is a database file. If past data needs to be saved, copy this file to a different location, and then delete the folder.



CAUTION

Precautions when installing on Microsoft Windows 7, Windows 8 or Windows 10

This software requires a library, which consists of files such as various drivers, installed on the Windows system. The files are installed automatically during the installation of the software.

When using Microsoft Windows 7, Windows 8 or Windows 10, installation of the system library requires administrator privileges.

In this case, follow the instructions to log in as an administrator, and then install the system library.

After installation, a dialog prompts to restart the system. Restart, log on again as a general user, and install the application.

(Both the library and the application are installed by clicking setup.exe in the CD-ROM. Installation with an administrator privilege is required only when the required library is not installed in the system folder.)

When using the software under a network-connected environment

When installing on a network-connected PC running Microsoft Windows 7, Windows 8 or Windows 10, check the following points.

IrDA communication utilizes a subset of TCP/IP technology (the communication technology used for the Internet, etc.) and uses a special set of communication groups and IP addresses.

Because of this, some strong Internet security software might reject communication.

If possible, use a computer that is not connected to the network.

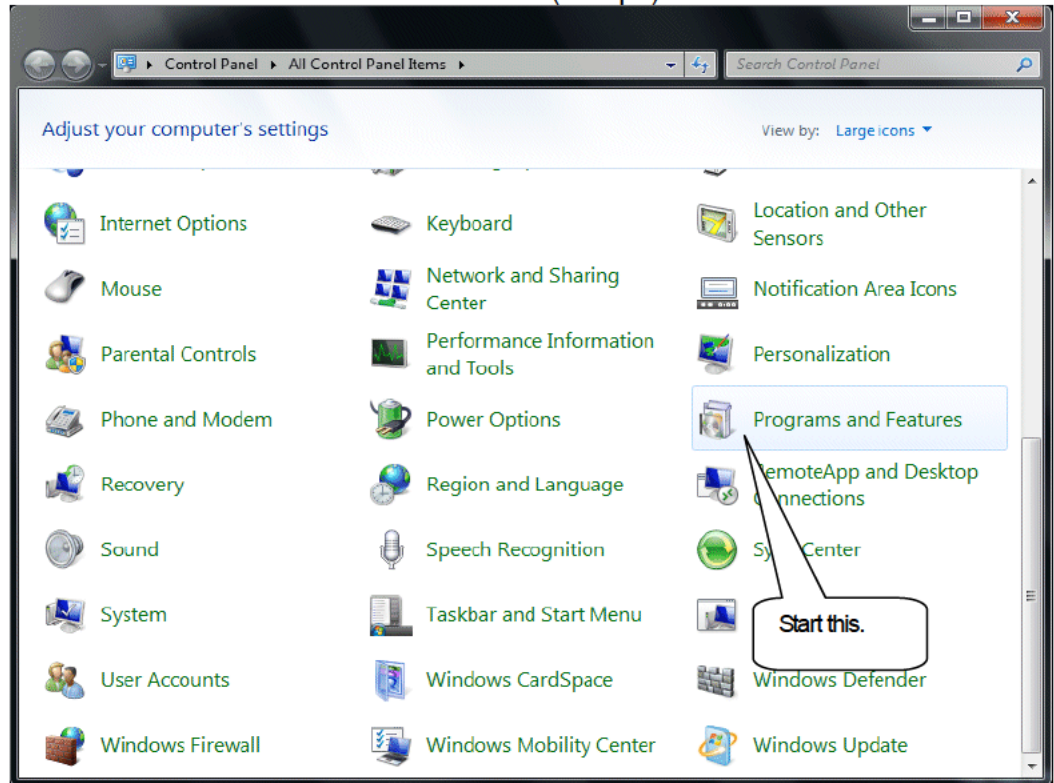
When using a computer connected to the network, use with sufficient considerations on security settings.

2-4. Uninstallation

- **Startup**

To uninstall the software, from the Start menu of the Windows bar, click Settings and then start Control Panel.

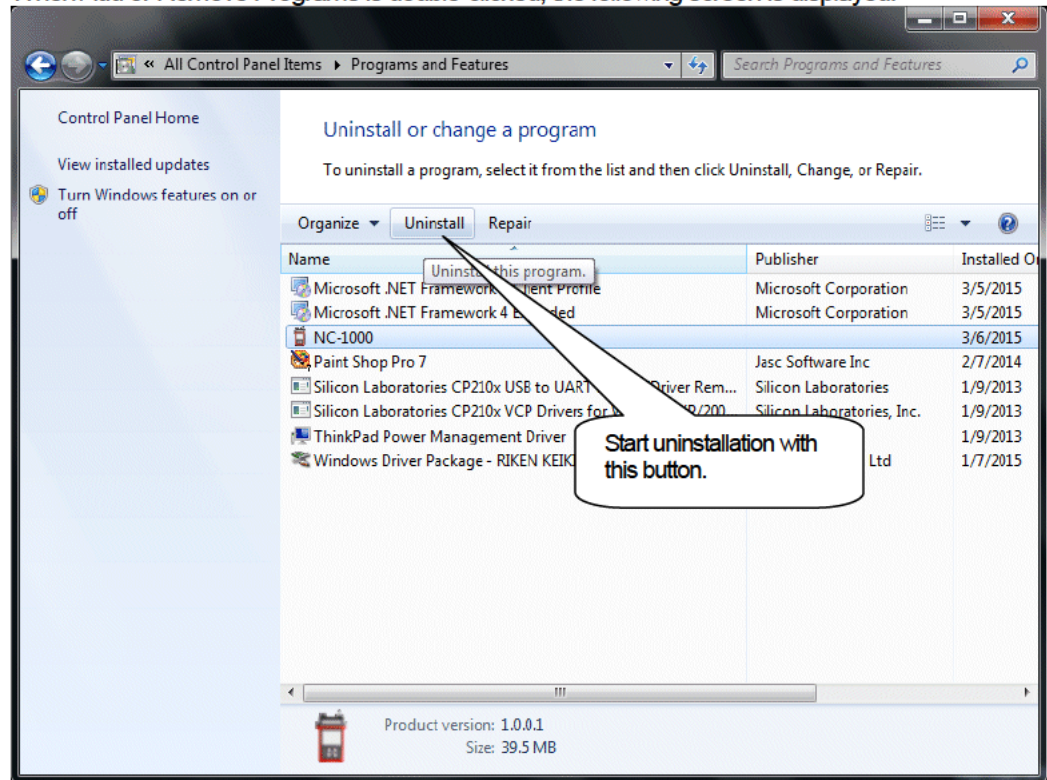
Control Panel (example)



From the Control Panel, double-click Add or Remove Programs to start.

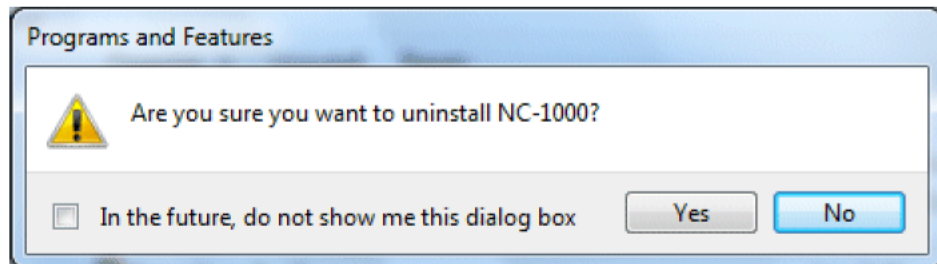
- Select NC-1000

When Add or Remove Programs is double-clicked, the following screen is displayed.



- Start deletion

Select NC-1000 and click the Remove button.



Click Yes to start the uninstallation.

CAUTION: A message, "Do you want to remove the shared file?" might be displayed during uninstallation. Select No to All. Selecting Yes to All might affect other applications.

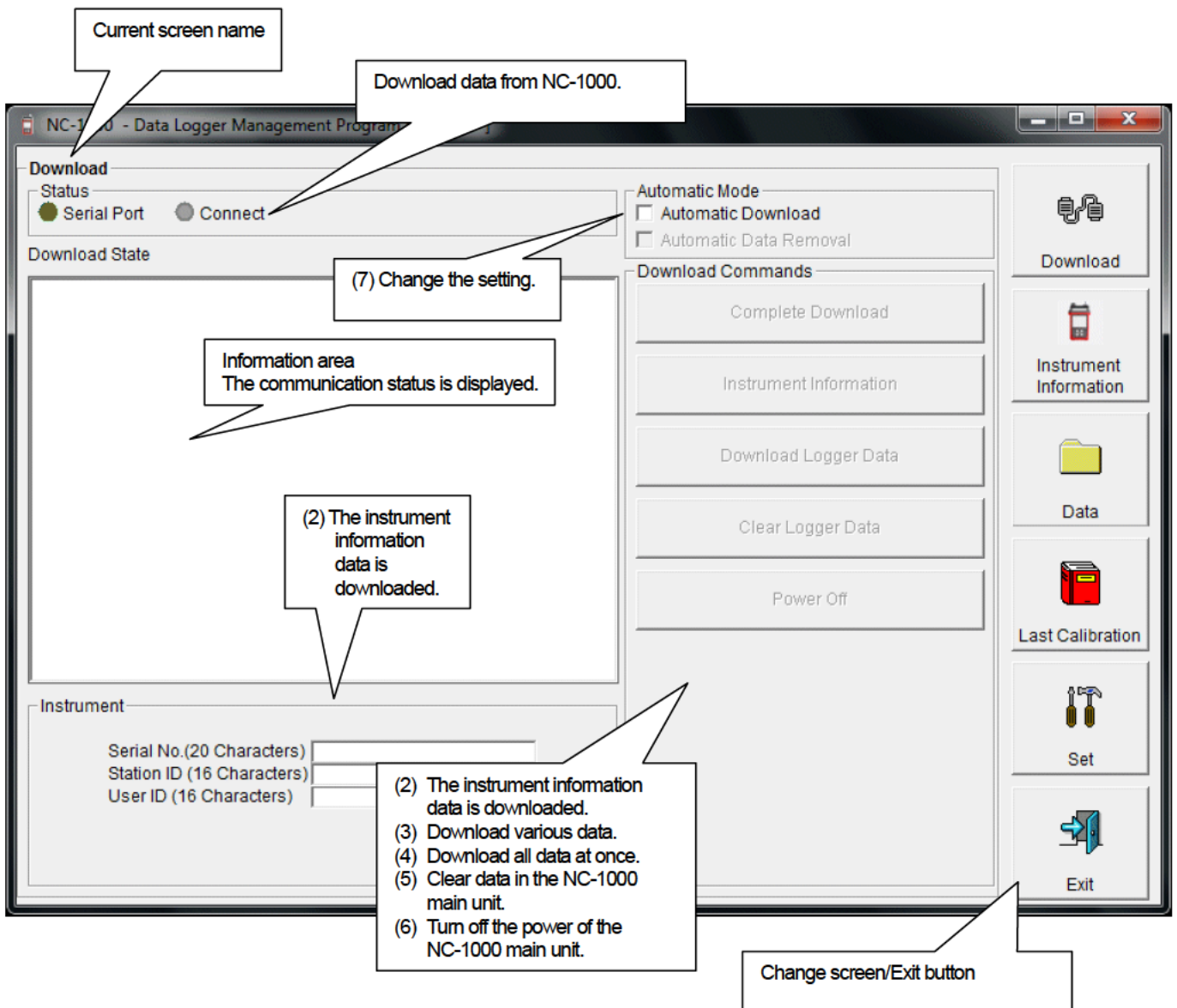
3

How to Operate

Double-click the NC-1000 desktop shortcut, or click the Start Menu, select Programs and click the NC-1000 program icon.

3-1. Download screen

After the splash screen, the download screen is displayed.



To perform data communication, place the NC-1000 main unit to an appropriate position, and with the program activated, turn on the power of the main unit. The program automatically judges whether or not communication is possible. If possible, the PC will be ready to receive the data.

(1) Download data from NC-1000

- Prepare the main unit

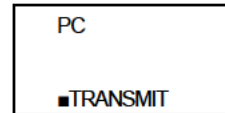
1. Start the software.
2. With the NC-1000 main unit powered off, move it to a position capable of communication.
3. Turn on the NC-1000 main unit.

