# **INSTRUCTION MANUAL**

Data Analysis software for H2S Data Logger ANASYS Ver6.2

GHS-PC-3

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IM15GHSPC3E5

## Contents

1. II	NTRODUCTION	4
1.1	Terms of use	4
1.2	Features	5
1.3	System requirements	6
2. E	BEFORE INITIAL USE	6
2.1	Installation of dedicated software (ANASYS)	6
	ninstallation	
V	ersion upgrade	1
2.2	Installation of device driver	8
3. V	VINDOW1	3
4. C	DPERATION14	4
4.1	Logging setting1	4
4.2	Setting date and time of the instrument1	7
4.3	Downloading logging data1	7
4.4	Instrument information2	0
5.	FILE OPERATION2	1
5.1	Open logging file2	2
5.2	Create CSV file	3
6.	GRAPH VIEW24	4
7. (	BRAPH	5

7.1	Graph appearance	25
7.2	Data table	26
7.3	Zooming the time scale	27
7.4	Change the time display range	28
7.5	Set Concentration display range	29
7.6	Set temperature display range	29
7.7	Label	30
Ti	Title	30
С	Comment	30
Α	Arrow	31
7.8	Data Analysis	32
8. C	OPTIONS	33
8.1	Set boundary line	33
8.2	Display setting	34
9. N	MENU LIST	35
9.1	File	35
9.2	Edit	35
9.3	Communication	35
9.4	Window	36
9.5	Label	36
9.6	Zooming	36
9.7	Data	36
9.8	Option	37

9.9 Help	37
10. SPECIFICATIONS	37
10.1 Specifications	37
11. TROUBLE SHOOTING	38

## 1. Introduction

Thank you very much for purchasing ANASYS.

This software is dedicated software for Gastec H2S data logger Model GHS-8AT and GHS-8AT-EX. This software enables downloading logging data from the instrument to analyze environmental conditions on the computer. Carefully read and understand the manual before use of this software.

Pictures and illustrations in this manual may be different from the actual instruments. Windows appearances are different by operation systems.

Software or contents of this manual are subject to change without notice.

In this manual, precaution symbols are used as defined below:

$\triangle$ NOTE		This indicates advice for proper use of this instrument.
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#### 1.1 Terms of use

## [Disclaimer]

- Gastec Corporation assumes no warranties whatsoever for any direct or indirect damages, loss, prejudice or emotional distress caused by use of ANASYS.
- Gastec Corporation may at any time, for any reason modify or discontinue the availability of ANASYS which shall not be liable to you for any direct or indirect damages, loss, prejudice or emotional distress caused by modifications or discontinuation.

## [Copyright]

- ANASYS software and its relative documents are the copy right of Gastec Corporation.
- · Do not modify ANASYS software.

#### 1.2 Features

#### Comminucation

Downloading logging data and save the configuration to the instrument from your computer via USB 2.0 interface.

## Create graph

You can create graph from logging data. You can zoom the scales, add title, arrow symbols, and comment to the graph.

## Saving the data

You can save and read the logging data and graph data.

#### Printout

The graph can be printed out.

## Display two graphs

Two graphs can be displayed one above the other to compare them. For example, two weeks of continuous data can de devided into two graphs, and the graph of the first week data can be above the graph of second week data to compare them easily.

## Layer graphs

Up to 10 logging data graph can be shown in one graph area. The data from different site can be compared easily.

#### Create CSV file

Logging data can be converted into CSV file which is editable by speard file software.

## 1.3 System requirements

Operation system	Windows 8.1, 10, 11
Interface	USB2.0
Optical drive	CD-ROM drive

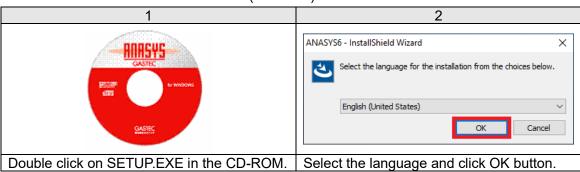
## 2. Before initial use

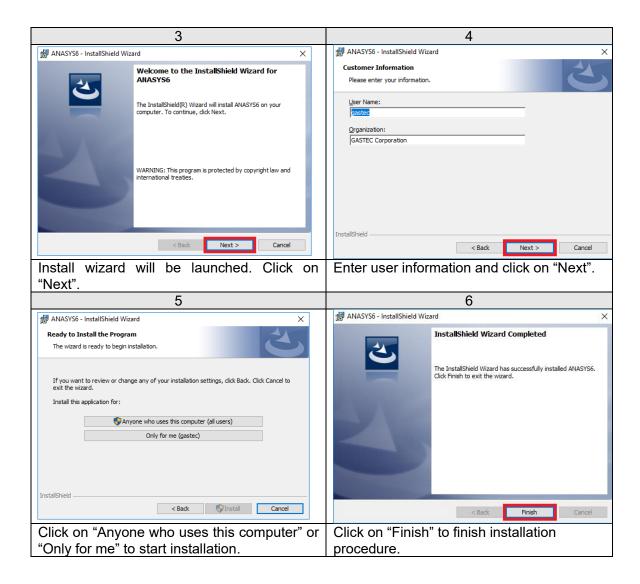
To convert the logged data to graph or chart, dedicated software "ANASYS" is needed to be installed to your computer. Data is downloaded via USB 2.0 interface. Before connecting the instrument and a computer, install device driver on the computer. Refer to the instruction manual of the instrument to prepare the instrument.

