INST.NO. INE-847A

CHINO

AL4000/AH4000 Series
KL4000/KH4000 Series

Hybrid Recorder

[Parameter Setting Software/Parameter Switching Tool]
(Multi-point type)

INSTRUCTIONS

CHINO

Table of Contents

1. Introduction 1

2. System Requirement 3

2-1. System Configuration 3

2-2. Operating Condition of Software 3

3. How to Setup 4

3-1. Installation 4

3-1-1. New Installation 4

3-1-2. Installation at Upgrade 6

3-1-3. Installation of USB Driver 7

3-2. Uninstallation 13

4. Valid Value Range in Software 15

5. Startup and Exit of Software 16

5-1. Startup 16

5-2. Exit 17

6. How to Operate 18

6-1. Basic Rules 18

6-1-1. How to Input Setting Values 18

6-1-2. Inputting Characters and Alphanumeric 18

6-1-3. Decimal Location 19

6-1-4. Operation Flow 21

6-1-5. Setting Items by Instrument 23

6-2. Operation of Parameter Setting Menu Screen 25

6-2-1. Offline (New) Setting 25

6-2-2. Offline (File) Setting 26

6-2-3. Online Setting 27

6-3. Operation of Ethernet Adapter Setting Screen 28

6-4. Operation of Serial Adapter Setting Screen 29

6-5. Operation of USB Adapter Setting Screen 30

6-6. Operation of Parameter Setting Screen 31

6-6-1. Range Settings "Range" 33

6-6-2. Alarm Settings "Alarm" 36

6-6-3. Calculation Settings "Calc" 39

6-6-4. Calculation Formula Settings "Formula" 42

6-6-5. Broken Line Approximation Table Settings "Seg.Tbl" 44

6-6-6. Chart Speed Settings "Chart" 46

6-6-7. Analog Recording (Dot Printing Type) Settings "Dot" 47

6-6-8. Subtract Printing Settings "Sub Prt" 48

6-6-9. Analog Recording (Trace Printing Interval) Settings "Dot.Int" 50

6-6-10. Periodic (Data Interval) Data Printing Settings "DataInt" 51

6-6-11. Periodic (Specified Time) Data Printing Settings "PrtTime" 52

6-6-12. Message Printing 1 Settings "MsgPrt1" 54

6-6-13. Message Printing 2 Settings "MsgPrt2" 56

6-6-14. Recording Format Settings "PrtForm" 57

6-6-15. Automatic Range Switching (Printing) Settings "A.Range" 58

6-6-16. Compressed/Expanded Printing Settings "Cmp&Exp" 60

6-6-17. Zone Printing Settings "ZonePrt" 62

6-6-18. SD Card Settings "SD CARD" 63

6-6-19. USB Engineering Port Settings "USB" 65

6-6-20. COM1 (Communication) Settings "COM1" 66

6-6-21. COM2 (Communication) Settings "COM2" 67

6-6-22. Ethernet Settings "Ether" 68

6-6-23. SNTP Settings "SNTP" 69

6-6-24. Email Address (Account) Settings "E-mail Account" 70

6-6-25. Email Address (Destination) Settings "E-mail Address" 71
6-6-26. Email Address (Sending Condition) Settings "E-mail Condition" 72
6-6-27. Calendar Timer Settings "Timer" 73
6-6-28. External Drive Settings "Dig Inp" 75
6-6-29. Operation Recording Settings "Ope.Rec" 76
6-6-30. Failout Settings "FailOut" 78
6-6-31. Display Settings "Display" 80
6-6-32. Date/Time Settings "Date" 82
6-6-33. System Settings "System" 83
6-6-34. Format Display 84
6-6-35. Display Order Settings "D.Order" 85
6-6-36. Soft Dip Switch Settings 86
6-7. Operation of Help Screen 87
6-8. Operation of Version Check Screen 88

7. Parameter Switching Tool 89

7-1. System Configuration 89
7-2. Operating Condition of Software 89
7-3. Installation 90
7-3-1. New Installation 90
7-3-2. Installation at Upgrade 92
7-4. Uninstallation 93
7-5. Startup and Exit of Switching Tool 95
7-5-1. Startup 95
7-5-2. Exit 95
7-6. How to Operate 96
7-6-1. Parameter Reading from Old Model Instrument 96
7-6-2. Parameter Writing to New Model Instrument 98
7-7. Parameter Switching 99
7-7-1. Switchable Parameter Types 99
7-7-2. Input Type Switching 100

8. Glossary 102

9. Troubleshooting 103

1. Introduction

Thank you for purchasing our hybrid recorder.
With this software, you can set various parameters on your PC by connecting the hybrid recorder (AL4000/AH4000, KL4000/KH4000) to the PC via communication interface (multi-point type only).
This instruction manual describes how to prepare hardware, install the program, and operate it. Make sure to read this instruction manual in advance in order to understand this software well and to prevent troubles from occurring.

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3. Other described company names and product names are trademarks and registered products of the respective companies.
4. Please note that the marks “TM” and “®” are omitted throughout this manual.4. Please note that the marks TM and ® are omitted throughout this manual.

Precautions

1. Be careful not to drop the software when taking it out of the package.
2. If not used for a long time, keep the software in a CD case after installation and store it at room temperature, away from dust.
3. Keep this instruction manual carefully until the software is discarded.
4. When discarding the software, follow the local regulations for waste disposal and cooperate in recycling.

■ Checking before use

After opening the package of this software, be sure to check the following before use. If you have found any problems, please contact the dealer where you purchased the product or the nearest sales office of CHINO.

1. Appearance
   Check the appearance of the product to see if there is any damage.

2. Label
   Check that the model written on the label is correct.

Cautions for handling the CD-ROM

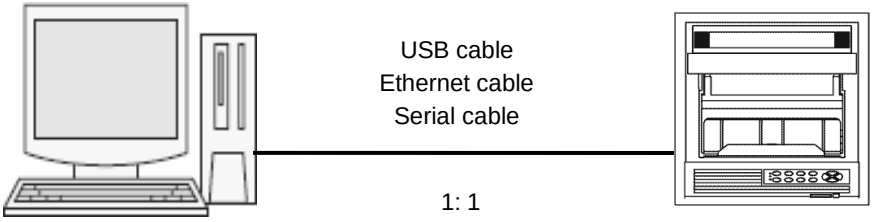
1. Eject the CD-ROM media from the drive when not used.
2. Be sure to keep the disk in a CD case.
3. Keep the disk away from direct sunlight, high temperature and humidity.
4. Keep the signal side clean from fingerprints, dirt, dust, scratches and water drops.

2. System Requirement

Use the software in the environment described below.

2-1. System Configuration

To use the software, the PC and the instrument should be connected one-to-one with an appropriate cable for the communication type.