CAUTION:

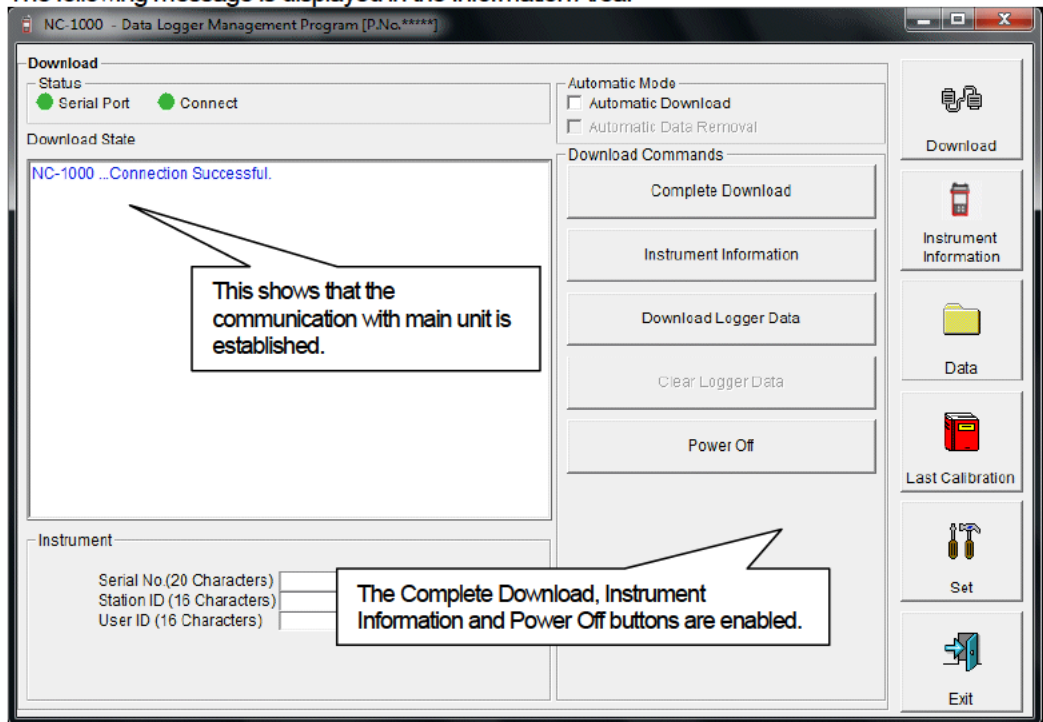
Make sure to turn on the power of NC-1000 after placing it to a position capable of communication.

Communication will not be established when it is placed at a position capable of communication with the power turned on.

The message will be displayed as shown on the right on the LCD screen of the NC-1000 main unit. →
(Due to the display resolution of NC-1000, the message will be somewhat difficult to read.)



The following message is displayed in the Information Area.



CAUTION:

If the content of the Information Area is different from above, turn off the power of the NC-1000 main unit, check the position of the unit, and then turn on the power again.

When communication is established, the Status area changes as follows.



Serial Port:

- Communication available: Green (PC port ready)
- Communication not available: Red

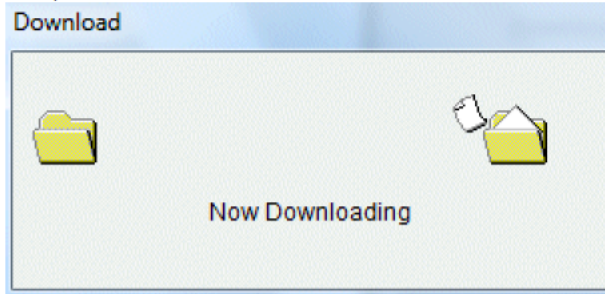
Connect:

- Communication ready: Gray
- Communication in progress: Green

(2) Download instrument information

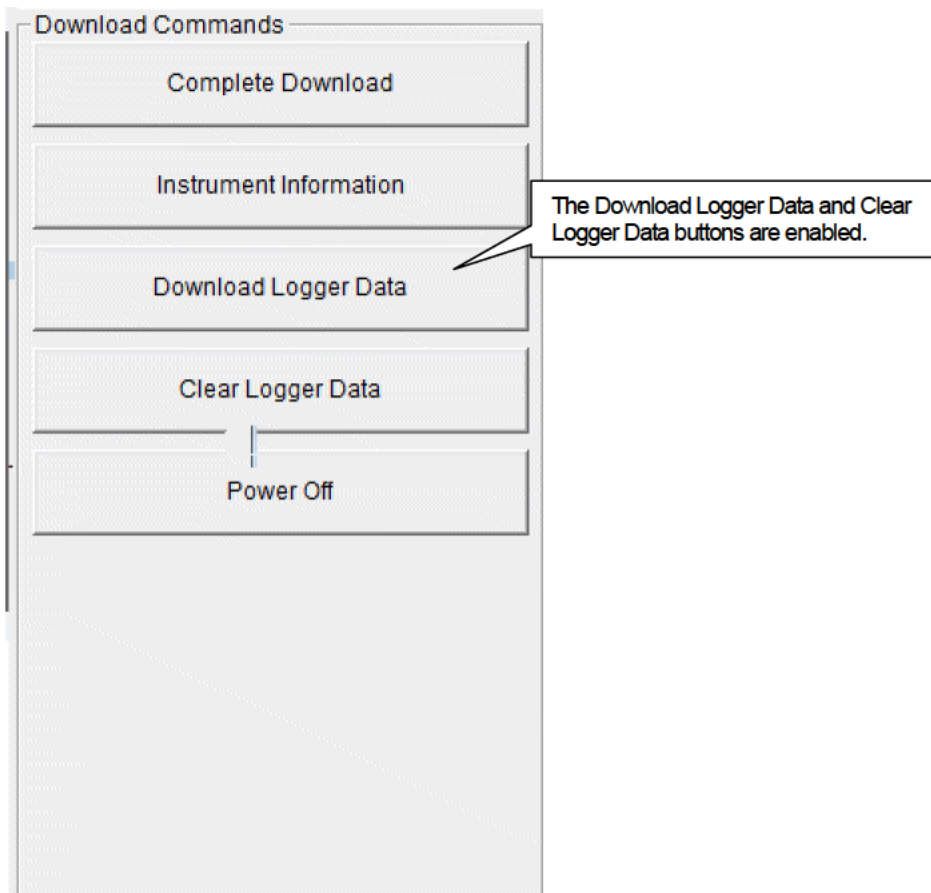
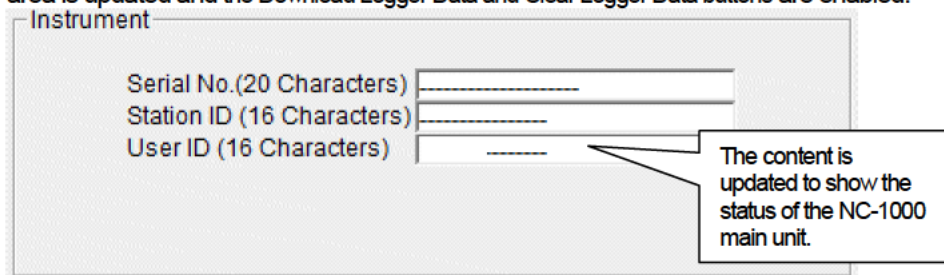
- Download instrument information

First, click the Instrument Information button to download instrument information data.



An animation is displayed during download.

When the Instrument Information data is downloaded, the content of the Instrument Information area is updated and the Download Logger Data and Clear Logger Data buttons are enabled.

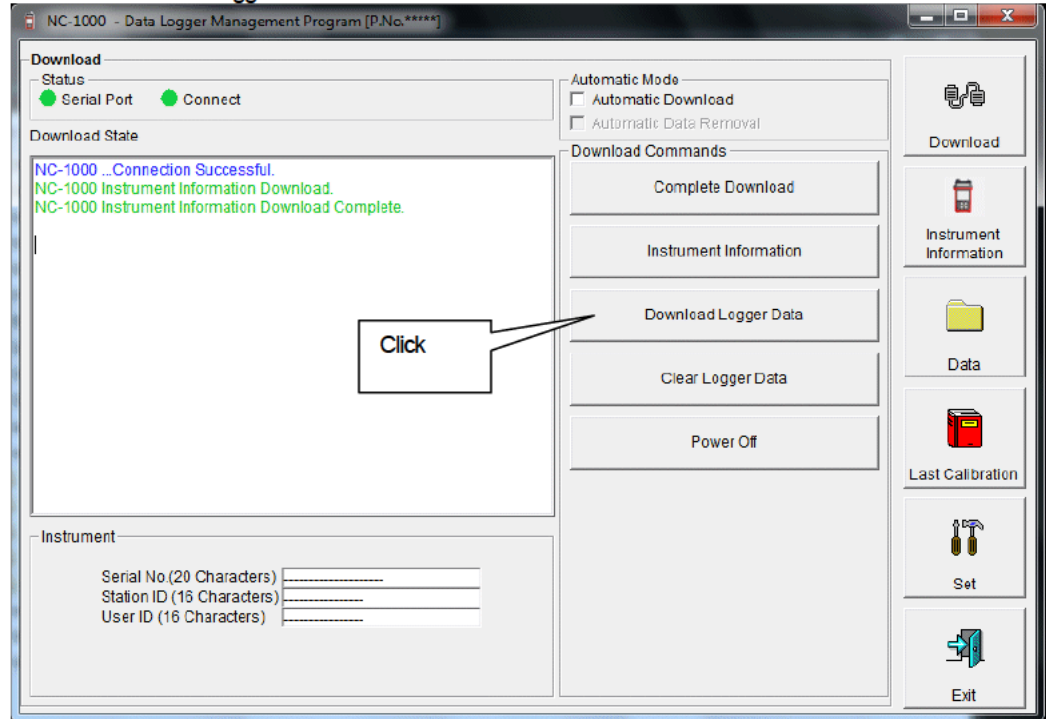


(3) Download various data

- Trend data
- Event data

After the instrument information data is downloaded using the Instrument Information button, the Download Logger Data button is enabled.

Click the Download Logger Data button.



The download status is displayed in the information area.

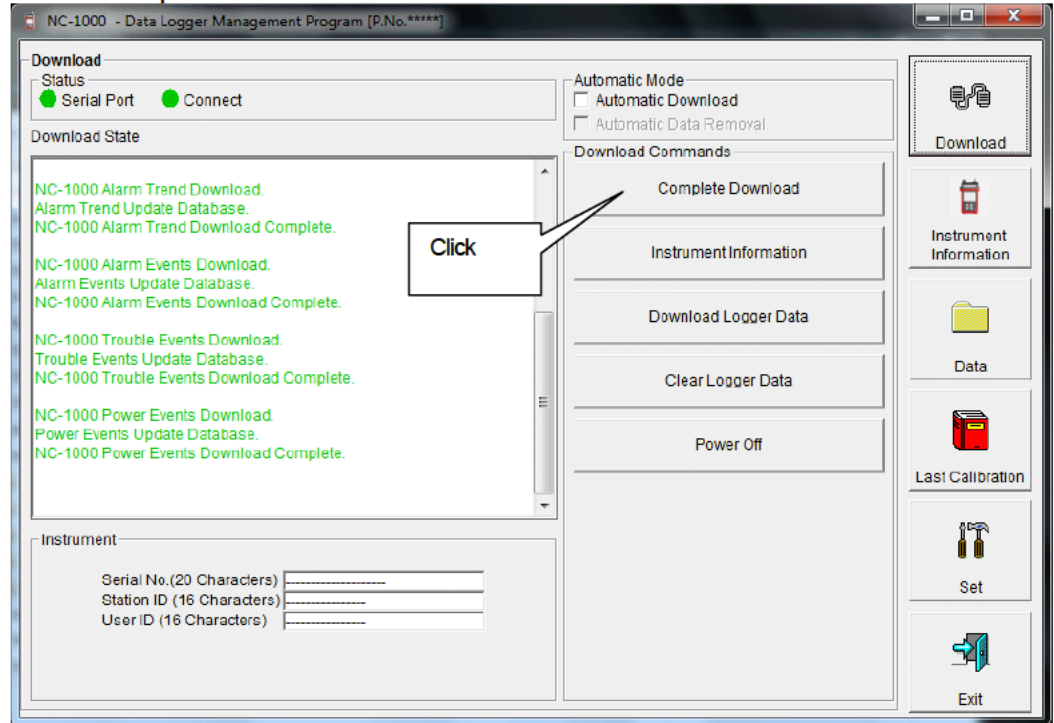
CAUTION:
During download of each data, other data accesses are prohibited. Therefore, other download buttons and the Set button are disabled.

(4) Complete download

- Complete download

The Complete Download button downloads Instrument Information, Interval Trend, Alarm Trend, Alarm Events, Trouble Events and Power Events data at once.

Click the Complete Download button.



The download status is displayed in the information area.

CAUTION:

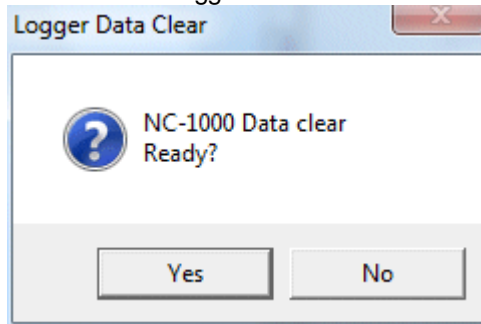
During download of each data, other data accesses are prohibited. Therefore, other download buttons and the Set button are disabled.