## <Requisite materials>

- · Computer (with USB 2.0 interface and CD-ROM drive)
- USB connection cable (accessory of the instrument)
- Install CD (accessory of the instrument)

## 2.1 Installation of dedicated software (ANASYS)





#### Uninstallation

If you wish to uninstall the program, use "Add or Remove Programs" in Control Panel.

## Version upgrade

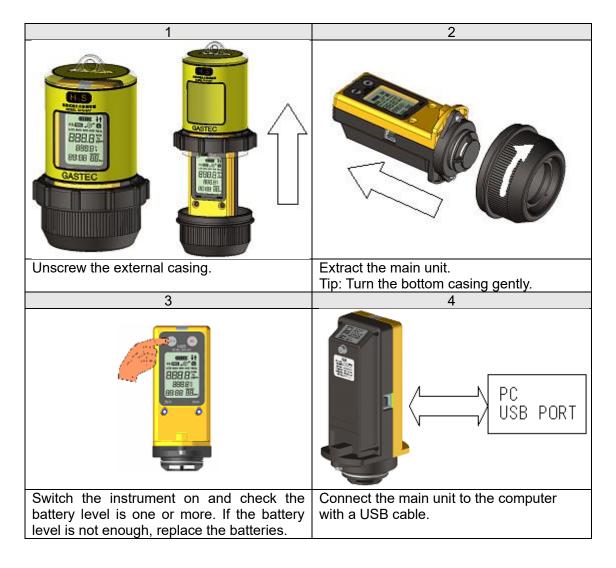
Likewise the initial installation, click on SETUP.EXE of the latest version. Version upgrading will start automatically.

#### 2.2 Installation of device driver

This instrument can communicate with a computer via USB 2.0 interface. To establish communication, the device driver must be installed on the computer.

## $\triangle$ NOTE

 Check the battery level before connecting the instrument to the computer (should be one cell or more). If the battery is low, the instrument may not work properly or logged data may be damaged.

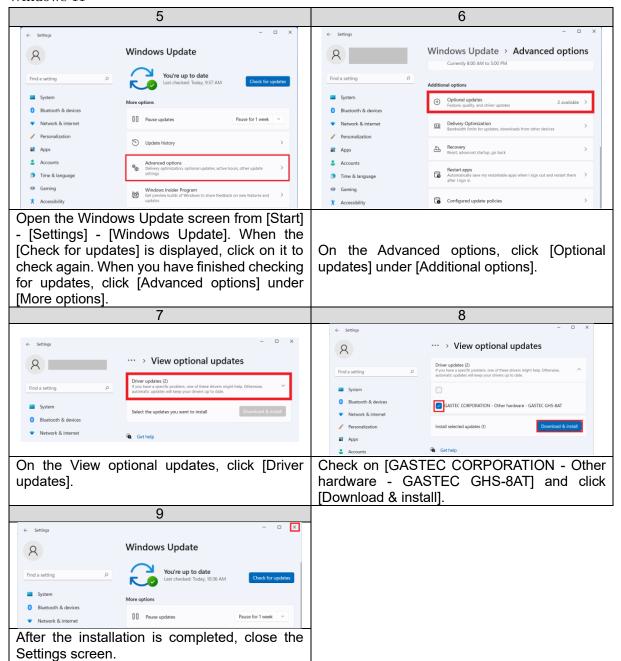


TIP: If the instrument is connected via a USB hub, the instrument may be not recognized by the computer.

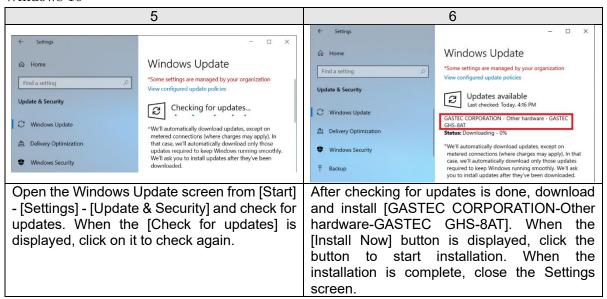
## ■In the case of online.

Install the driver from the Windows Update.