2-2. Operating Condition of Software

Required instruments	Contents and conditions	
PC	CPU	1GHz 32 bit or 64 bit.
	Memory	1GB or more (32bit), 2GB or more (64bit).
	Hard disk space	2GB or more free hard disk space.
	Disk drive	CD drive.
	Removable disk drive	Compatible with SD memory card.
	Supported OS	Windows XP SP3 (32bit) Windows Vista SP2 (32bit/64bit) Windows 7 (32bit/64bit) * .NET Framework 3.5 or later must be able to be installed on the OS.
	Communications interface	USB Serial Ethernet (at least one of them is required).
Required library	.NET Framework3.5	
Display	Screen resolution 800 x 600 or more.	
Printer	Compatible with Windows.	
Mouse	Compatible with Windows.	
Keyboard	Compatible with Windows.	
Target instrument	AL4000/AH4000, KL4000/KH4000 one unit *** Multi-point type only.**	

3. How to Setup

3-1. Installation

3-1-1. New Installation

Install the software from the CD-ROM to the PC before using it.
Use the following procedure for installation.

<Procedure>

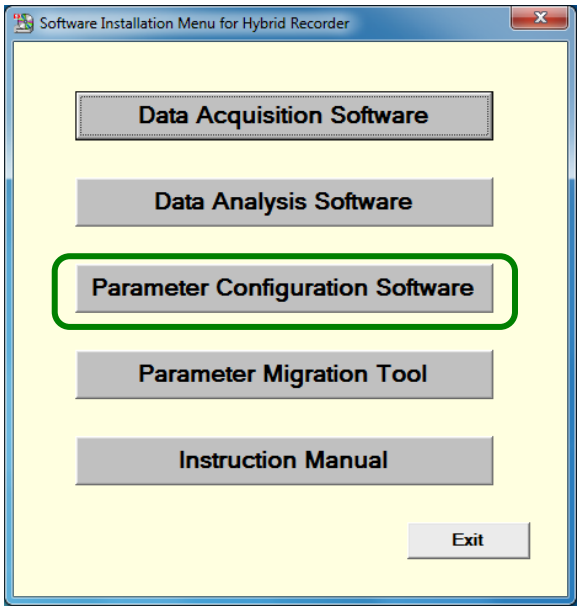
(1) Insert the CD-ROM

Start Windows, and then insert the CD-ROM into the CD-ROM drive. The menu screen is started automatically.

* It the menu screen is not started automatically, start "asmenux.exe" in the CD-ROM.

(2) Click the [Parameter Configuration Software] button

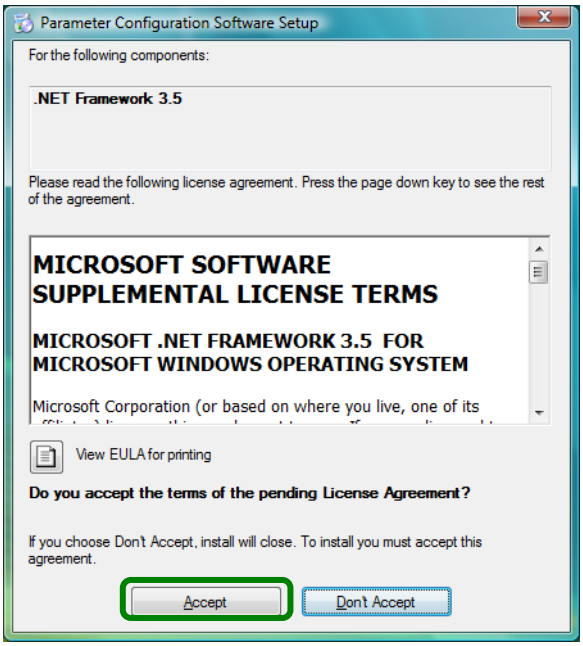
Click the [Parameter Configuration Software] button on the Hybrid Recorder Software Install Menu screen.



(3) Accept the license terms (If .NET Framework 3.5 is already installed, go to step (4))

When the Microsoft Software Supplemental License Terms (.NET Framework 3.5) is displayed, read the contents carefully.
If you accept them, click the [Accept] button. This will start the installation of .NET Framework 3.5 (this process may take several minutes).
If you click the [Don't Accept] button, you cannot use this software.

* The license terms may not be displayed when .NET Framework 3.5 is already installed.

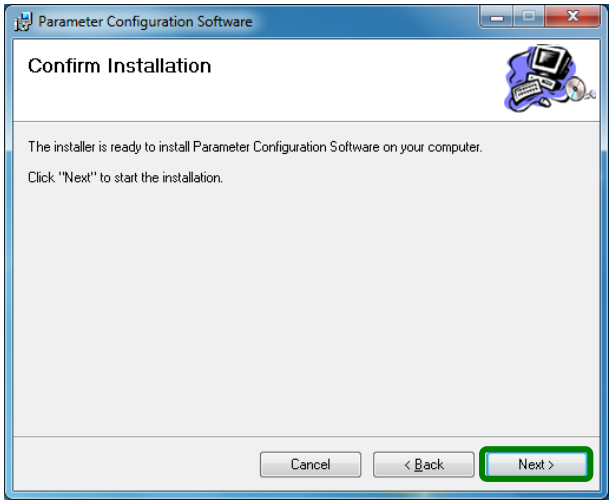


(4) Click the [Next] button

The Parameter Configuration Software Setup Wizard screen is started. Click the [Next] button.

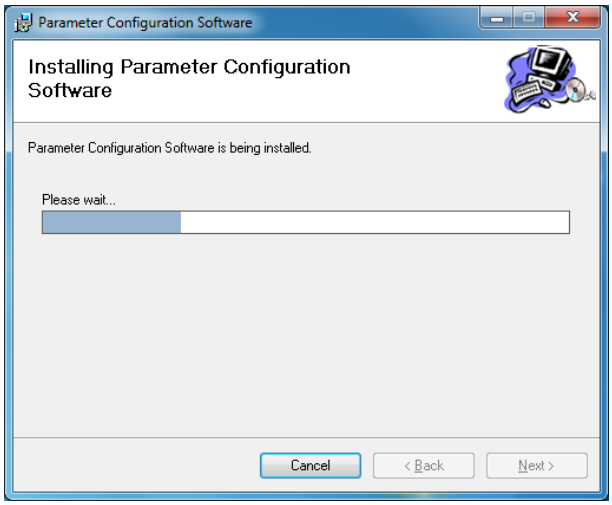
(5) Click the [Next] button

On the Confirm Installation screen, click the [Next] button.