(5) Clear data in the NC-1000 main unit

• **Data clear**

Use the Clear Logger Data button to delete various data stored inside NC-1000.

Click the Clear Logger Data button.



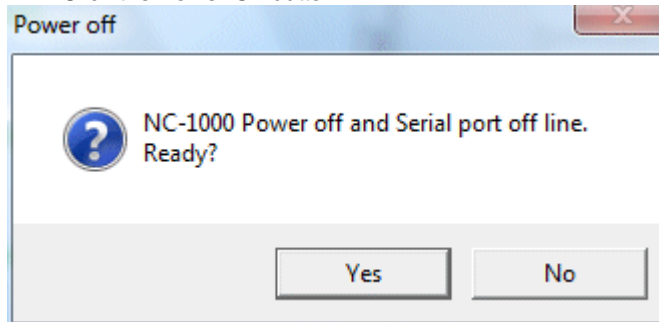
Click Yes to start clearing the data.

(6) Turn off the power of the NC-1000 main unit

• **Power OFF**

Use the Power Off button to turn off the power of the NC-1000 main unit and initialize the serial port of the PC.

1. Click the Power Off button.

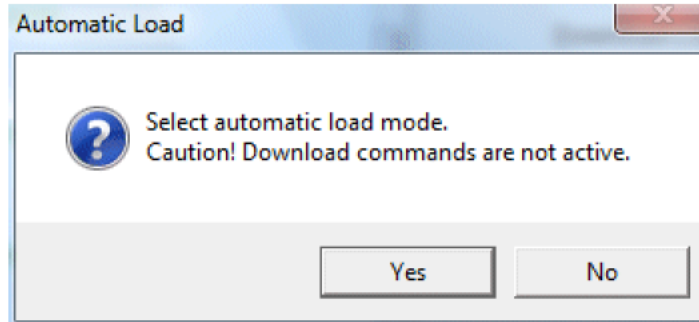
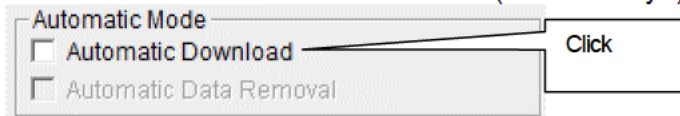


Click the Yes button to start the power off process of the NC-1000 main unit. After the serial port of the PC is initialized, it will be reset to the data download ready status.

(7) Switch to automatic mode

- **Automatic Download**

1. Mark the Automatic Download checkbox (if not marked yet).



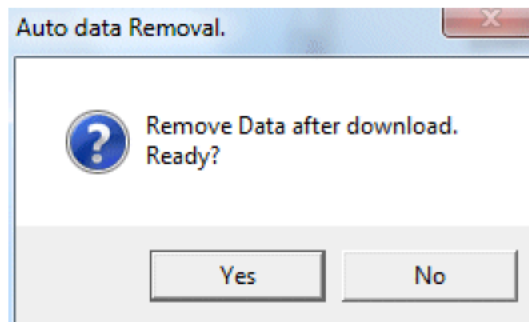
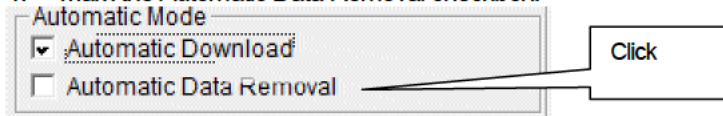
Click Yes to switch to Automatic Download.
Click No to cancel mode change.

In this mode, after the NC-1000 main unit is powered on, the PC automatically downloads complete data and then turns off the power of the NC-1000 main unit. During automatic download, manual download is not available.

- **Automatic Data Removal**

When Automatic Download is used, downloaded data can be automatically removed after download.

1. Mark the Automatic Data Removal checkbox.



Click Yes to **automatically remove data stored in NC-1000 after downloading complete data.**

* This setting is useful for shortening download time when repeating download and data removal processes.

3-2. Instrument Information screen

Click the Instrument Information button at the right side of the screen to switch to the following screen. This screen lists instrument information data for the currently connected NC-1000 main unit.

(1) Data source type

(2) Status information

(3) Calibration history information

Click this button

(4) Sensor alarm setpoint information

Calibration History						
Gas	Calib.Date	Before	After	A.Cal.	Cal.Due(Days)	
CH4(10000ppm)	1/1/2008	0	0	5000	Now	

Last Bump Test				
Gas	Bump Test Date	Test Result	Concentration	Bump Test Due(
CH4(10000ppm)	4/1/2011	0	0	Now

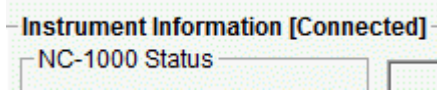
Warning and Alarm point		
Gas	Warning	Alarm
CH4(10000ppm)	250	500

CAUTION: This screen is read-only. Modification of data is not supported. -> See "3-6. Set screen".
When the Instrument Information data is not downloaded, no data is displayed.

(1) Data source type

- **Data source information**

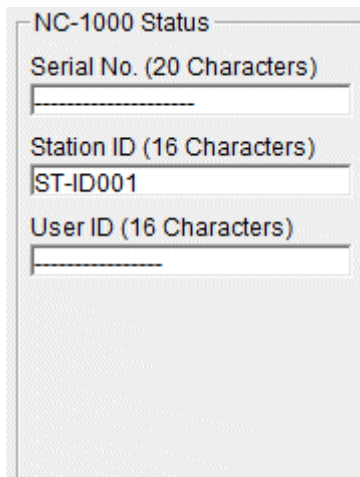
When the information of the multi-gas monitor main unit is displayed, the text Connected is displayed.



(2) Status information

- **Information details**

Serial No, Station ID and User ID stored inside the main unit are displayed.
CAUTION: This column is read-only. Modification of the data is not supported.



(3) Calibration history information

• **Calibration history details**

Calibration History					
Gas	Calib.Date	Before	After	A.Cal.	Cal.Due(Days)
CH4(10000ppm)	1/1/2008	0	0	5000	Now

Contents:

- Gas : Measured gas name (full scale)
- Calib.Date : Date of last calibration
- Before : Concentration before last calibration
- After : Concentration after last calibration/calibration failure
- A.Cal. : Concentration for automatic calibration
- Cal.Due(Days) : Guaranteed operating time without another calibration (when the remaining time reaches 1 month, this item is displayed in red to indicate a warning)

• **Bump test history details**

Last Bump Test				
Gas	Bump Test Date	Test Result	Concentration	Bump Test Due(
CH4(10000ppm)	4/1/2011	0	0	Now

Contents:

- Gas : Measured gas name (full scale)
- Bump.Date : Date of last bump test
- Test Result Concentration : Last test result concentration
- Test Gas Concentration : Last test gas concentration
- Bump.Due(Days) : Guaranteed operation time without another bump test (when the remaining time reaches 1 month, this item is displayed in red to indicate a warning)

(4) Sensor alarm setpoint information

• **Details**

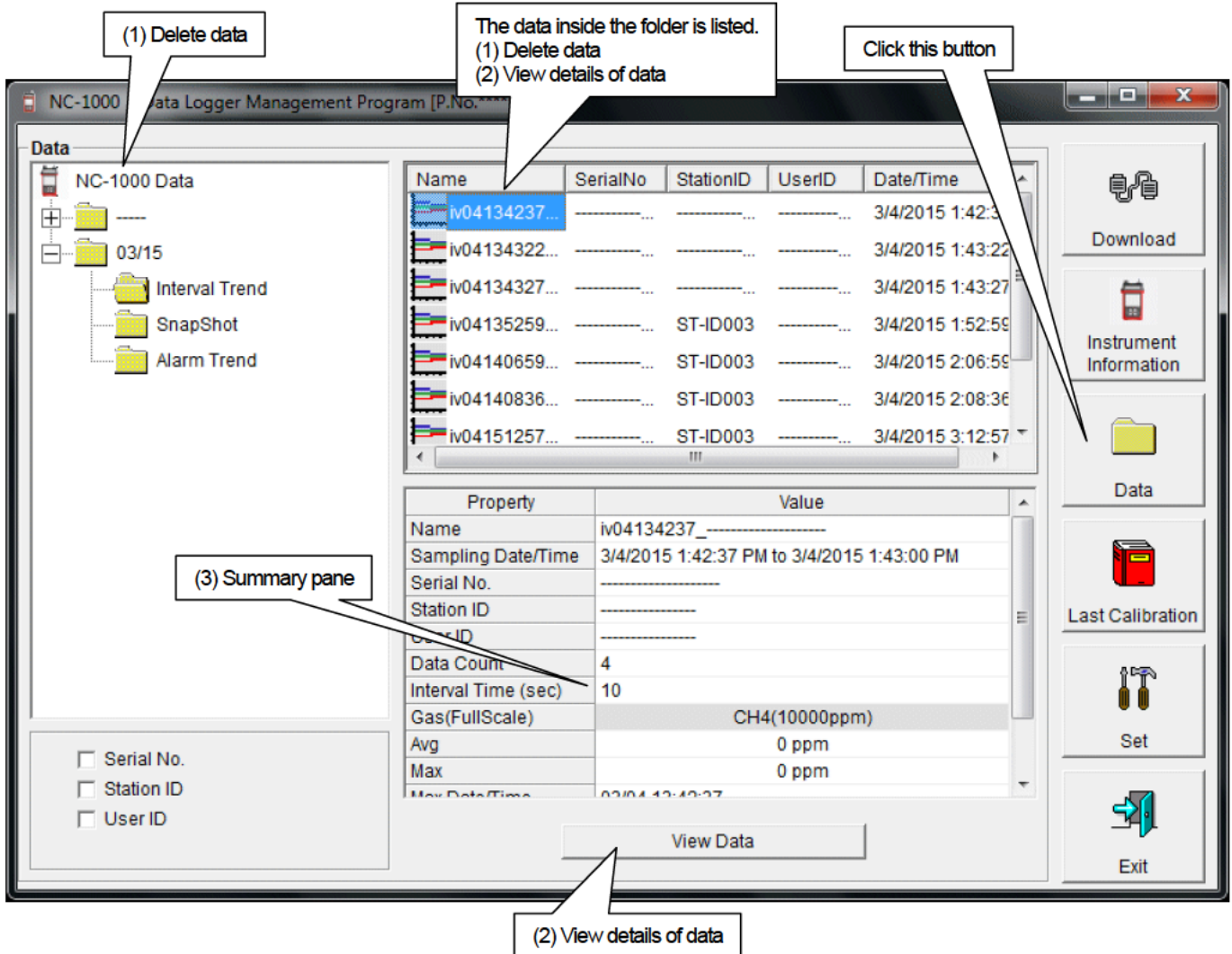
Warning and Alarm point		
Gas	Warning	Alarm
CH4(10000ppm)	250	500

Contents:

- Gas : Measured gas name
- Warning : Concentration at first alarm setpoint
- Alarm : Concentration at second alarm setpoint

3-3. Data screen

Click the Data button at the right side of the screen to switch to the following screen and view the list of downloaded data.



The operation of this screen is similar to the Windows Explorer. However, the following operations are not supported.

1. Rename data.
2. Move the data to another location.

Folders are displayed in an Explorer-like manner, with serial numbers, station IDs and User IDs displayed hierarchically in this order.

Folders and data names are formed under the following rules.

Folder name: 03/11 = Data of March 2011.

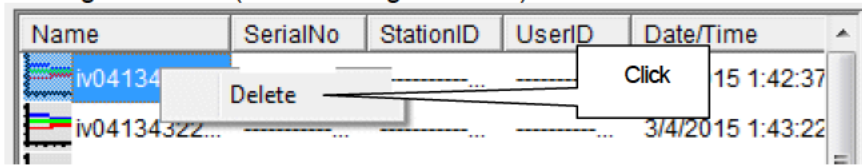
File name: 22111930_3EB = Interval trend, 22nd day, 11:19:30 (Start date and time of logging)

al26150419_3EB = Alarm trend, 26th day, 15:04:19 (Date and time of alarm occurrence)

The limit of data items to be stored in each folder depends on the memory limit of the PC. However, to maintain response speed, back up data files at least once a year. See "4. Data Maintenance".