#### Windows 11

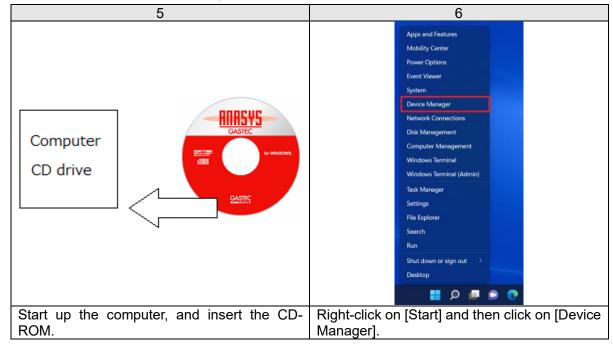


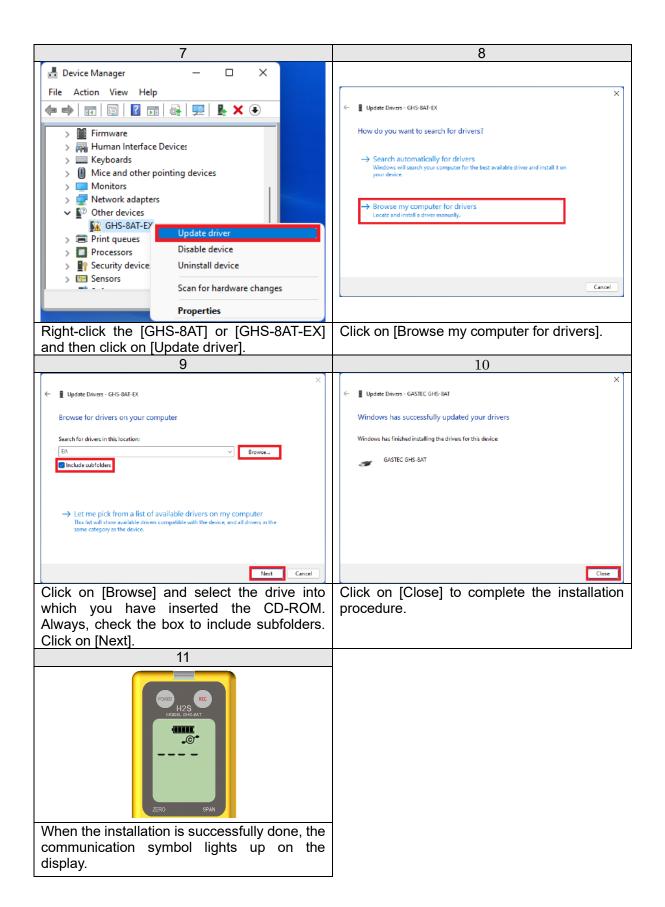
#### Windows 10



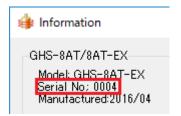
## ■If the installation failed, or if offline.

The driver can be installed using the CD-ROM.

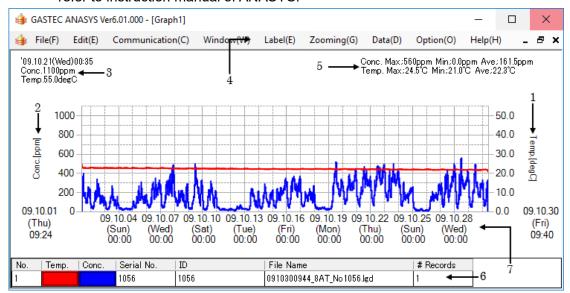




Verify the communication status on ANASYS. Launch ANASYS and click on "Communication" and then "Information". Check if the serial number indicated on the top of the instrument body corresponds to the Serial No shown in the information window.



A sample graph is shown below with explanation. For the details of data analysis, refer to instruction manual of ANASYS.



1 Temperature scale

2 Concentration scale

3 Cursor pointing value

4 Menu bar

5 Max, Min, and Ave

6 Graph properties

7 Time scale

Shows temperature value. The range is configurable.

Shows concentration value. The range is configurable.

Shows values of temperature, time, and concentration where the cursor is pointing.

Supplies the list of functions as a menu bar.

Shows peak, minimum, and average values of the graph. When more than one graph is drawn in the window, maximum, minimum, and average values of all the graphs are shown.

Shows properties of the graph. Color and thickness of the line

can be configured.

Shows time. The range is configurable.

## 4. Operation

## 4.1 Logging setting

The logging interval and other instrument settings can be configured from the computer.

### ■ Logging interval

The logging interval is selectable from 1, 5, 10, 15, 30, and 60 minutes. The maximum logging duration is 31 days by 1 minute intervals, 153 days by 5 minute intervals. Choose appropriate configuration in accordance with your application and the remaining memory capacity.

## ■ Log type

The LCD displays H2S concentration at every 2 seconds while data logging. The preferable type of data can be selected at the time of recording.

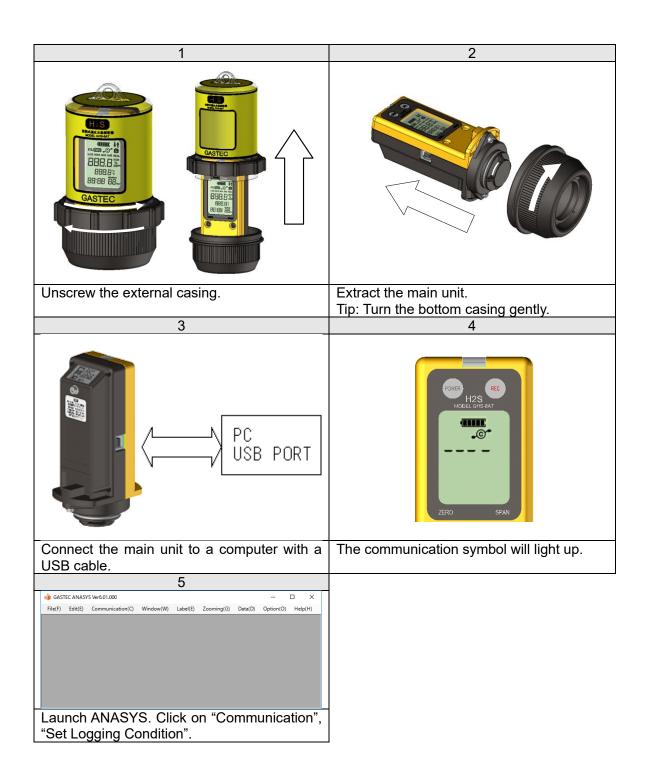
Below is the list of log types.