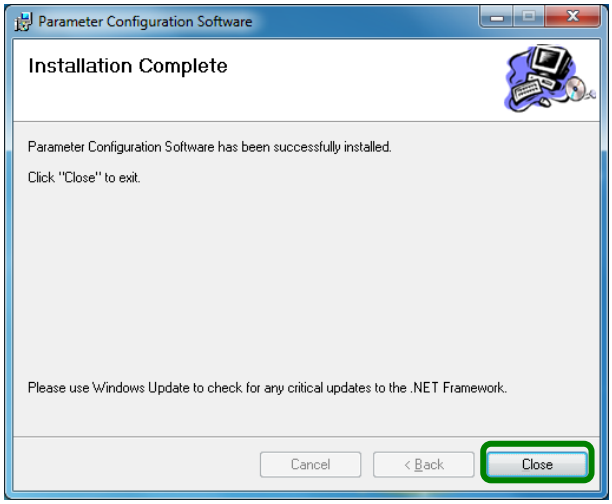
(6) Start the installation

The installation is started. The screen indicating the progress of installation appears. Wait until the installation is completed.



(7) Complete the installation

The installation complete screen appears. Click the [Close] button to finish.



3-1-2. Installation at Upgrade

This software is sometimes upgraded to add newly supported instruments or to fix issues.
Use the following procedure for version upgrade.

<Procedure>

(1) Uninstall the current version (refer to section 3-2).

(2) Install the new version (refer to section 3-1-1).

Remarks **About uninstallation for version upgrade**

- The uninstallation should be done from the [Program and Features] dialog box in Windows as described in "3-2. Uninstallation".
  You cannot complete the uninstallation by simply deleting the files (moving them to the "Recycle Bin").
- Do not delete the folder during an uninstallation for version upgrade.

3-1-3. Installation of USB Driver

If you connect your PC to the instrument via a USB cable, you need to install the USB driver.
Use the following procedure for installation.

<Procedure>

• **When Using Windows XP or Windows Vista** (Screenshots of Windows XP are used.)

* We use screenshots of Windows XP for description. This procedure is the same as that for Windows Vista in principle.

(1) Start the Found New Hardware Wizard

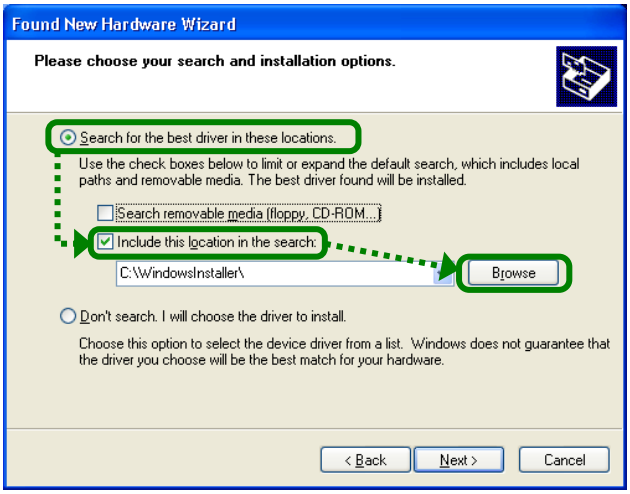
When you connect the USB cable, the Found New Hardware Wizard is started automatically. Select [No, not this time], and click the [Next] button.

(2) Select the installation method

The installation method selection screen appears. Select [Install from a list or specific location (Advanced)], and click the [Next] button.

(3) Specify the search location

On the search and installation option selection screen, select [Search for the best driver in these locations], check the [Include this location in the search] check box ☑, and then click the [Browse] button.

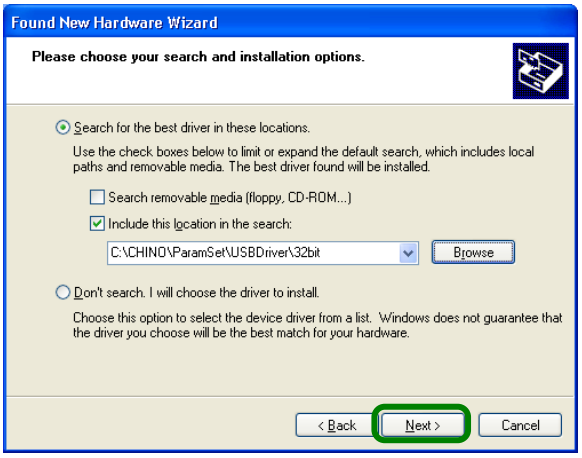


(4) Select the folder

When the [Browse For Folder] dialog box appears, select a file below depending on the OS you use, and then click the [OK] button (if you cannot find the folder, click [My Computer] → [C:] → [CHINO] → [ParamSet] → [32bit]).
* For 64bit version Windows Vista, click [64bit].

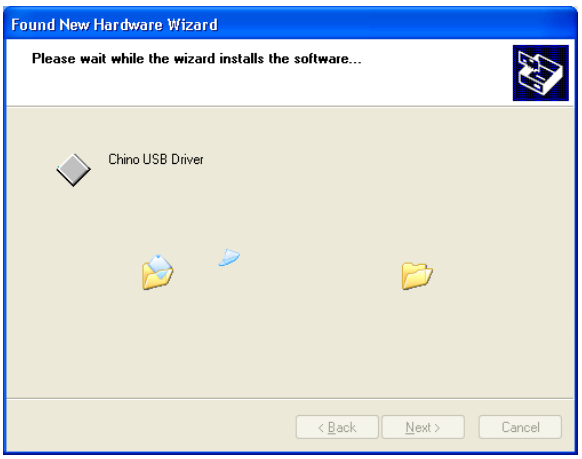
(5) Click the [Next] button

When you specified the search location, click the [Next] button.



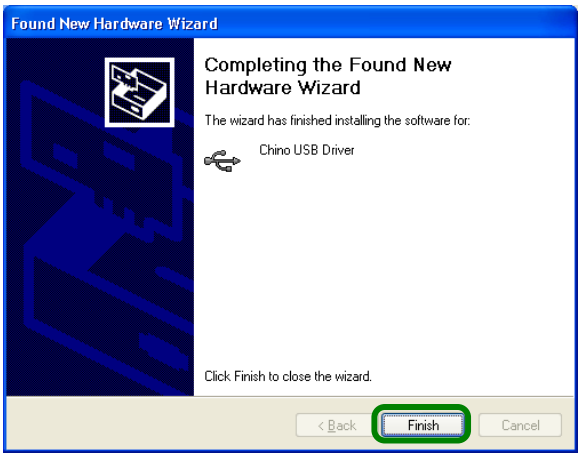
(6) Start the installation

The installation is started. The screen indicating the progress of installation appears. Wait until the installation is completed.



(7) Complete the installation

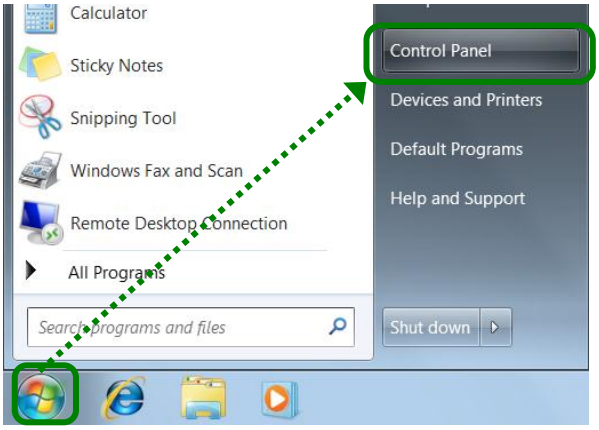
The Completing the Found New Hardware Wizard screen appears. Click the [Finish] button to finish.