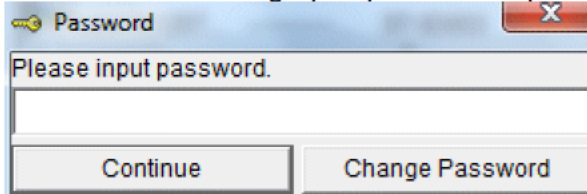
(1) Delete data**• Delete**

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



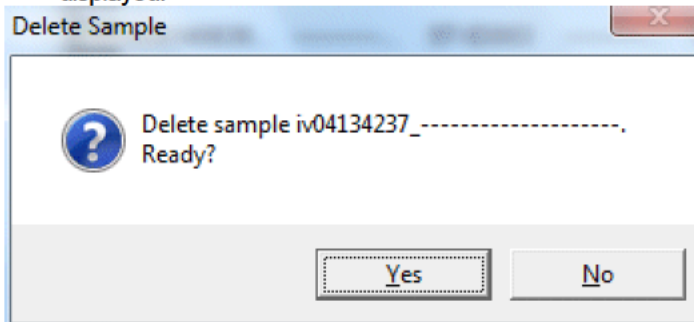
The Delete menu is displayed. Click Delete.

1. The Password dialog is prompted. Enter the password and press the Continue button.



CAUTION: When Continue is pressed without entering the password, the delete operation is canceled.

2. When Continue is pressed with an appropriate password, the following message is displayed.



Click the Yes button to delete the data.

Click the No button to cancel deletion of data.

• Input password**(2) View details of data****• View data details**

1. Click the data to be viewed in detail. Check that the summary of the data is displayed in the summary pane, and click the View Data button.

or

2. Double-click the data to be viewed in detail.

For details on how to use the data details screen, see "3-4. Data View screen".

(3) Summary pane

• **Details**

When the selected data is a normal data, the summary of the data is displayed.

Interval trend

Property	Value
Name	iv04134237_-----
Sampling Date/Time	3/4/2015 1:42:37 PM to 3/4/2015 1:43:00 PM
Serial No.	-----
Station ID	-----
User ID	-----
Data Count	4
Interval Time (sec)	10
Gas(FullScale)	CH4(10000ppm)
Avg	0 ppm
Max	0 ppm
Max Date/Time	03/04 13:42:37
Warning	250 ppm
Alarm	500 ppm

- Name : Data name
- Sampling Date/Time : Start and end of sampling date/time
- Serial No./Station ID/User ID : Status of the NC-1000 main unit
- Data Count : Number of sampled data
- Interval Time (sec) : Sampling interval (sec)
- Gas(FullScale) : Gas (full scale)
- Avg : Average value of gas
- Max : Maximum value of gas data
- Max Date/Time : Date/time when the maximum value is logged
- Min : Minimum value of gas data
- Min Date/Time : Date/time when the minimum value is logged
- Warning : First alarm setpoint
- Alarm : Second alarm setpoint

Alarm events

DateTime	Gas	Event
3/4/2015 5:03:12 PM	CH4(10000ppm)	WARNING
3/4/2015 5:03:12 PM	CH4(10000ppm)	ALARM
3/4/2015 3:15:20 PM	CH4(10000ppm)	WARNING
3/4/2015 3:15:20 PM	CH4(10000ppm)	ALARM
3/4/2015 1:54:03 PM	CH4(10000ppm)	ALARM
3/4/2015 1:53:48 PM	CH4(10000ppm)	WARNING

- DateTime : Date and time when the event occurred
- Gas : Naturally occurring or produced gas
- Event : Event type

Alarm trend

Property	Value
Name	al04135348_-----
Alarm Date/Time	3/4/2015 1:53:48 PM
Serial No.	-----
Station ID	ST-ID003
User ID	-----
Data Count	720
Interval Time (sec)	5
Gas(FullScale)	CH4(10000ppm)
Value	250 ppm
Warning	250 ppm
Alarm	500 ppm

- Name : Data name
- Alarm Date/Time : Date/time when the alarm is occurred
- Serial No./Station ID/User ID : Status of the NC-1000 main unit
- Data Count : Number of sampled data
- Interval Time (sec) : Sampling interval
- Gas(FullScale) : Gas (full scale)
- Value : Concentration when the alarm is occurred
- Warning : First alarm setpoint
- Alarm : Second alarm setpoint

Calibration history

DateTime	Gas	Before	After
3/4/2015 5:02:57 PM	CH4(100ppm)	800 ppm	800 ppm
3/4/2015 3:14:45 PM	CH4(100ppm)	1000 ppm	1010 ppm
3/4/2015 3:14:25 PM	CH4(100ppm)	975 ppm	1000 ppm
3/4/2015 2:11:57 PM	CH4(100ppm)	0 ppm	----
3/4/2015 2:10:13 PM	CH4(100ppm)	0 ppm	----
3/4/2015 2:09:49 PM	CH4(100ppm)	0 ppm	----
3/4/2015 1:57:57 PM	CH4(100ppm)	1040 ppm	1000 ppm
3/4/2015 1:57:31 PM	CH4(100ppm)	0 ppm	----

- DateTime : Date and time when the event occurred
- Gas : Gas
- Before : Concentration before calibration
- After : Concentration after calibration

Trouble events

DateTime	Gas/Body	Event
3/4/2015 5:04:23 PM	Body	Fail(FLOW)
3/4/2015 2:10:13 PM	CH4(10000ppm)	Fail(Span)
3/4/2015 2:09:50 PM	CH4(10000ppm)	Fail(Span)
3/4/2015 1:48:20 PM	Body	Fail(FLOW)
1/1/1900	Body	Fail(CLO.)

- DateTime : Date and time when the event occurred
- Gas/Body : Naturally occurring or produced gas, or the NC-1000 main unit (Body)
- Event : Event type

Bump test

DateTime	Gas	Test Result	Concentration	Judge
3/4/2015 5:02:32 F	CH4(100ppr	790 ppm	800 ppm	PASS
3/4/2015 3:13:50 F	CH4(100ppr	975 ppm	1000 ppm	PASS
3/4/2015 2:09:19 F	CH4(100ppr	0 ppm	10000 ppm	FAIL

DateTime : Date and time when the event occurred
 Gas : Gas
 Test Result : Test result concentration
 Concentration : Test gas concentration
 Judge : Test judgment

Snapshot

DateTime	Gas	Test Result	Concentration	Judge
3/4/2015 5:02:32 F	CH4(100ppr	790 ppm	800 ppm	PASS
3/4/2015 3:13:50 F	CH4(100ppr	975 ppm	1000 ppm	PASS
3/4/2015 2:09:19 F	CH4(100ppr	0 ppm	10000 ppm	FAIL

Name : Data name
 Sampling Date/Time : Recorded date/time
 Serial No./Station ID/User ID : Status of the NC-1000 main unit
 Gas(FullScale) : Gas (full scale)
 Concentration : Gas concentration of the recorded date/time

3-4. Data View screen

This screen displays the details of each data in a table or a graph.

(1) Switch between table and graph views

(2) Output to a printer

(3) Save to a file

(4) To view data summary simultaneously

No	Date/Time	CH4(10000ppm)
1	3/4/2015 3:12:57 PM	AIR
2	3/4/2015 3:13:04 PM	CAL ON
3	3/4/2015 3:13:07 PM	0 ppm
4	3/4/2015 3:13:17 PM	30 ppm
5	3/4/2015 3:13:27 PM	350 ppm
6	3/4/2015 3:13:37 PM	770 ppm
7	3/4/2015 3:13:47 PM	920 ppm
8	3/4/2015 3:13:57 PM	980 ppm
9	3/4/2015 3:14:07 PM	1005 ppm
10	3/4/2015 3:14:17 PM	1045 ppm
11	3/4/2015 3:14:27 PM	1005 ppm
12	3/4/2015 3:14:37 PM	1000 ppm
13	3/4/2015 3:14:47 PM	1005 ppm
14	3/4/2015 3:14:57 PM	1010 ppm
15	3/4/2015 3:15:07 PM	1010 ppm
16	3/4/2015 3:15:17 PM	1010 ppm
17	3/4/2015 3:15:20 PM	CAL OFF
18	3/4/2015 3:15:20 PM	ALARM
19	3/4/2015 3:15:20 PM	WARNING
20	3/4/2015 3:15:27 PM	1010 ppm
21	3/4/2015 3:15:37 PM	895 ppm
22	3/4/2015 3:15:47 PM	500 ppm
23	3/4/2015 3:15:50 PM	NORMAL
24	3/4/2015 3:15:57 PM	135 ppm
25	3/4/2015 3:16:07 PM	60 ppm
26	3/4/2015 3:16:17 PM	15 ppm
27	3/4/2015 3:16:21 PM	AIR
28	3/4/2015 3:16:27 PM	0 ppm

- Event Only: Displays event data only.
- Condensed: Displays data which shows some change in sample data.

CAUTION: Graph is not available when the number of samples is five or less.
 In the table for the Alarm Trend data, the data where the alarm occurred is painted in red.

Among the event data, when the mouse cursor is pointed to WARNING, ALARM or OVER, the cursor changes to the following.

When in this state, clicking the cell triggers a search for the corresponding trend data. If it exists, it can be displayed in a separate screen.



In case of WARNING, ALARM, OVER

The separate screen displayed in case of WARNING, ALARM, OVER.
Click the Return button to turn off the screen.

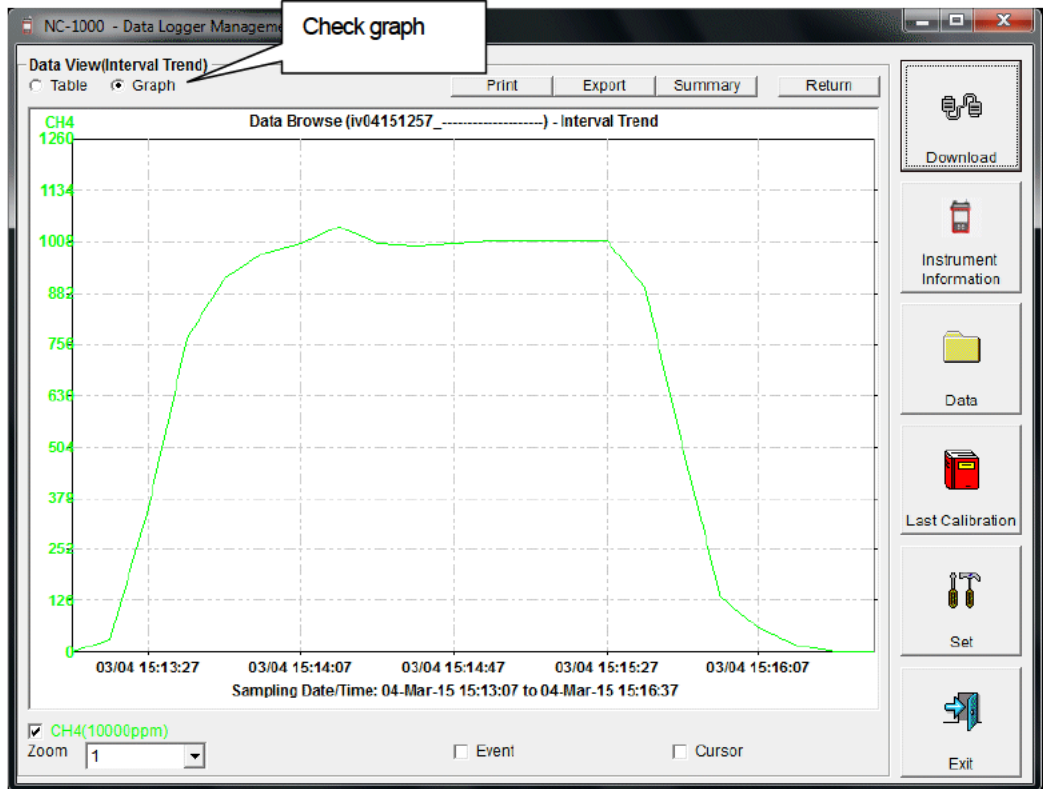
No	DateTime	CH4(1000ppm)
348	3/4/2015 3:14:15 PM	1050 ppm
349	3/4/2015 3:14:20 PM	1000 ppm
350	3/4/2015 3:14:25 PM	1000 ppm
351	3/4/2015 3:14:30 PM	1000 ppm
352	3/4/2015 3:14:35 PM	1000 ppm
353	3/4/2015 3:14:40 PM	1010 ppm
354	3/4/2015 3:14:45 PM	1010 ppm
355	3/4/2015 3:14:50 PM	1010 ppm
356	3/4/2015 3:14:55 PM	1010 ppm
357	3/4/2015 3:15:00 PM	1010 ppm
358	3/4/2015 3:15:05 PM	1010 ppm
359	3/4/2015 3:15:10 PM	1010 ppm
360	3/4/2015 3:15:15 PM	1010 ppm
361	3/4/2015 3:15:20 PM	800 ppm
362	3/4/2015 3:15:25 PM	1010 ppm
363	3/4/2015 3:15:30 PM	1010 ppm
364	3/4/2015 3:15:35 PM	1010 ppm
365	3/4/2015 3:15:40 PM	740 ppm
366	3/4/2015 3:15:45 PM	590 ppm
367	3/4/2015 3:15:50 PM	320 ppm
368	3/4/2015 3:15:55 PM	215 ppm
369	3/4/2015 3:16:00 PM	60 ppm
370	3/4/2015 3:16:05 PM	100 ppm
371	3/4/2015 3:16:10 PM	45 ppm
372	3/4/2015 3:16:15 PM	20 ppm
373	3/4/2015 3:16:20 PM	5 ppm
374	3/4/2015 3:16:25 PM	0 ppm
375	3/4/2015 3:16:30 PM	0 ppm

* In the table for the Alarm Trend data, the data where the alarm occurred is painted in red.