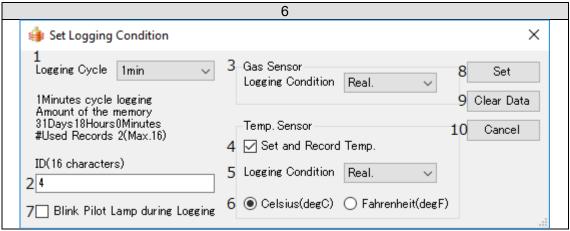
Log type		
(REAL)	Instant value of logging interval.	
(AVE)	Average value of logging interval.	
(MAX)	Peak value for the logging interval.	
(MIN)	Minimum value for the logging interval.	

Likewise, the temperature logging data type can be selected. The temperature logging can also be disabled.

## $\triangle$ NOTE

- Duration of data logging may be limited by battery level. Be sure there
  is a full battery level displayed for long-term data logging.
- 2. Even if the temperature logging is disabled, H2S concentration data logging capacity is not increased.

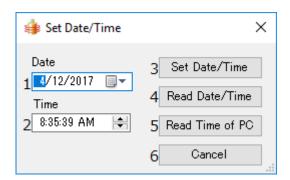




Logging configuration dialog box will appear. Set logging interval and log type. Click on "Set" to save the configuration. Click on "Clear Data" to **DELETE ALL LOGGED DATA**.

1	Logging interval	Select a logging interval from the pull-down menu.
2	ID	Give an identification name to the instrument. Up to 16 characters can be accepted. (8 characters if 2 byte characters are used)
3	H2S log type	Select a log type of H2S from the pull-down menu.
4	Temperature logging	Check the box to log temperature data. To disable the temperature logging, uncheck the box.
5	Temperature log type	Select a log type of temperature from the pull-down menu.
6	Temperature unit	For GHS-8AT-EX version 2.1 or later, select the displayed temperature in Celsius or Fahrenheit.
7	Enable pilot lamp.	Enable/Disable the pilot lamp.
8	Set	Save the configuration to the instrument.
9	Clear Data	If clicked, ALL LOGGED DATA WILL BE DELETED.
10	Cancel	Close the dialog box without saving.

## 4.2 Setting date and time of the instrument.

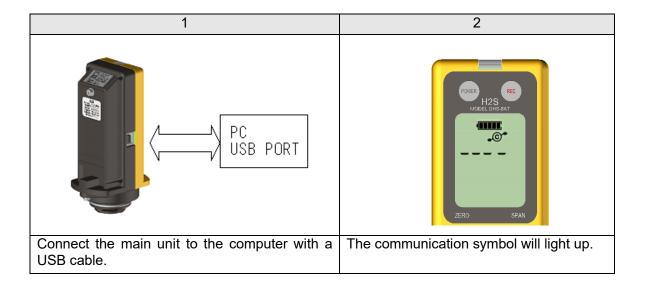


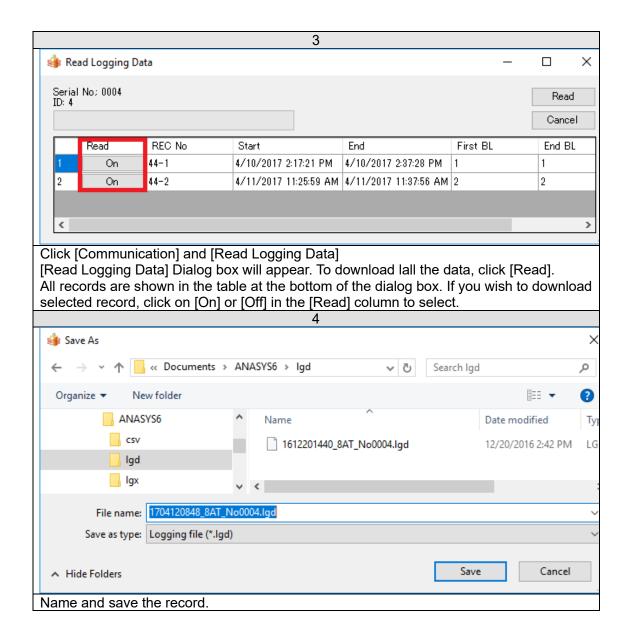
Click on [Communication] and [Set Date/Time]. The dialog box will appear.

Click on the down-arrow button and select the date from the calendar. ① Date Adjust time. Click and highlight hour, minute, and second. Enter digits ② Time or use the up-down arrows to adjust the value. Save the date and time to the instrument. ③ Set Date/Time Display the date and time of the instrument. (4) Get the instrument time Display the date and time of the computer. This date and time can be ⑤ Get PC time saved to the instrument by clicking "Set Date/Time". ⑥ Cancel Exit without saving the settings.

## 4.3 Downloading logging data

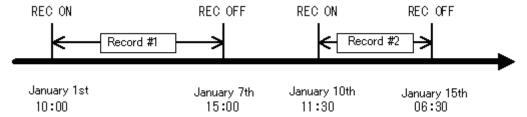
Before downloading the data, install ANASYS and device driver to the computer.





#### Records

Logged data is composed of the date and time, logged concentrations, and temperatures. This continuous data is bundled as one record by every logging session. Up to 16 records can be saved to the instrument. Be sure to check the number of records saved in the instrument before starting/stopping the data logging.



A record is terminated when;

- Data logging is stopped by pressing the REC button.
- · Data logging is automatically stopped due to a low battery.
- Data logging is automatically stopped when the instrument is connected to the computer.
- Data logging is automatically stopped due to running out of the memory.

When data logging is automatically stopped, a status message will be recorded.