• When Using Windows 7

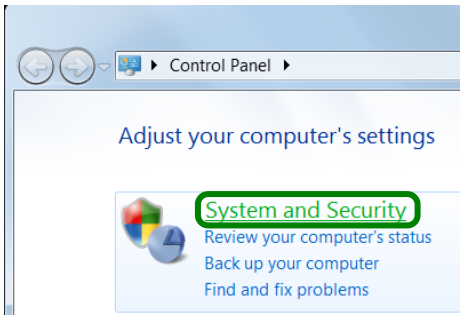
(1) Open the Control Panel

After connecting the USB cable, click [Start] → [Control Panel].



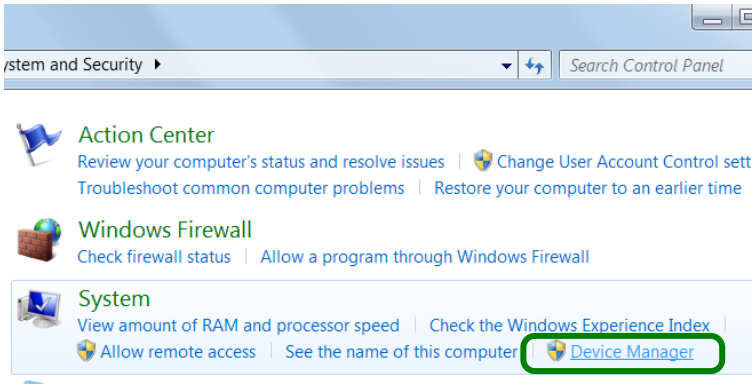
(2) Click [System and Security]

When the Control Panel is displayed, click [System and Security].



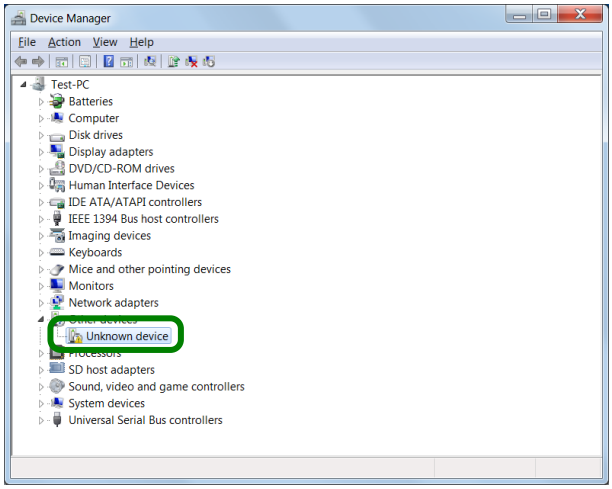
(3) Click [Device Manager]

When the System and Security screen is displayed, click [Device Manager].



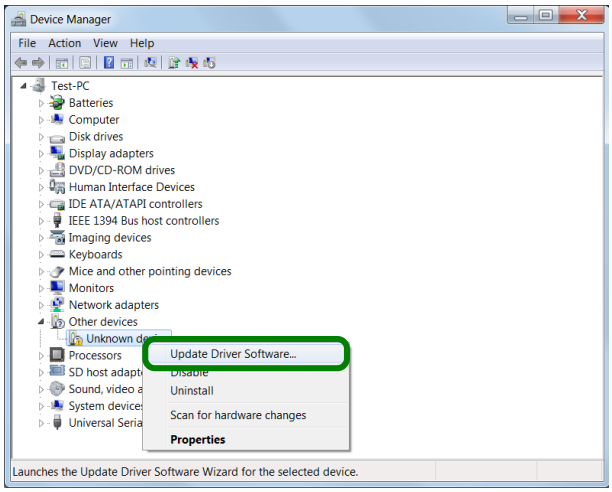
(4) Click [Unknown device]

When the Device Manager screen is displayed, click [Other Devices], and then [Unknown device].



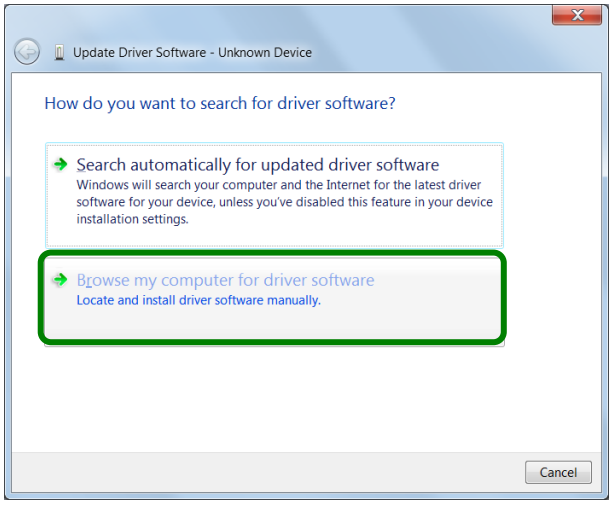
(5) Click [Update Driver Software]

Right-click [Unknown Device], and then click [Update Driver Software] on the displayed menu.



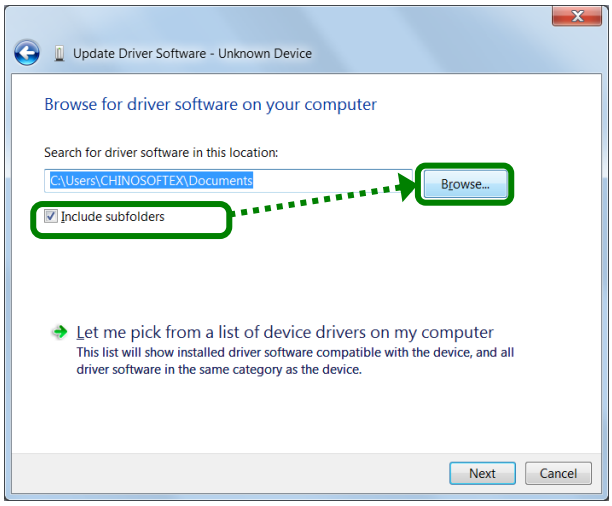
(6) Click [Browse my computer for driver software]

On the screen for selecting how to search the driver software, click [Browse my computer for driver software].