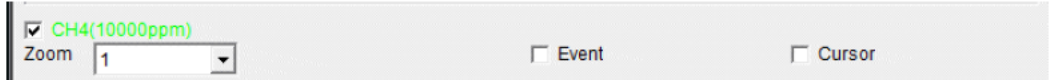
(1) Switch between table and graph views

- Switch to graph view

1. From the Table and Graph radio buttons at the top left of the screen, select Graph.



Use checkboxes and a combo box at the bottom of the screen to perform various operations on the view.



Checkboxes at the top of the screen (gas name): Select these boxes to toggle on/off each gas data.

Zoom combo box: Use this box to select the magnification ratio of the horizontal axis, according to the number of samples.

Event checkbox: Select this box to display event information markers, such as alarms.

Cursor checkbox: Select this box to display a cursor on the graph.

CAUTION:

The maximum value of the graph's vertical axis is automatically adjusted based on the following definitional equations.

When the maximum value of data without event is "x", if full scale is 10 or above, the equation will be $Y_{max} = \{\text{int}(x / 10) + 1\} * 10$. If full scale is below 10, the equation will be $Y_{max} = \{\text{int}(x) + 1\}$, where "int" means to round off the decimal part.

CAUTION:

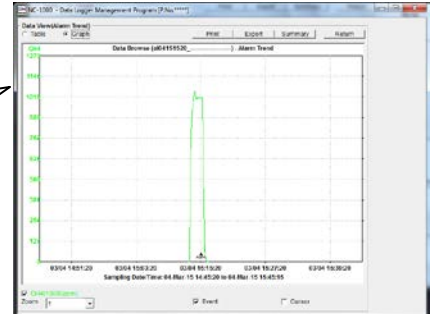
A graph is not displayed unless there are five or more normal concentration data. Data that contains only events cannot be drawn as a graph, because no concentration data is included.

Among the event data, when the mouse cursor is pointed to WARNING, ALARM or OVER, the cursor changes to the following. When in this state, clicking the graph triggers a search for the corresponding trend data. If it exists, it can be displayed in a separate screen.



In case of WARNING, ALARM, OVER

The separate screen displayed in case of WARNING, ALARM, OVER.
Click the Return button to turn off the screen.

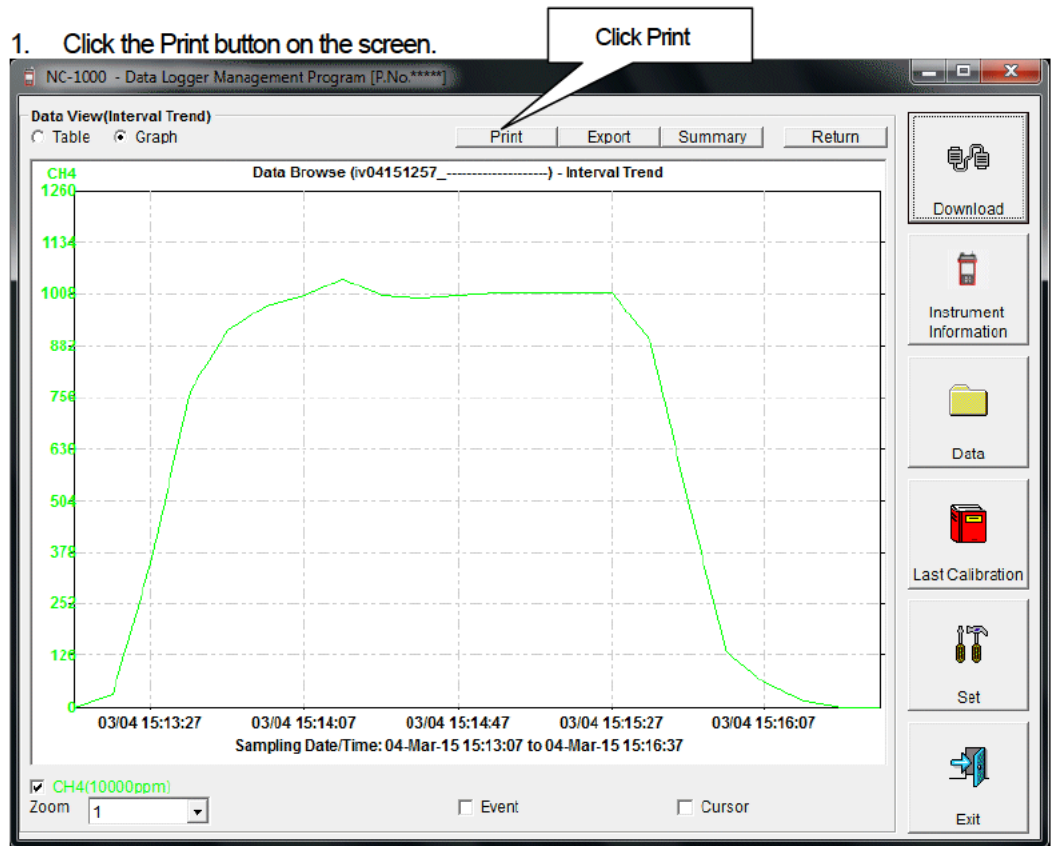


(2) Output to a printer

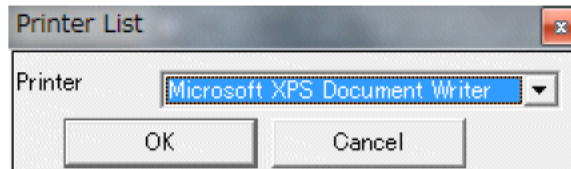
- Print

The content currently displayed on the Data View screen can be output to a printer.

1. Click the Print button on the screen.



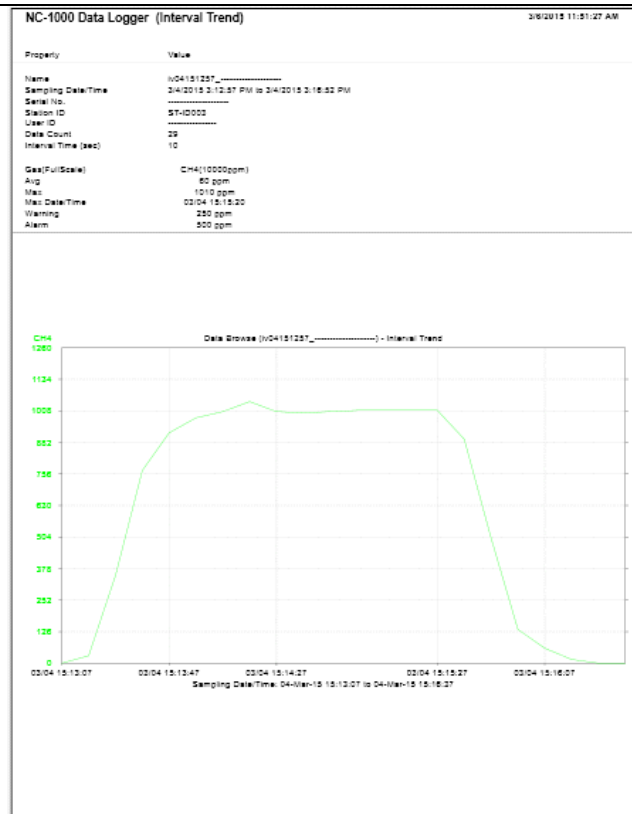
The Printer List screen is displayed. Select the printer to use and click the OK button.



Click the OK button to start the printout.

Click the Cancel button to cancel the printout and return to the previous screen.

Printout example (graph printout)



Printout example (table printout)

NC-1000 Data Logger (Interval Trend) 3/6/2015 11:51:28 AM

Property	Value
Name	NC4151257_
Sampling Date/Time	3/4/2015 3:12:57 PM to 3/4/2015 3:16:52 PM
Serial No.	-----
Station ID	ST-H0003
User ID	-----
Data Count	29
Interval Time (sec)	10
Gas(FullScale)	CH4(10000ppm)
Avg	80 ppm
Max	1010 ppm
Max. Date/Time	03/04 15:15:20
Warning	250 ppm
Alarm	500 ppm

No	Date/Time	CH4(10000ppm)
1	3/4/2015 3:12:57 PM	AIR
2	3/4/2015 3:13:04 PM	CAL ON
3	3/4/2015 3:13:07 PM	0 ppm
4	3/4/2015 3:13:17 PM	30 ppm
5	3/4/2015 3:13:27 PM	350 ppm
6	3/4/2015 3:13:37 PM	770 ppm
7	3/4/2015 3:13:47 PM	920 ppm
8	3/4/2015 3:13:57 PM	920 ppm
9	3/4/2015 3:14:07 PM	1005 ppm
10	3/4/2015 3:14:17 PM	1045 ppm
11	3/4/2015 3:14:27 PM	1005 ppm
12	3/4/2015 3:14:37 PM	1000 ppm
13	3/4/2015 3:14:47 PM	1005 ppm
14	3/4/2015 3:14:57 PM	1010 ppm
15	3/4/2015 3:15:07 PM	1010 ppm
16	3/4/2015 3:15:17 PM	1010 ppm
17	3/4/2015 3:15:20 PM	CAL OFF
18	3/4/2015 3:15:20 PM	ALARM
19	3/4/2015 3:15:20 PM	WARNING
20	3/4/2015 3:15:27 PM	1010 ppm
21	3/4/2015 3:15:37 PM	850 ppm
22	3/4/2015 3:15:47 PM	500 ppm
23	3/4/2015 3:15:50 PM	NORMAL
24	3/4/2015 3:15:57 PM	135 ppm
25	3/4/2015 3:16:07 PM	80 ppm
26	3/4/2015 3:16:17 PM	15 ppm
27	3/4/2015 3:16:21 PM	AIR
28	3/4/2015 3:16:27 PM	0 ppm
29	3/4/2015 3:16:27 PM	0 ppm

Printout example (calibration history)

NC-1000 Data Logger (Calibration History) 3/6/2015 11:51:57 AM

Property	Value
Serial No.	-----
Station ID	ST-H0003
User ID	-----
Last Download	3/5/2015 11:29:52 AM

No	Date/Time	Gas	CH4(100ppm)
1	3/4/2015 3:02:57 PM	Before	800 ppm
		After	800 ppm
2	3/4/2015 3:14:45 PM	Before	1000 ppm
		After	1010 ppm
3	3/4/2015 3:14:25 PM	Before	975 ppm
		After	1000 ppm
4	3/4/2015 3:11:57 PM	Before	0 ppm
		After	-----
5	3/4/2015 3:10:13 PM	Before	0 ppm
		After	-----
6	3/4/2015 3:09:49 PM	Before	0 ppm
		After	-----
7	3/4/2015 1:57:57 PM	Before	1045 ppm
		After	1000 ppm
8	3/4/2015 1:57:31 PM	Before	0 ppm
		After	-----

Printout example (alarm events)

NC-1000 Data Logger (Alarm Event) 3/6/2015 11:52:12 AM

Property	Value
Serial No.	-----
Station ID	ST-H0003
User ID	-----
Last Download	3/5/2015 11:29:51 AM

No	Date/Time	Gas	Event
1	3/4/2015 3:02:12 PM	CH4(10000ppm)	WARNING
2	3/4/2015 3:02:12 PM	CH4(10000ppm)	ALARM
3	3/4/2015 3:15:20 PM	CH4(10000ppm)	WARNING
4	3/4/2015 3:15:20 PM	CH4(10000ppm)	ALARM
5	3/4/2015 1:54:03 PM	CH4(10000ppm)	ALARM
6	3/4/2015 1:52:48 PM	CH4(10000ppm)	WARNING

Printout example (bump test)

NC-1000 Data Logger (Bump Test) 3/6/2015 11:52:28 AM

Property	Value
Serial No.	-----
Station ID	ST-H0003
User ID	-----
Last Download	3/5/2015 11:29:52 AM