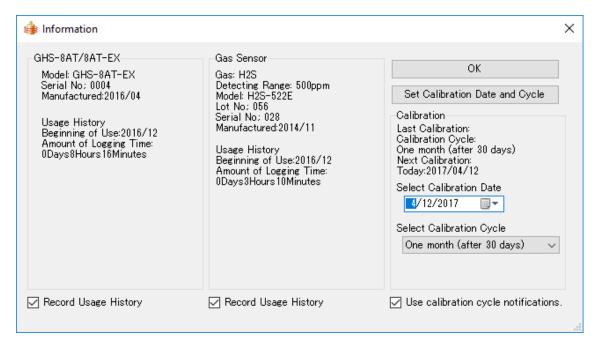
Example: Data example when the record is terminated due to a low battery.

Data No.	Date	Conc. [ppm]	Temp. [degC]
258	2008/06/05 15:04	125	24.5
259	2008/06/05 15:04	120	24.6
260	2008/06/05 15:05	Low battery	-

If the record is terminated by connecting to a PC, [Connected PC] will be recorded.

If the record is terminated due to insufficient memory, [Data Full] will be recorded.

#### 4.4 Instrument information



Serial number, manufacturing lot, and manufactured month are shown.

Usage history shows the sum of logging time since the initial use.

If Usage history is not needed, uncheck the box of "Record Usage History" to disable recording. If unchecked, recorded history will be cleared.

Gas sensor shows sensor specifications and manufacturing information.

#### Calibration reminder

The sensor signal is changed with time and environmental conditions. This instrument shall be calibrated periodically.

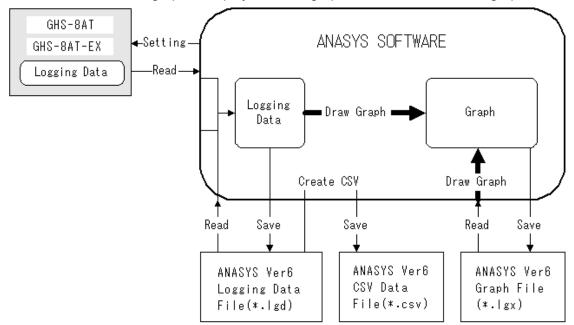
This instrument reminds you by the calibration reminder symbol on the display. If the last calibration date and calibration cycle are set, the calibration symbol will be indicated when the next calibration schedule nears.

Select the last calibration date from the pull-down menu. Set a desired calibration cycle from the pull down menu. Click on "Set Calibration Date and Cycle" to save the parameters to the instrument.

This reminder can be cancelled by unchecking the box. The calibration reminder will not appear on the display and the recorded calibration date will be cleared.

## 5. File operation

Logging data can be saved as two types of file formats. One is a logging file with the extension .lgd, and the other is a graph file with the extension .lgx. Logging data can be downloaded from the instrument. From the logging data, CSV files can be created. Graph data can be saved when the logging data is shown in a graph. When more than one graph is displayed, these graphs can be saved as one graph file.



Processing of the data in ANASYS and the instrument

By default, files are saved in below folders.

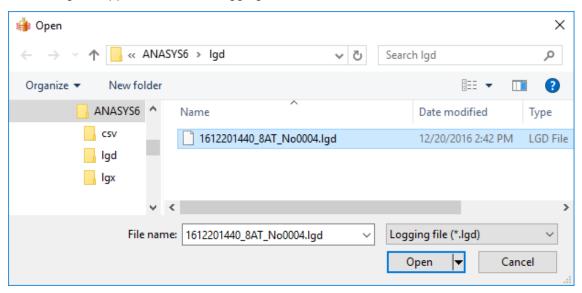
C\Users\username\Documents\ANASYS6 \lgx graph file \lgd logging file \csv CSV file

If other folder is selected, the default saving folder will be changed. The selected folder will be automatically set as default afterward.

## 5.1 Open logging file

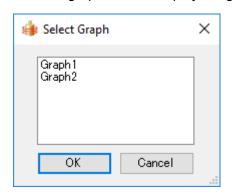
Launch ANASYS, click on [File]-[Open Logging File].

The dialog will appear. Select the logging file.



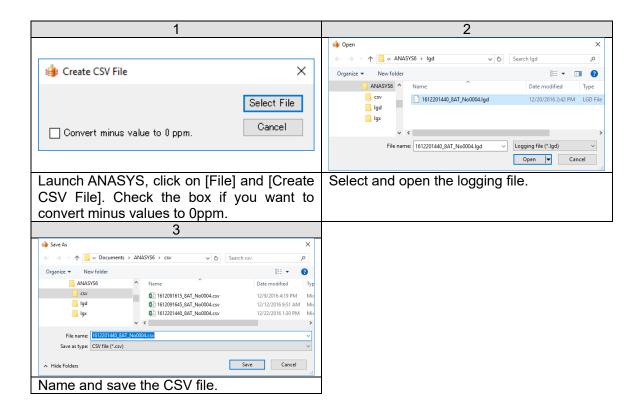
The logging data will be displayed as a graph.

When two graph areas are displayed, the dialog asking graph area will appear. Select a graph area to display the graph.



## 5.2 Create CSV file

Logging data can be converted to CSV file which is readable by spreadsheet software.



By default, files are saved in below folders.