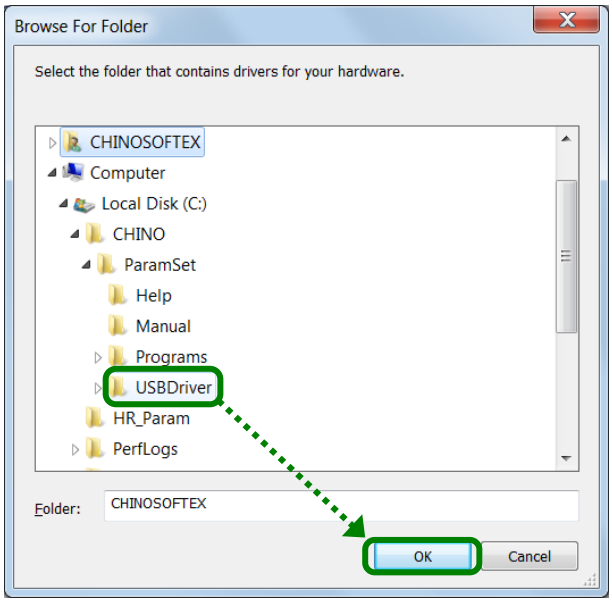
(7) Specify the search location

On the Browse for driver software screen, select the [Include subfolders] check box ☑, and then click the [Browse] button.



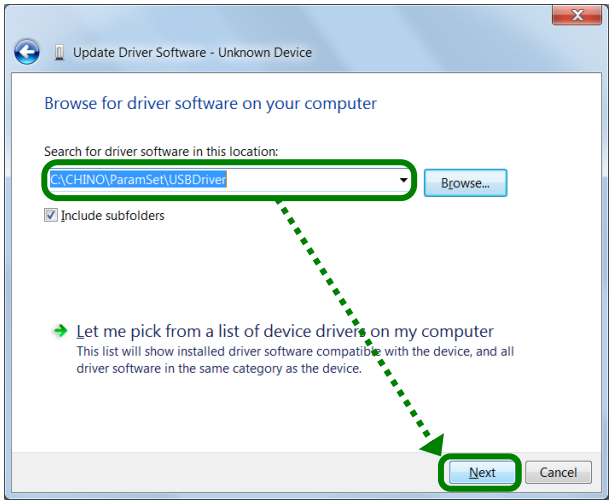
(8) Select the folder

When the Browse folders screen is displayed, select [USBDriver] (if you cannot find [USBDriver], click [Computer] → [(C:)] → [CHINO] → [ParamSet] → [USBDriver]).
Confirm that [USBDriver] is selected in the [Folder (F):] field, and then click the [OK] button.



(9) Click the [Next] button

When you specified the search location, click the [Next] button.



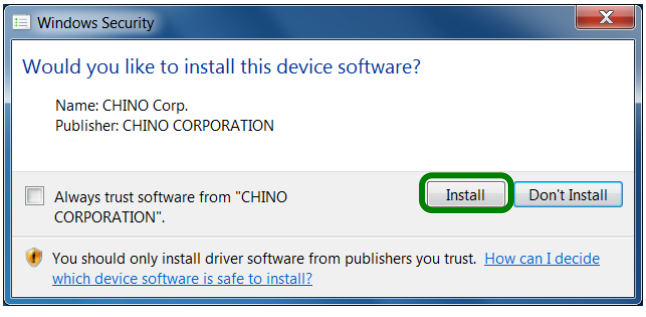
(10) Click [Install] or [Install this driver software anyway]

One of the following screens is displayed.
Follow the instruction for the displayed screen.

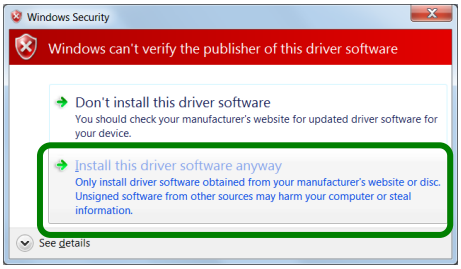
- **For the Windows Security screen (a)**
  Click the [Install] button to start the installation.

- **For the Windows Security screen (b)**
  Click [Install this driver software anyway] to start the installation.

Windows Security screen (a)

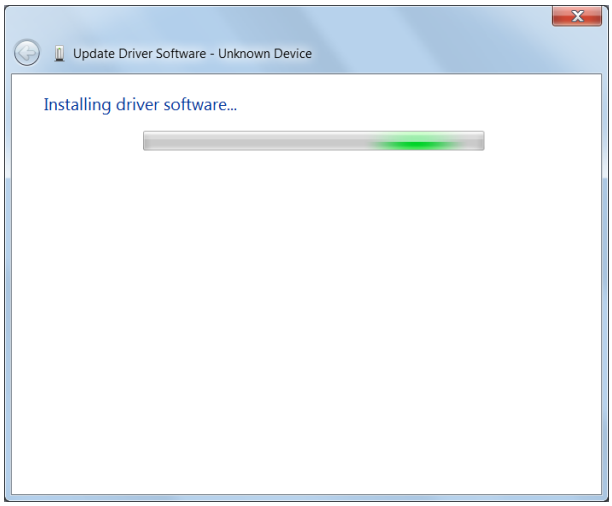


Windows Security screen (b)



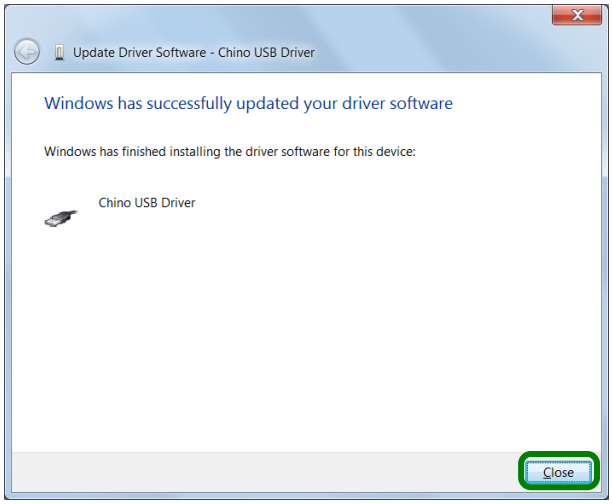
(11) Start the installation

The installation is started. The screen indicating the progress of installation appears. Wait until the installation is completed.



(12) Complete the installation

The driver software update completion screen is displayed. Click the [Close] button to finish.