No	Date/Time	Gas	CH4(100ppm)
1	3/4/2015 3:02:32 PM	Test Result	780 ppm
		Concentration	800 ppm
		Judge	PASS
2	3/4/2015 3:13:50 PM	Test Result	975 ppm
		Concentration	1000 ppm
		Judge	PASS
3	3/4/2015 2:09:19 PM	Test Result	2 ppm
		Concentration	10000 ppm
		Judge	FAIL

Printout example (trouble events)	Printout example (snapshot)																																																				
<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">NC-1000 Data Logger (Trouble Event) 3/8/2015 11:53:34 AM</p> <hr/> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Property</td> <td style="width: 70%;">Value</td> </tr> <tr> <td>Serial No.</td> <td>ST-0000</td> </tr> <tr> <td>Station ID</td> <td>ST-0000</td> </tr> <tr> <td>User ID</td> <td>ST-0000</td> </tr> <tr> <td>Last Download</td> <td>2/5/2015 11:33:52 AM</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No</th> <th>DateTime</th> <th>Gas/Body</th> <th>Event</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2/4/2015 5:04:23 PM</td> <td>Body</td> <td>Fail(FLOW)</td> </tr> <tr> <td>2</td> <td>2/4/2015 2:10:13 PM</td> <td>CH4(10000ppm)</td> <td>Fail(Span)</td> </tr> <tr> <td>3</td> <td>2/4/2015 2:09:50 PM</td> <td>CH4(10000ppm)</td> <td>Fail(Span)</td> </tr> <tr> <td>4</td> <td>2/4/2015 1:43:20 PM</td> <td>Body</td> <td>Fail(FLOW)</td> </tr> <tr> <td>5</td> <td>1/11/1900</td> <td>Body</td> <td>Fail(CLC)</td> </tr> </tbody> </table> </div>	Property	Value	Serial No.	ST-0000	Station ID	ST-0000	User ID	ST-0000	Last Download	2/5/2015 11:33:52 AM	No	DateTime	Gas/Body	Event	1	2/4/2015 5:04:23 PM	Body	Fail(FLOW)	2	2/4/2015 2:10:13 PM	CH4(10000ppm)	Fail(Span)	3	2/4/2015 2:09:50 PM	CH4(10000ppm)	Fail(Span)	4	2/4/2015 1:43:20 PM	Body	Fail(FLOW)	5	1/11/1900	Body	Fail(CLC)	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">NC-1000 Data Logger (Snap Shot) 3/8/2015 11:53:47 AM</p> <hr/> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Property</td> <td style="width: 70%;">Value</td> </tr> <tr> <td>Name</td> <td>ss04154355_</td> </tr> <tr> <td>Sampling DateTime</td> <td>2/4/2015 1:43:55 PM</td> </tr> <tr> <td>Serial No.</td> <td>ST-0000</td> </tr> <tr> <td>Station ID</td> <td>ST-0000</td> </tr> <tr> <td>User ID</td> <td>ST-0000</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No</th> <th>DateTime</th> <th>I-CH4(10)(10000ppm)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2/4/2015 1:43:55 PM</td> <td>0 ppm</td> </tr> </tbody> </table> </div>	Property	Value	Name	ss04154355_	Sampling DateTime	2/4/2015 1:43:55 PM	Serial No.	ST-0000	Station ID	ST-0000	User ID	ST-0000	No	DateTime	I-CH4(10)(10000ppm)	1	2/4/2015 1:43:55 PM	0 ppm
Property	Value																																																				
Serial No.	ST-0000																																																				
Station ID	ST-0000																																																				
User ID	ST-0000																																																				
Last Download	2/5/2015 11:33:52 AM																																																				
No	DateTime	Gas/Body	Event																																																		
1	2/4/2015 5:04:23 PM	Body	Fail(FLOW)																																																		
2	2/4/2015 2:10:13 PM	CH4(10000ppm)	Fail(Span)																																																		
3	2/4/2015 2:09:50 PM	CH4(10000ppm)	Fail(Span)																																																		
4	2/4/2015 1:43:20 PM	Body	Fail(FLOW)																																																		
5	1/11/1900	Body	Fail(CLC)																																																		
Property	Value																																																				
Name	ss04154355_																																																				
Sampling DateTime	2/4/2015 1:43:55 PM																																																				
Serial No.	ST-0000																																																				
Station ID	ST-0000																																																				
User ID	ST-0000																																																				
No	DateTime	I-CH4(10)(10000ppm)																																																			
1	2/4/2015 1:43:55 PM	0 ppm																																																			

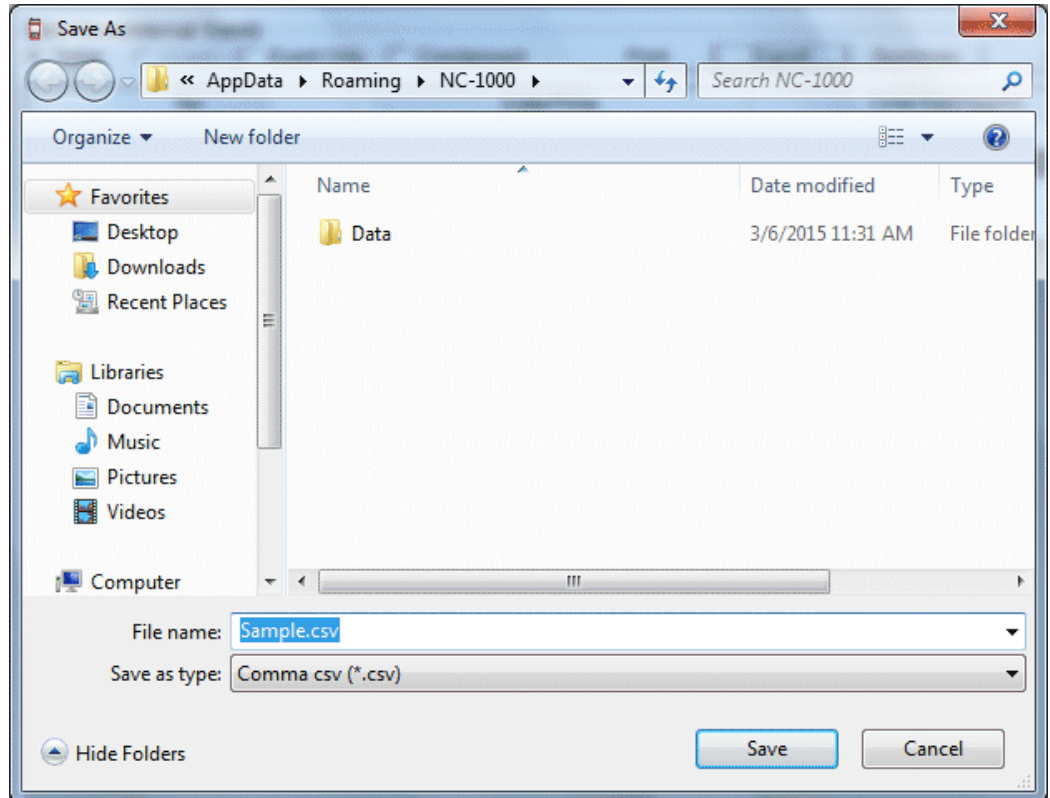
Notes on printer settings

- (1) Detailed printer settings depend on the printer used. Please see the operation manual of the printer.
- (2) This program does not support Print Area setting. Therefore, usage such as printing only part of the selected data is not possible.
- (3) Copies can be changed only when the setting is available from the printer.
 When the setting is changed in this way, the change affects other applications subsequently used. (For example, when Copies is changed to 2, a printout operation from another application might also result in two copies.)
 If Print Setting is changed in this program, when a printout is required from another application, check Print Setting of that application.

(3) Save to a file

• Save

1. Click the Save button on the screen.



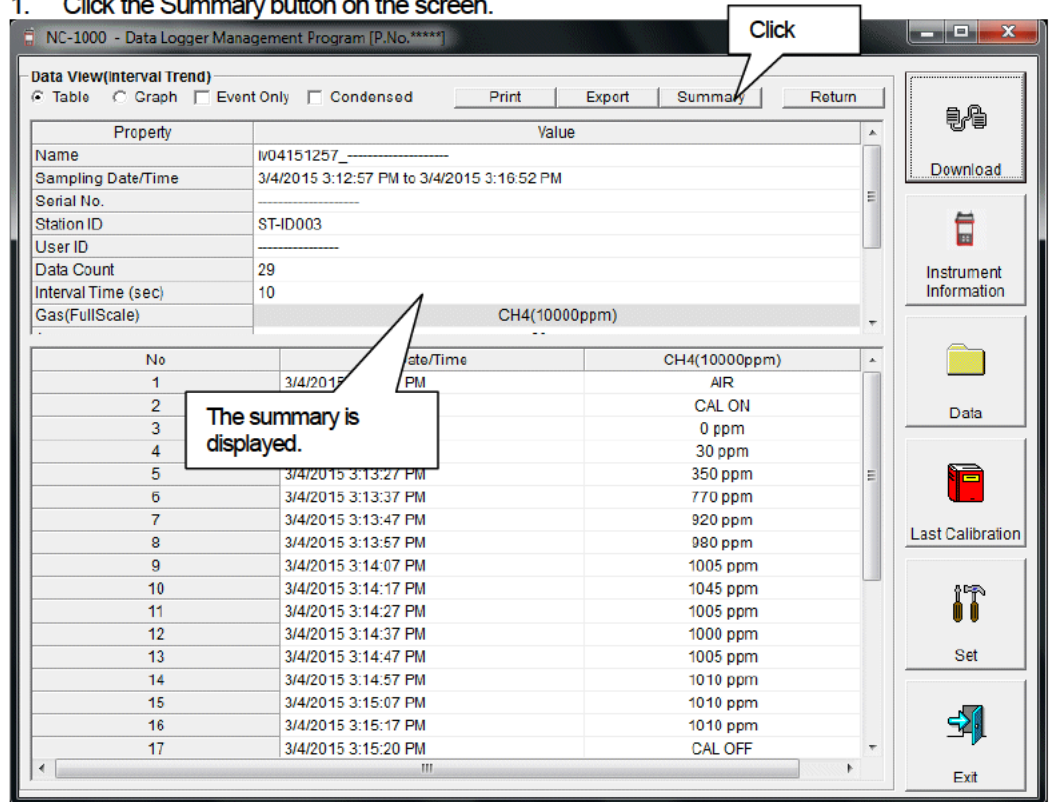
Specify the location and the file name, and click the Save button to store the data.
Click the Cancel button to cancel the save operation.

CAUTION:
When a table is displayed, the content of the table is saved in the Excel CSV format.
When a graph is displayed, the bitmap of the graph is saved.

(4) To view data summary simultaneously

• Summary view

1. Click the Summary button on the screen.



When the Summary button is clicked, the summary view is cleared.

(5) Table details

• **Event color**

The cells that display gas concentration are painted according to the event occurred at that time.

1010 ppm
1010 ppm
CAL OFF
ALARM
WARNING
1010 ppm
895 ppm
500 ppm
NORMAL
135 ppm
60 ppm
15 ppm
AIR
0 ppm

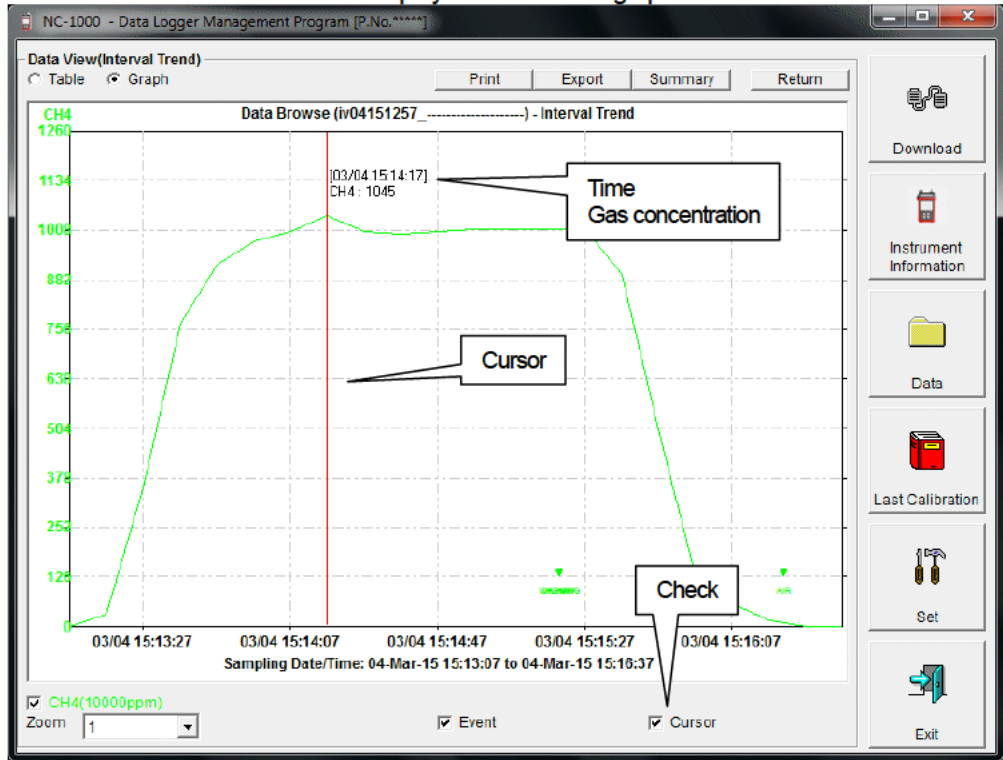
The cells are identified by background color.