C\Users\username\Documents\ANASYS6	\lgx	graph file
	\lgd	logging file
	\csv	CSV file

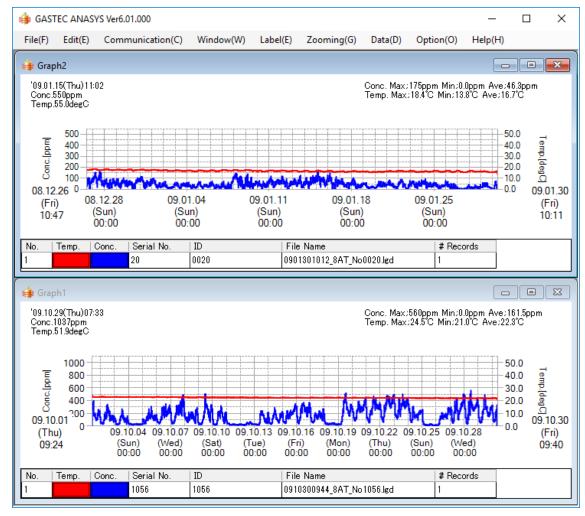
If other folder is selected, the default saving folder will be changed. The selected folder will be automatically set as default afterward.

## 6. Graph view

Two graphs can be displayed one above the other in one window.

When clicking the maximize button on graph1, Graph area 1 will be displayed. When clicking the maximize button on graph2, Graph area 2 will be displayed. When opening two windows and selecting either [Window]-[Cascade], [Tile Vertical] or [Tile Horizontal], two graphs will be displayed.

#### Tile Horizontal



NOTE: Only displayed graph(s) can be printed out. When two graphs are displayed, they are printed in one sheet. To print out only one graph area, close the graph window which is not necessary to print.

## 7. Graph

## 7.1 Graph appearance

The line thickness, colour, and hide/show of the graph are selectable.

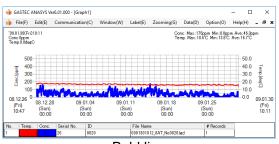
To change the line thickness, click on the colour box (see below). When the box is clicked, the line is changed in order of Normal -> Bold -> Hide -> Normal.

To change the colour, right click on the colour box to show the colour pallet. Select a colour from the pallet.





**Pallet** 



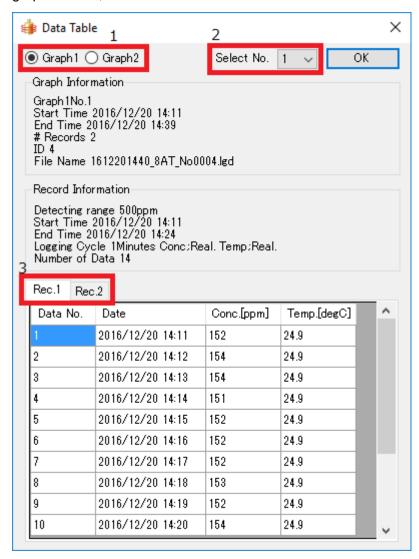
| File | Food |

Bold line

Hiding the graph

#### 7.2 Data table

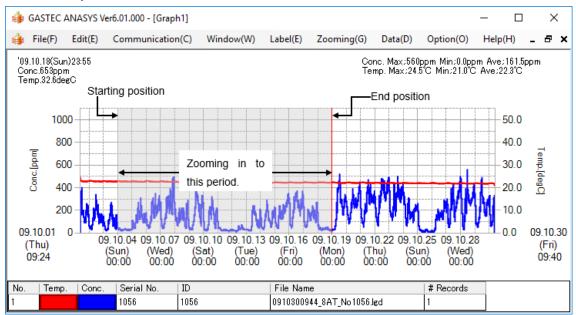
Graph data can be shown in tabular form. Launch ANASYS and display graphs. Click [Data] and [Data Table]. The dialog box will appear. Select the graph area, graph number, and record number.



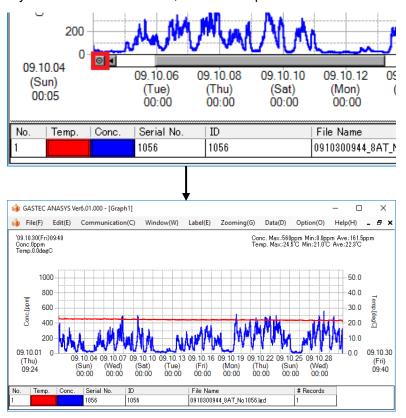
- 1 Select graph area
- 2 Select graph number
- 3 Select record number

## 7.3 Zooming the time scale

The time scale on the display can be changed. Click at a starting position of your desired time period, and drag it to an end position. The graph should be redrawn automatically.



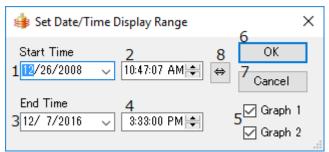
If you click the reset button, one zoom operation will be resetted.



## 7.4 Change the time display range

The time range to display in the graph can be changed.

Select [Zooming]-[Set Date/Time Display Range]. The following dialog box will appear.

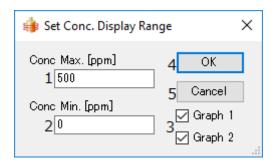


1	Starting date	Set desired starting date. Enter the parameters directly in the box or use the calendar which appears by clicking the down arrow of
		the box.
2	Starting time	Set desired starting time. Enter the number directly or use the
_	9 to ti ig ti	up/down arrows to increase/decrease the value.
3	Ending date	Set desired ending date. Enter the parameters directly in the box
	Ü	or use the calendar which appears by clicking the down arrow of
		the box.
4	Ending time	Set desired ending time. Enter the number directly or use the
	J	up/down arrows to increase/decrease the value.
5	Check boxes	Select a graph area to apply this setting.
6	OK	Apply the setting to the graph view.
7	Cancel	Cancel the change and close the dialog box.
8	Reset	Set the display range to the start and end time of data.