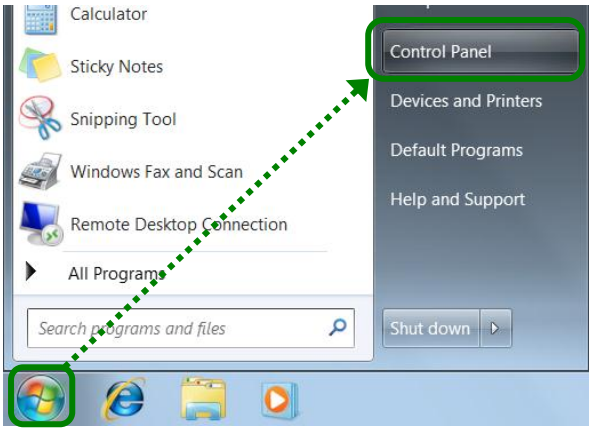


3-2. Uninstallation

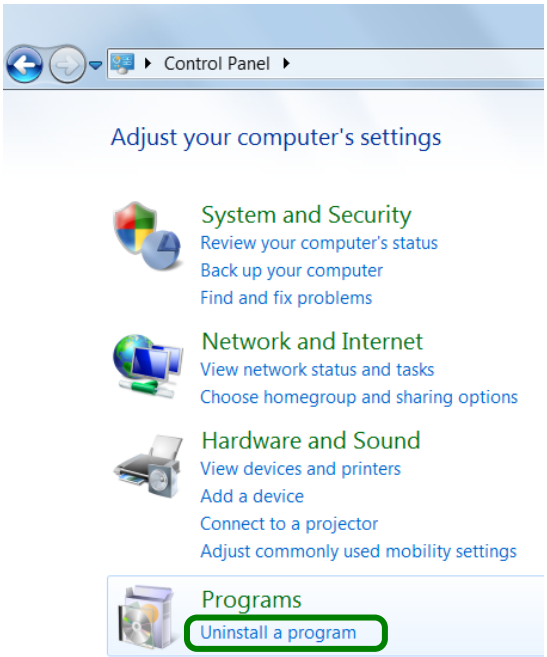
This section describes how to delete the software from the hard disk.
Exit all programs related to the software before starting the uninstallation.

<Procedure>

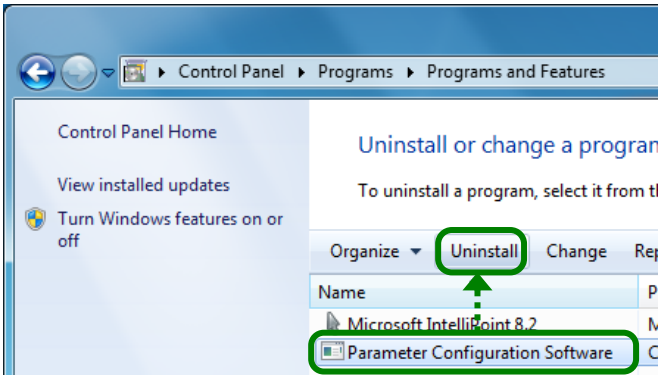
(1) Open the Control Panel
Click [Start] → [Control Panel].



(2) Click [Uninstall a program]
When the Control Panel is displayed, click [Uninstall a program].

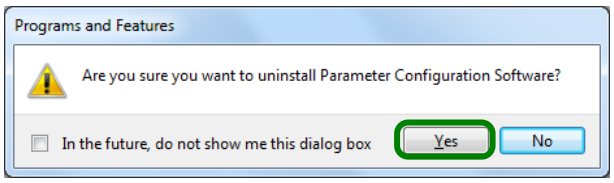


(3) Delete [Parameter Configuration Software]
Select [Parameter Configuration Software] from the list displayed in [Uninstall or change a program], and then click [Uninstall].



(4) Click [Yes]

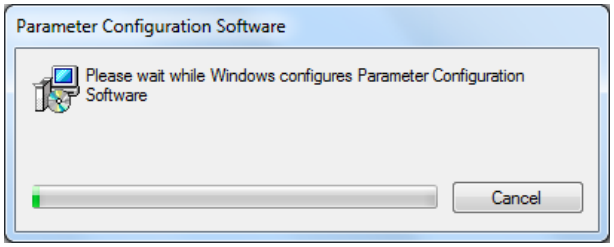
On the Program and Feature screen, click [Yes].



(5) Start uninstallation

The uninstallation is started. The screen indicating the progress of uninstallation appears. Wait until the uninstallation is completed. When the uninstallation is completed, the screen shown right is closed automatically.

* At this point, the folder related to the software still remains. To completely delete the software, delete the installation folder "ParamSet" using the Windows Explorer. The location of the folder is shown in the table below.



[Location of the folder related to the software]

OS	Location of folder
Windows XP	C:¥Documents and Settings¥[user name]¥Application Data¥CHINO¥ParamSet¥
Windows Vista, Windows 7	C:¥Users¥[user name]¥AppData¥Roaming¥CHINO¥ParamSet¥

Remarks **About uninstallation for version upgrade**

- You cannot complete the uninstallation by simply deleting the files (moving them to the "Recycle Bin").
- Do not delete the folder during an uninstallation for version upgrade.

4. Valid Value Range in Software

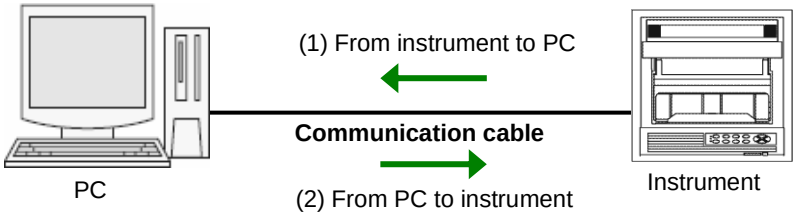
The following figures show the range of value that can be handled by the software and the instrument.

1. Valid Value Range in Parameter Configuration Software (or PC) and Instrument:-30000 to 99999

The PC and the instrument can handle values in the range -30000 to 99999.

2. Valid Value Range Set via Communication:-30000 to 30000

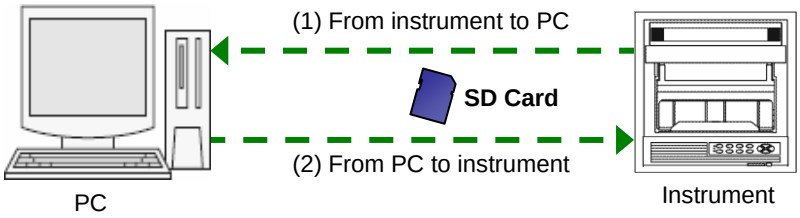
When being sent via communication, values in the range 30001 to 99999 are handled as overflow.



(1) When a value in the range 30001 to 99999 is sent from the instrument to the PC, the overflow value (#######) is displayed on the PC.
(2) When a value in the range 30001 to 99999 is sent from the PC to the instrument, it is invalid on the instrument, and the previous value is retained.

3. Valid Value Range Set via SD Card:-30000 to 99999

When being set via SD card, the same range of values can be handled as the PC and the instrument themselves can handle.



(1) When you save a value in the range -30000 to 99999 which is edited on the instrument to an SD card and read it on the PC, it is displayed as a value in the range -30000 to 99999.
(2) When you save a value in the range -30000 to 99999 which is edited on the PC to an SD card and read it on the instrument, it is displayed as a value in the range -30000 to 99999.

Reference **Setting and editing a value in the range 30001 and 99999**

You cannot set a value in the range 30001 to 99999 via communication.
If you want to set/edit a value in the range 30001 to 99999, use an SD card.