- | | | |
|---------|--------------|-------------------------------|
| FAIL | : Gray | Fault |
| WARNING | : Orange | First alarm |
| ALARM | : Red | Second alarm |
| NORMAL | : Deep green | Recovery from the above state |
| OVER | : Light red | Over full scale |

(6) Graph details

• **Cursor**

1. Click the Cursor checkbox to display a cursor on the graph.



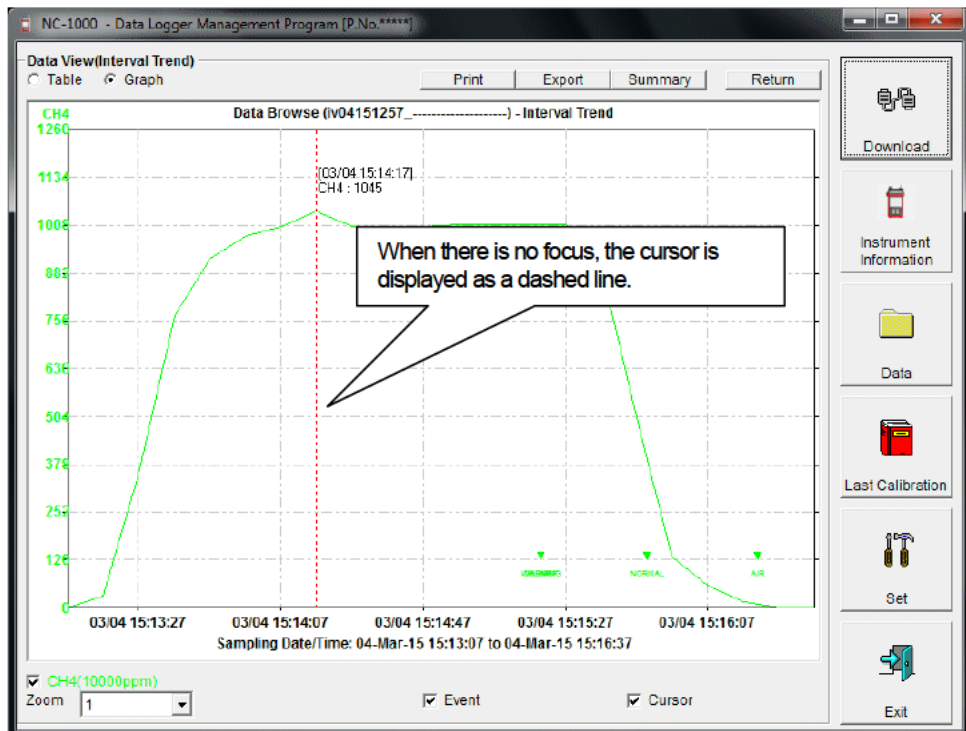
Use the left and right keys to move the cursor left and right, and the up and down keys to move the time and concentration views up and down.

The Shift key can be used together to speed up the cursor.

CAUTION:

Cursor operation is not available when a window irrelevant to the program is opened and the focus is moved outside the graph area.

The cursor itself is displayed as a dashed line. To restore focus, click inside the graph area.



3-5. Last Calibration screen

The expiration dates of the data downloaded in the past can be checked. The bump test is displayed similarly.

(1) Change displayed contents

(2) Output to a printer

(3) Delete data
(4) Change password

Click this button

About bump test

No.	SerialNo	UserID	StationID	CH4	Last Download
1			ST-ID001	1/1/2008	3/6/2015 11:57:34 AM

No.	SerialNo	UserID	StationID	CH4	Last Download
1			ST-ID001	4/1/2011	3/6/2015 11:57:34 AM

CAUTION: This table is read-only. Modification of the table is not supported.

(1) Change displayed contents

• **Expired data**

1. Click the Need Calibration radio button.

No.	SerialNo	UserID	StationID	CH4	Last Download
1	-----	-----	ST-ID001	1/1/2008	3/6/2015 11:57:34 AM

Among the NC-1000 main units connected in the past (in other words, the main units from which Instrument Information data is downloaded), this table extracts and displays the records which have an expired calibration date.

• **List view**

1. Click the Calibration Date radio button.

No.	SerialNo	UserID	StationID	CH4	Last Download
1	-----	-----	ST-ID001	1/1/2008	3/6/2015 11:57:34 AM
2	-----	-----	ST-ID003	3/4/2015 5:02:57 PM	3/5/2015 11:39:37 AM

Data for the NC-1000 main units connected in the past is listed. (Of the data with the same serial number, user ID and Station ID, the newest data is displayed.)

• **Detailed view**

1. Click the Calibration Record radio button.

No.	SerialNo	UserID	StationID	Gas	Before	After	A.Cal.	Cal.Due(Day)
1	-----	-----	ST-ID001	CH4	0	0	5000	Now
2	-----	-----	ST-ID003	CH4	800	800	800	Remaining 8

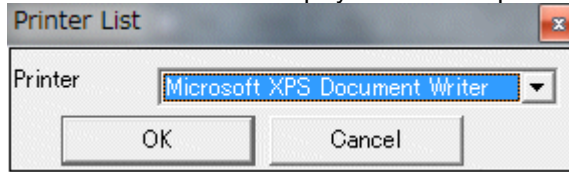
Data for NC-1000 main units connected in the past is listed in the same format as the Instrument Information screen.

For details on the displayed items, see "3-2. Instrument Information screen, (3) Calibration history information".

(2) Output to a printer

• Print

The last calibration date of each unit can be printed out using Need Calibration or Calibration Date. The Printer List screen is displayed. Select the printer to use and click the OK button.

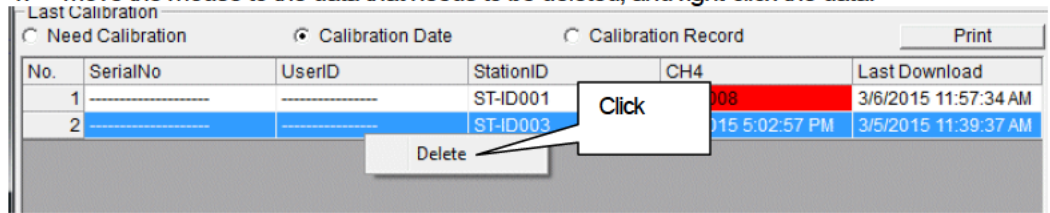


NC-1000 Data Logger (Last Calibration)						3/6/2015 12:00:01 PM
No.	SerialNo	UserID	StationID	CH4	Last Download	
1	-----	-----	ST-ID001	1/1/2008	3/6/2015 11:57:34 AM	
2	-----	-----	ST-ID003	3/4/2015 5:02:57 PM	3/5/2015 11:39:37 AM	

(3) Delete data

• Delete

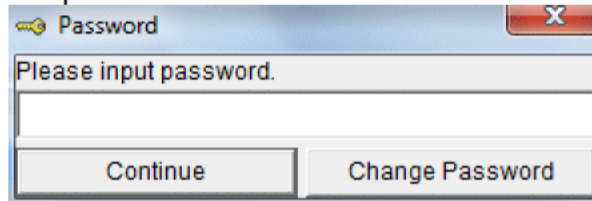
1. Move the mouse to the data that needs to be deleted, and right-click the data.



CAUTION: Deletion of data is available only in Need Calibration and Calibration Date views. It is not available in the Calibration Record view.

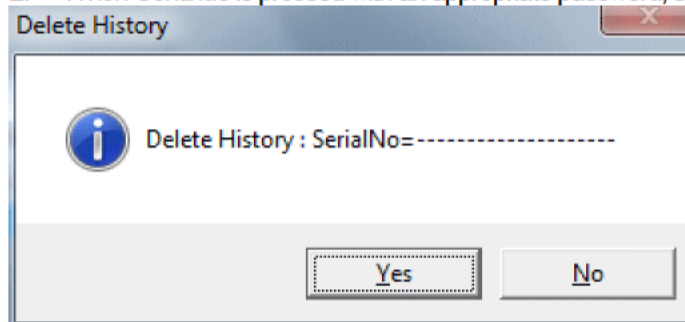
• Input password

1. When the Delete button is clicked, the Password dialog is prompted. Enter the password and press the Continue button.



CAUTION: When Continue is pressed without entering the password, the delete operation is canceled.

2. When Continue is pressed with an appropriate password, the following message is displayed.

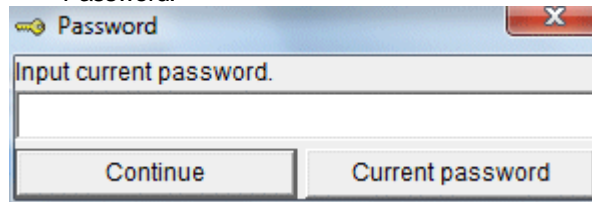


Click the Yes button to delete the data.
Click the No button to cancel deletion of data.

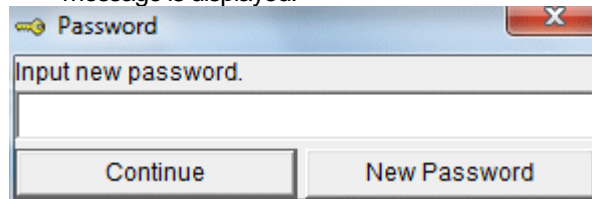
(4) Change password

• **Input password**

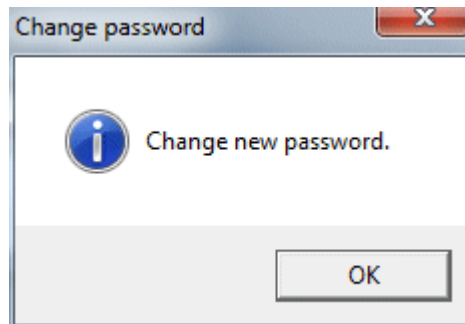
1. Display the Password dialog in the same way as deleting the data, and click Change Password.



2. Enter an appropriate password and click the Current password button. The following message is displayed.



3. Enter the new password and click the New Password button.
4. The Password dialog is prompted again. Enter the same new password and click New Password.



Click OK to update the password.

CAUTION: The password immediately after installation is "Rki". (Case-sensitive)

3-6. Set screen

In this screen, display settings of the screen and the detailed settings of the unit can be specified.

(1) Set font and graph colors

(2) Change status of the main unit

(2) Edit station list

(2) Set time

(3) Send updates to the NC-1000 main unit

Click this button

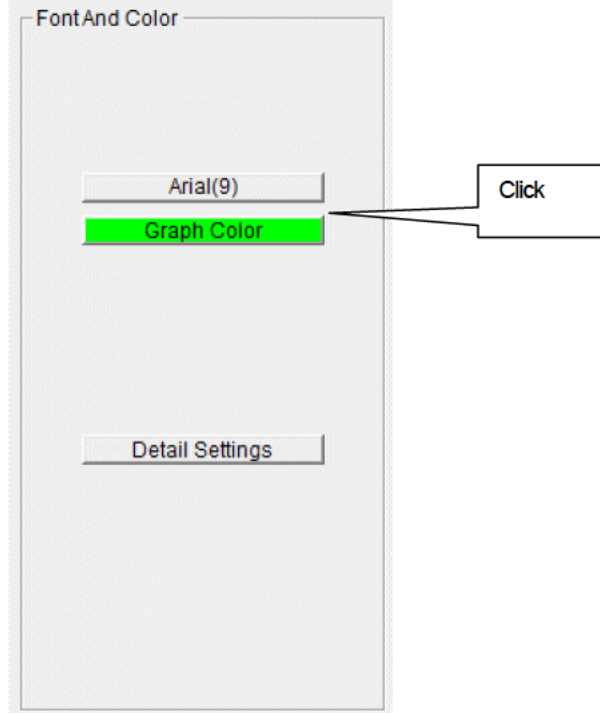
Sensor	Warning	Alarm	A
Gas	250	500	0000
CH4(10000ppm)			

CAUTION: The data specified and/or changed must be sent to the NC-1000 main unit using the Update button.
CAUTION: The font setting is applied on the next startup.

(1) Change font and graph colors

- Change the font

1. Click the area that displays the font.



The font setting dialog is displayed. Specify an appropriate font.