## 7.5 Set Concentration display range

The concentration range to display in the graph can be changed.

Select [Zooming]-[Set Conc. Display Range]. The following dialog box will appear.

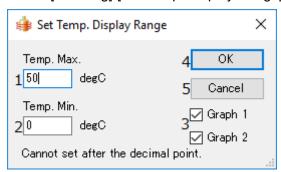


Conc. Max.
 Conc. Min.
 Check boxes
 OK
 Cancel
 Set a maximum concentration value.
 Set a minimum concentration value.
 Set a maximum concentration value.
 Cancel the graph area to apply this setting.
 Apply the setting to the graph view.
 Cancel the change and close the dialog box.

## 7.6 Set temperature display range

The temperature range to display in the graph can be changed.

Select [Zooming]-[Set Temp. Display Range]. The following dialog box will appear.



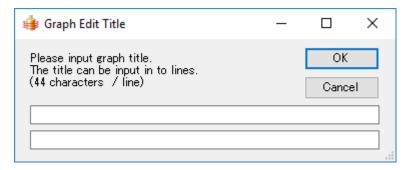
Temp. Max.
 Temp. Min.
 Set a maximum temperature value.
 Check boxes
 OK
 Cancel
 Set a minimum temperature value.
 Set a minimum temperature value.
 Set a maximum temperature value.
 Set a minimum temperature value.
 Set a minimum temperature value.

## 7.7 Label

Title, Comment, or arrow can be added to the graph.

## Title

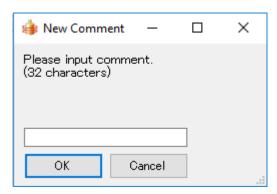
Select [Label]-[Title]-[New, Edit]. The following dialog box will appear.



Enter the title and then click on OK.

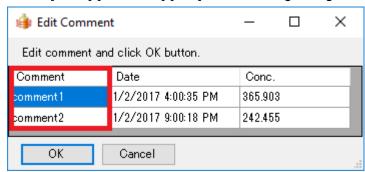
#### Comment

Select [Label]-[Comment]-[New]. The following dialog box will appear.



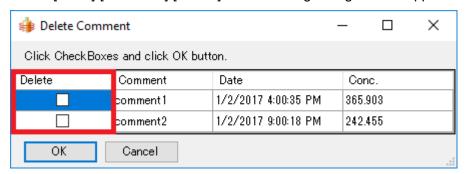
Enter comment and then click on OK. The comments can be moved by click and drag.

Select [Label]-[Comment]-[Edit]. The following dialog box will appear.



The comments can be editted.

Select [Label]-[Comment]-[Delete]. The following dialog box will appear.

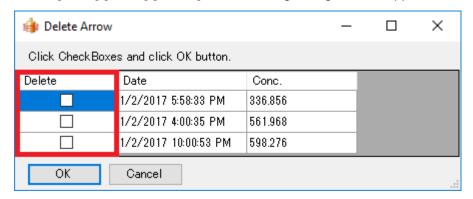


Click the checkbox next to the comment you want to delete and click OK button.

#### Arrow

Select [Label]-[Arrow]-[New]. An arrow will appear. The arrow can be moved and resized using a mouse.

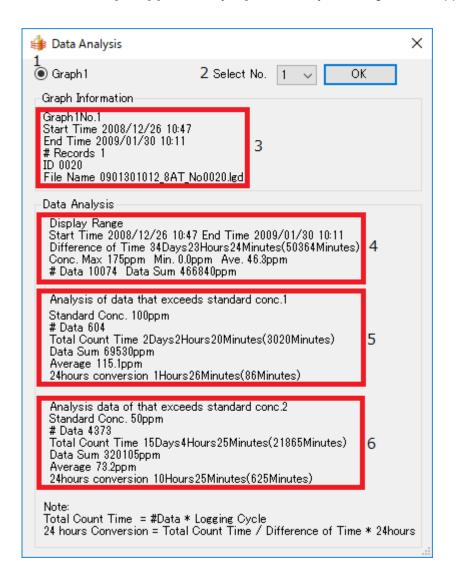
Select [Label]-[Arrow]-[Delete]. The following dialog box will appear.



Click the checkbox next to the arrow you want to delete and click OK button.

## 7.8 Data Analysis

Select [Data]-[Data Analysis]. Data Analysis dialog box will appear.

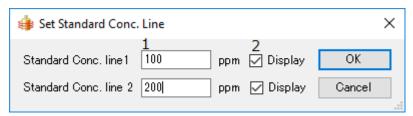


- 1 Select the graph area
- 2 Select a graph if more than one graph is displayed in on the graph area.
- 3 Information of the graph1.
- 4 Analysis of data in the time scale range which is currently on display.
- Analysis of data which exceeds the boundary line 1 in the time scale range which is currently on display.
- Analysis of data which exceeds the boundary line 2 in the time scale range which is currently on display.