5. Startup and Exit of Software

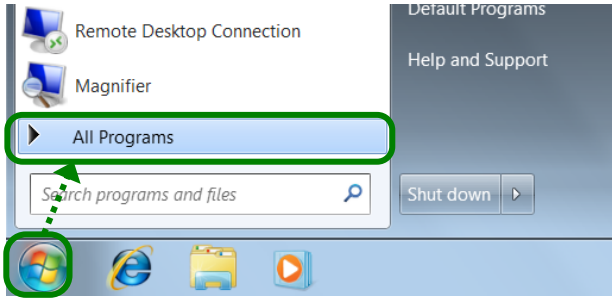
5-1. Startup

This section describes how to start up the software.

<Procedure>

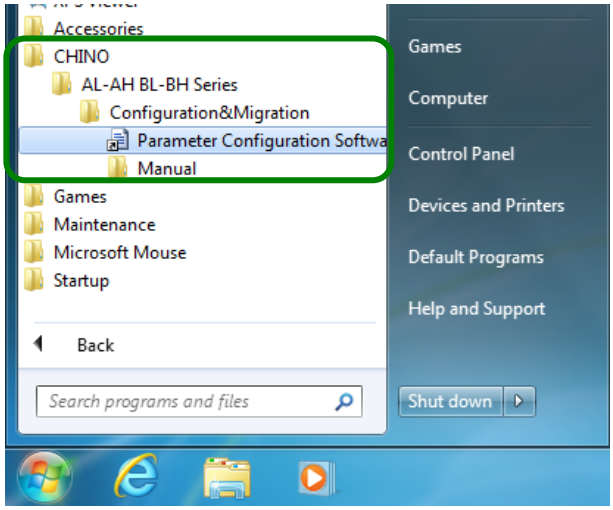
(1) Display all programs

Click [Start] → [All Programs].



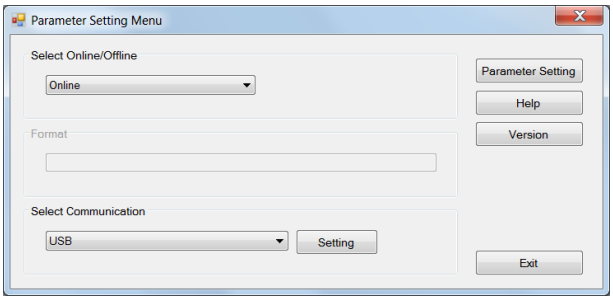
(2) Click [Parameter Configuration Software]

Next, click [CHINO] → [Configuration&Migration] → [Parameter Configuration Software] to start up the software.



(3) Open the Parameter Setting Menu screen

The Parameter Setting Menu screen appears. Set the parameters depending on your instrument (refer to section 6).



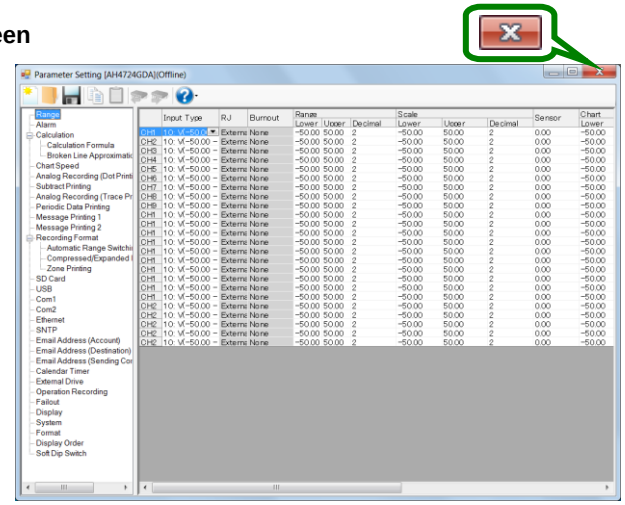
5-2. Exit

This section describes how to exit the software.

<Procedure>

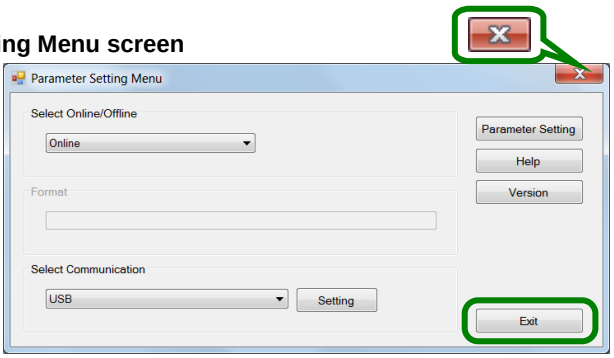
(1) Click the [X] button on the Parameter Setting screen

Click the [X] button on the right side of the title bar to close the Parameter Setting screen.



(2) Click the [Exit] or [×] button on the Parameter Setting Menu screen

Click the [Exit] or [×] button on the Parameter Setting Menu screen to exit the software.



6. How to Operate

6-1. Basic Rules

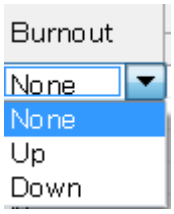
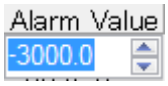
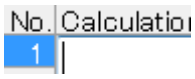
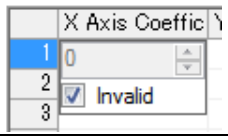
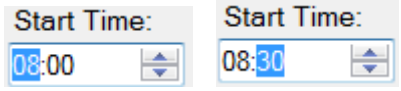
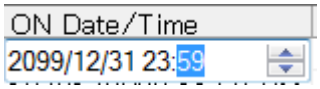
This section describes generally common items for setting operations.

Remarks **Instruction manuals for the instrument**

For AL4000/AH4000, this refers to the instruction manual.

6-1-1. How to Input Setting Values

You can enter a setting value by selecting a setting item and entering a value directly, selecting a value from a drop-down list, or entering a value in a field directly (see the table below).

Button	Description
	Click button and select a value from the list.
	Enter a value directly or click button to select a value.
	Enter a value directly.
	Click the check box to clear it, and enter a value directly or click button to select a value.
	Enter a value directly, or select each value in the right and left fields and click button to select a value.
	Click the check box to select it.
	Enter the date and time directly.

6-1-2. Inputting Characters and Alphanumeric

Only one byte alphanumeric characters can be used for a character or value.
Multi-byte characters can be entered temporarily, but they cannot be set by pressing the Enter key.
Multi-byte characters need to be converted to one byte characters before pressing the Enter key.

6-1-3. Decimal Location

When you change the decimal location in a setting value, the ones in other setting values are changed accordingly. The decimal locations of the alarm value for the alarm setting and the dead band are also changed with a decimal location change of the range in the range setup.