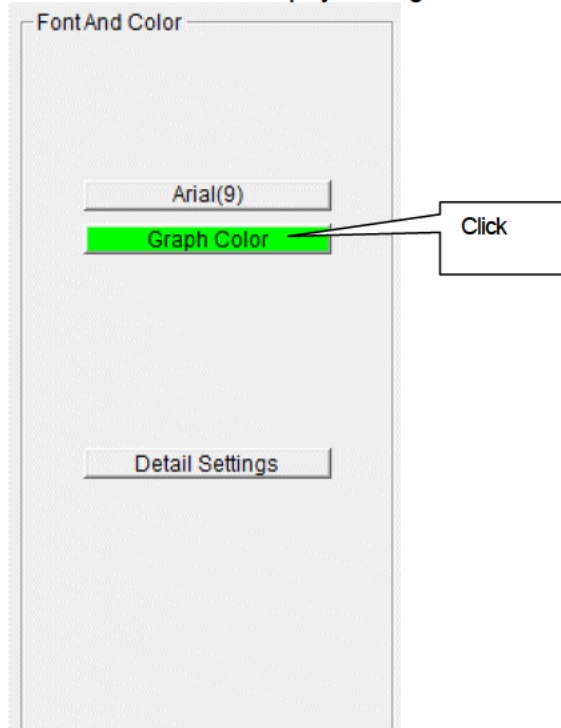
CAUTION:

When an extremely large font is used, the screen might be hard to view. This change will be effective on the next startup.

- Change the graph color

The display colors mapped for the gases in the graph can be changed.

1. Click the area that displays each gas.

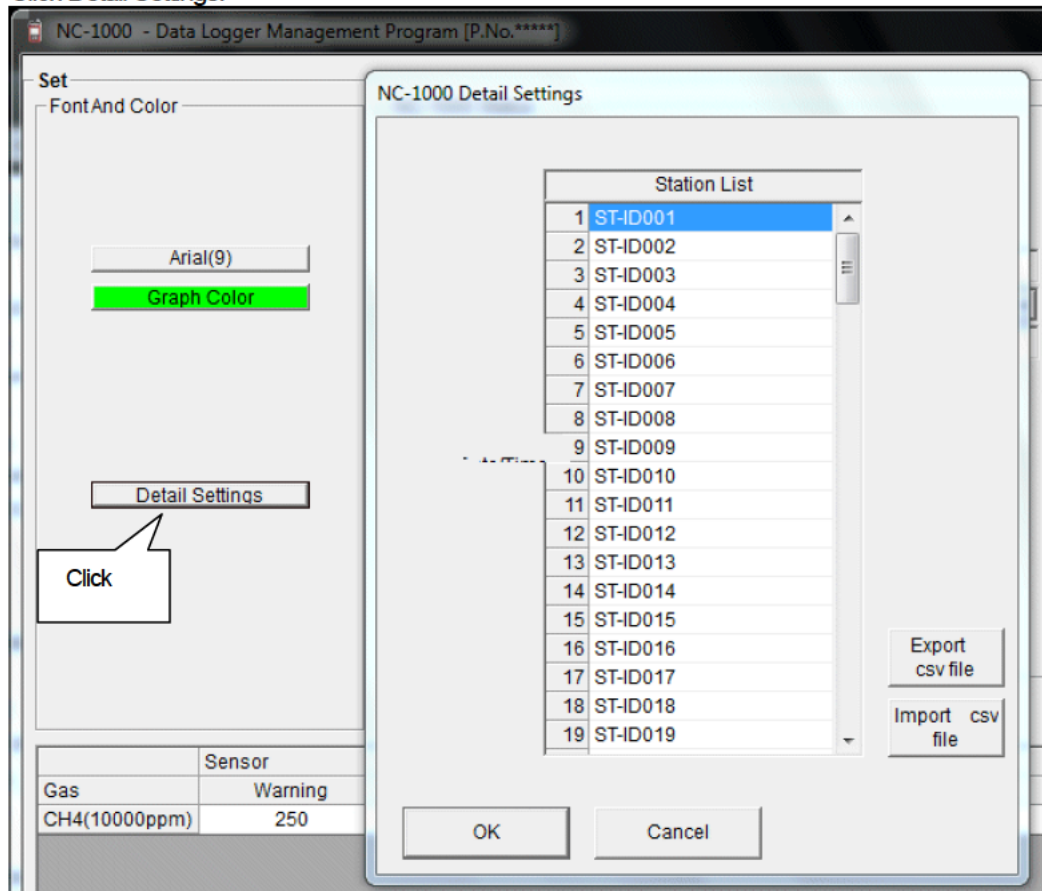


The color selection dialog is displayed. Specify an appropriate color.

(2) Change status of the main unit

• Edit station list

1. Edit the station list.
Click Detail Settings.



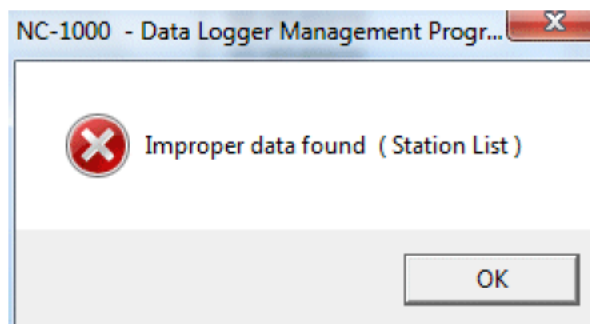
The edit dialog is displayed. The station list contains stations up to Number 128.
Up to 16 characters of alphabets, numerics, spaces, hyphens and slashes can be entered.

* In the NC-1000 main unit, only the first eight characters are displayed. We recommend to use up to eight characters of only upper-case alphabets and/or numerics.

Export csv file: The data is exported to a file. A text file is created using the "Number,data" format.

Import csv file: Data is loaded from a text file that follows the "Number,data" format. If the data contains unsupported letters, or the data is too long, the background color of the corresponding cells is changed to red.

* If any cells have red background, **OK** cannot be selected.



- Change

2. In the status area, change the desired data.

The contents of Serial No. (20 Characters) and User ID can be changed.

Interval Trend Time (Sec) and Station ID (16 Characters) can be selected and changed from the list.

The Date/Time Set button can be used to align the internal clock of the NC-1000 main unit (NC-1000 Date/Time) to the set time of the PC (PC Date/Time).

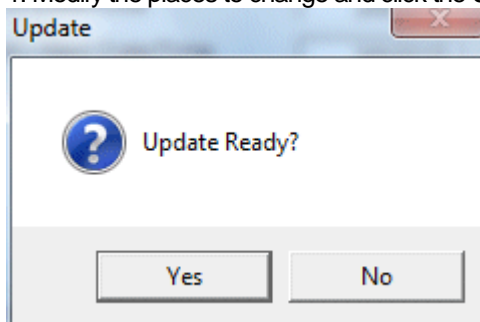
CAUTION: The date/time areas cannot be entered directly.

CAUTION: The settings of the NC-1000 main unit are not modified except Date/Time Set by this change. Make sure to click Update to send the change request process to the main unit.

(3) Send updates to the NC-1000 main unit

- Send updates

1. Modify the places to change and click the Update button.



When the Yes button is clicked, the changes are sent to the NC-1000 main unit and stored there. When the No button is clicked, update is canceled.

CAUTION: The changes cannot be undone. Before clicking Update, it is possible to revert to the data stored in the main unit by clicking the Instrument Information button on the Download screen to download the instrument information data.

4

Data Maintenance

Depending on usage (such as loading data many times in a single day), the number of data might increase drastically. In such a case, it might be difficult just to find the desired data. In addition, there is a possibility of losing valuable data caused by an unexpected trouble of the PC.

To prepare for such unexpected events, a periodical backup of the data is recommended.

4-1. Details of data storage structure

Data is stored in the installation folder of the NC-1000 program.

- 1) File name: NC1000.mdb
File type: Microsoft Jet 3.6 database file
- 2) File name: Data
File type: Folder Trend data files are organized under year/month folders

4-2. Backup

Although it depends on usage, we recommend the data to be copied to another hard disk device or an auxiliary storage device (such as an MO drive or CD-R drive).

To restore data, copy it to the installation folder of the NC-1000 executable. The program searches for data on startup and the data will be available to view.

5

Operating Precautions

When using the program, take sufficient considerations on the following points:

- (1) When downloading data, check that NC-1000 is placed at an appropriate position. If the position is not appropriate, download cannot be performed properly.
- (2) When downloading, avoid similar operations using another application. (For example, performing IR communication during data download)
- (3) Do not kill the program (for example, by using Ctrl + Alt + Del). This program saves setting parameters on the shutdown process to prepare for the next startup. Therefore, if the program is killed, the next startup might fail.
- (4) Do not modify a data file directly.

6

Troubleshooting

Symptoms	Causes	Solutions
Communication is not possible.	The position of the main unit is inappropriate. An obstacle is in the way.	Change the position of the main unit.
	There is another device that uses IR.	Turn off the other devices, or prevent its interference.
Error occurs during communication.	There is a scattered light outside.	Eliminate the device that uses IR.
	The NC-1000 main unit moved during communication.	Do not move the unit during communication.
Something is wrong in the communication data.	There is a scattered light outside.	Eliminate the device that uses IR.

If an error still persists despite the above actions, please contact RIKEN KEIKI.

7

IrDA Specifications

7-1. About infrared communication

Communication with the main unit is performed via infrared communication (IrDA protocol).

Check that the computer to be used is capable of infrared communication.

Also, place the units so the infrared communication port of the main unit and the communication port of the PC directly face each other, and prevent interference of other lights.

CAUTION:

This program can establish communication with the NC-1000 main unit only in an environment with IrDA enabled. Check that the PC has a built-in IrDA device, and that it is enabled.

If the computer does not have a built-in IrDA device (this applies to most desktop PC and some notebook PC), use a separately sold IrDA-USB converter.

7-2. Display of communication ready status

At the start of communication, the operating system recognizes existence of an infrared device and displays an icon on the task bar.

By that icon, the communication status can be understood to some extent.

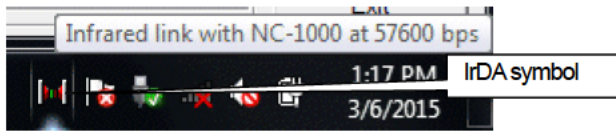
CAUTION: The displayed content might differ depending on the operating system and IrDA driver settings.

7-2-1. Task bar icon when the operating system recognizes NC-1000



The IrDA symbol is displayed, and when the cursor is pointed over the symbol, the message "NC-1000 is in range" is displayed.

7-2-2. Task bar icon when communication between the data logger program and the NC-1000 main unit is in progress



The IrDA symbol changes to an animation icon that shows communication, and when the cursor is pointed over the symbol, the message "Wireless link with NC-1000 at xxxx bps" is displayed.

* "xxxx" shows communication rate, which is normally 57600 bps. Depending on the environment, the rate might drop to a value around 38400 bps.

CAUTION:

Due to overhead in internal process of the NC-1000 main unit and/or the data logger program, there is little difference in overall communication time if the communication rate is 38400 bps or above. This is because a relatively long time is required to create data within the NC-1000 main unit and to analyze the downloaded data by the data logger program.

8

File Structure

This chapter explains the details about file contents at installation and during operation.

8-1. Current directory immediately after installation

File name	Details
NC1000.exe	NC-1000 main unit
RklrDA11.ocx	Infrared communication component
RKComm.ocx	Serial communication component
Filemove.avi	Animation file that shows that data download is in progress

8-2. Current directory during operation

File name	Details
NC1000.exe	NC-1000 main unit
RklrDA11.ocx	Infrared communication component
RKComm.ocx	Serial communication component
Filemove.avi	Animation file that shows that data download is in progress
NC1000.ini	NC-1000 initialization file
NC1000.dat	File for data downloading
NC1000.mdb	Database file (Microsoft Jet 3.6 database)
Data	Save directory for trend data files
Seriallog.log	Recording of data that flowed through communication port since startup of the program (for investigation and maintenance)

CAUTION: Files and directories below the double line are created after startup of the program.

9

Software Specifications

Name of product (name of program)	NC-1000 Data Logger Management Program
Model	SW-NC-1000
Executable file name	NC1000.EXE
Supported OS	Microsoft Windows 7 Windows 8 Windows 10
Program capacity	Main program: Approx. 3 MB/Library: Approx. 5.2 MB (Uses up to 40 MB of disk space on installation)
Communication of the main unit	Infrared (conforming to IrDA 1.1 protocol) Standard communication settings Baud rate: 57600 bps (maximum)
Transfer time	Maximum 3 minutes (standard communication setting, with maximum amount of data)
Medium	One CD-ROM
Package contents	Operating Manual (this document) Product warranty and registration card License agreement