## 8. Options

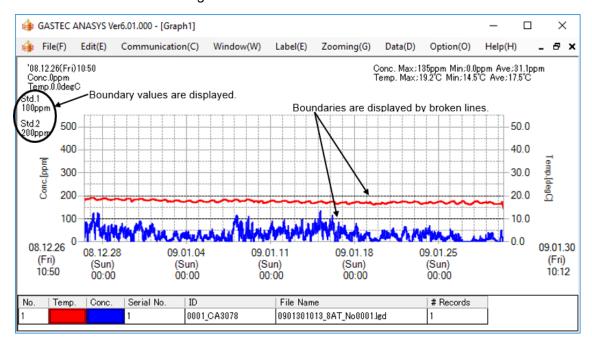
## 8.1 Set boundary line.

Select [Option]-[Standard Conc. Line]. The following dialog box will appear.



- 1 Enter boundary concentrations.
- 2 Select the checkbox to display/hide the boundary line.

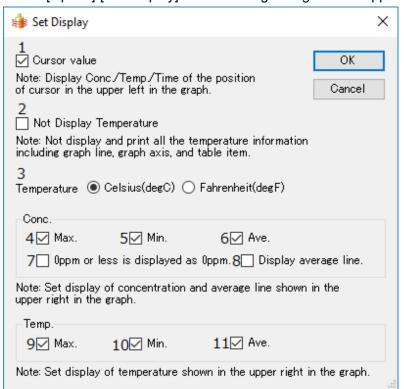
Click on OK to save the settings.



Once boundaries are set, this setting is set as default. If the boundaries are unnecessary, uncheck "Display" of the dialog box.

## 8.2 Display setting

Select [Option]-[Set Display]. The following dialog box will appear.



1	Cursor value	Display/hide the cursor pointing value which appears on the upper left of the graph area.
2	Not display	,,
	temperature	
3	Temperature	Set the unit of temperature displayed in the graph and CSV file.
4	Maximum concentration value	Display/Hide the maximum concentration value which appears on the upper right of the graph area.
5	Minimum	Display/Hide the minimum concentration value which appears
	concentration value	on the upper right of the graph area.
6	Average	Display/Hide the average concentration value which appears
	concentration value.	on the upper right of the graph area.
7	Oppm or less is displayed as Oppm	When checked, minus values are displayed as 0ppm.
8	Average line	Display/Hide the average line on the graph.
9	Maximum	Display/Hide the maximum temperature value which appears
	temperature value	on the upper right of the graph area.
10	Minimum	Display/Hide the minimum temperature value which appears
	temperature value	on the upper right of the graph area.
11	Average	Display/Hide the average temperature value which appears
	temperature value	on the upper right of the graph area.

Once the above settings are set, the settings will be default.

### 9. Menu list

From the menu bar of the window, the following operations can be selected.

9.1 File

New Open a new graph window.

Open Graph File Open a graph file (\*.lgx) to display it.

Save graph File Save the graph displayed as a graph file.

Close Graph File Close all the graphs on the display.

Open Logging Open a logging file (\*.lgd) to draw a graph. When two graph areas are

File displayed, select a graph area to draw the graph.

Create CSV File Convert the logging data to a CSV format file.

Print Print out the graph. When two graphs are displayed, they are printed

in one sheet. To print out only one graph area, close the graph window

which is not necessary to print.

Open lgg File Open the data which is saved by older ANASYS (Version 5.6 or older).

Exit Quit ANASYS

9.2 Edit

Copy Copy the image of the window to the clipboard.

Save Bitmap File Save the image of the window as bitmap file.

9.3 Communication

Read Logging Download data from the instrument.

Data

Set Logging Configure the settings of the instrument.

Condition

Set Date/Time Set the time and date of the instrument.

Information Display the information of the main unit, sensor information, and

calibration cycle.

9.4 Window

New Window Open a new graph window.

Cascade Pile up graph windows.

Tile Vertical Tile graph windows vertically.

Tile Horizontal Tile graph windows horizontally.

Close All Close all graph windows.

9.5 Label

Title Add/Edit the title.

New, Edit

Title Delete the title.

Delete

Comment Add a comment text box.

New

Comment Edit the comment text box.

Edit

Comment Delete the comment text box.

Delete

Arrow Draw an arrow on Graph.

New

Arrow Delete the arrow on Graph.

Delete

9.6 Zooming

Set Date/Time Change time ranges to display.

Display Range

Set Conc. Display Change concentration ranges to display.

Range

Set Temp. Display Change temperature ranges to display.

Range

9.7 Data

Data Table Display the graph data in tabular form.

Data Analysis Display data analysis of all the graphs.

9.8 Option

Set standard Set the boundary line on the graph area.

Conc. line

Set Display Set display settings.

9.9 Help

Help Launch the help function of the software.

ANASYS6 Version Version information of the software

## 10. Specifications

## 10.1 Specifications

Product name	Data Analysis software for H2S Data Logger ANASYS
Product code	GHS-PC-3
Operating system	Windows 8.1, 10, 11
Communication interface	USB2.0
Features	Downloading the data from instrument, setting logging settings, setting time of the instrument, saving log and graph data, display graph (maximum 10 in one window), creating CSV file.

## 11. Trouble shooting

## Connection failure

Possible cause	Action to be taken
Using USB hub	Connect the instrument directly to the computer.
Can not install the device driver	Get the latest device driver and try again
Cable failure	Replace the USB cable
Contact failure	Use other USB port of the computer.

## Installing device driver is required again after installation procedure

Possible cause	Actions to be taken
Other USB port is used	Device driver needs to be installed with respect to each USB port. Use the USB port which driver is already installed or install the driver again.
Cannot install device driver	Try again with the latest device driver.

## Characters lap over the graph

Possible cause	Actions to be taken
Wrong DPI value is set	Set DPI of the display to default.