1. When entering the voltage

(1) If you change the decimal location of the range (Example:1→2)

: To be changed

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−500.0	500.0	1	−500.0	500.0	1	0.0	−500.0	500.0	1

⇩

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−50.00	50.00	2	−50.00	50.00	2	0.00	−50.00	50.00	2

The decimal locations of the scale, sensor correction, and chart recording are changed with a decimal location change of the range.

Type	Alarm Value	Dead Band
Upper	−3276.8	0.0

⇨

Type	Alarm Value	Dead Band
Upper	−327.68	0.00

The decimal locations of the alarm value for the alarm setting and the dead band are also changed with a decimal location change of the range.

(2) If you change the decimal location of the scale (Example:1→2)

: To be changed

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−500.0	500.0	1	−500.0	500.0	1	0.0	−500.0	500.0	1

⇩

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−500.0	500.0	1	−50.00	50.00	2	0.00	−50.00	50.00	2

The decimal locations of the sensor correction and chart recording are changed with a decimal location change of the scale.

(3) If you change the decimal location of the chart recording (Example:1→3)

: To be changed

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−500.0	500.0	1	−500.0	500.0	1	0.0	−500.0	500.0	1

⇩

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−500.0	500.0	1	−500.0	500.0	1	0.0	−5.000	5.000	3

The decimal locations of the range, scale, and sensor correction are not changed with a decimal location change of the chart recording (Independent).

Remarks **Effects on setting parameters when changing a decimal location of the range**

- You should set any parameter needs after setting the decimal location of the range. If you change the decimal location of the range after setting parameters, their values would be changed accordingly.
- If you change the decimal location of the range after changing the decimal location of the scale or chart recording, the latter would move to the same location as the former.

2. When entering the thermocouple/resistance thermometer

(1) If you change the decimal location of the range (Example:0→1)

: To be changed

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−200	900	0	−200	900	0	0	−200	900	0

⇩

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−20.0	90.0	1	−20.0	90.0	1	0.0	−20.0	90.0	1

The decimal locations of the scale, sensor correction, and chart recording are changed with a decimal location change of the range.

Type	Alarm Value	Dead Band
Upper	−32768	0

⇨

Type	Alarm Value	Dead Band
Upper	−3276.8	0.0

The decimal locations of the alarm value for the alarm setting and the dead band are also changed with a decimal location change of the range.

(2) If you change the decimal location of the scale (Example:1→2)

: To be changed

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−20.0	90.0	1	−20.0	90.0	1	0.0	−20.0	90.0	1

⇩

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−20.0	90.0	1	−20.00	90.00	2	0.00	−20.00	90.00	2

The decimal locations of the sensor correction and chart recording are changed with a decimal location change of the scale.

(3) If you change the decimal location of the chart recording (Example:1→3)

: To be changed

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−20.0	90.0	1	−20.0	90.0	1	0.0	−20.0	90.0	1

⇩

Range			Scale			Sensor	Chart Recording		
Lower	Upper	Decimal	Lower	Upper	Decimal		Lower	Upper	Decimal
−20.0	90.0	1	−20.0	90.0	1	0.0	−0.200	0.900	3

The decimal locations of the range, scale, and sensor correction are not changed with a decimal location change of the chart recording (Independent).

Remarks **Effects on setting parameters when changing a decimal location of the range**

- You should set any parameter needs after setting the decimal location of the range. If you change the decimal location of the range after setting parameters, their values would be changed accordingly.
- If you change the decimal location of the range after changing the decimal location of the scale or chart recording, the latter would move to the same location as the former.

6-1-4. Operation Flow

<Procedure>

(1) Start this software

When you start the parameter setting software, the Parameter Setting Menu screen is displayed (refer to section 5-1).

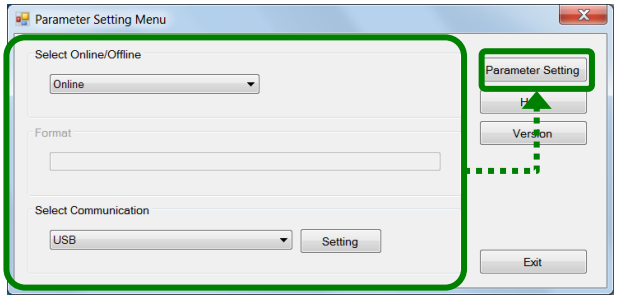
(2) Select online or offline

Specify whether you set parameters of the software online or offline (see the table below). After the selection, click the [Parameter Setting] button to display the Parameter Setting screen.

[Select Online/Offline]

Selection item	Refer to
Offline (New)	Section 6-2-1
Offline (File)	Section 6-2-2
Online*	Section 6-2-3

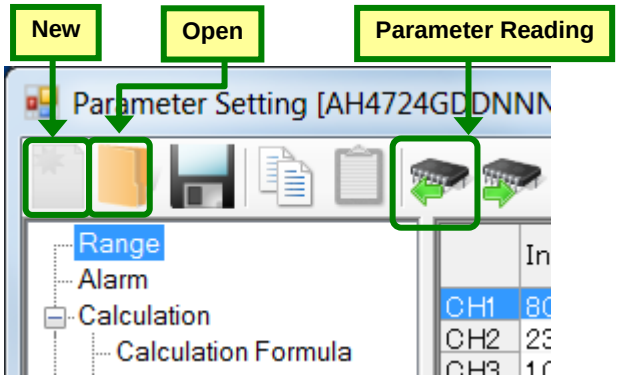
* Check if the PC is connected to the instrument with an appropriate cable for the communication method.



(3) Create and obtain setting parameters

From the tool bar in the Parameter Setting screen, you can create new setting parameters, edit existing files, and communicate with the instrument to read setting parameters from it (refer to section 6-6).

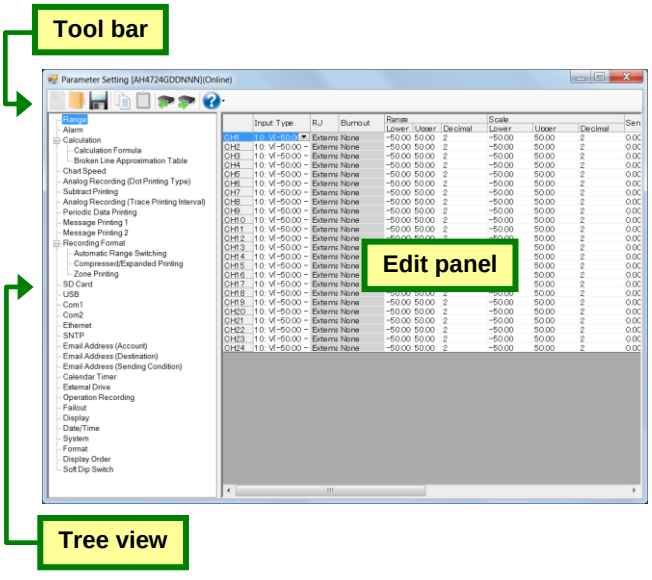
Click the [New] button to create a new setting parameter, the [Open] button to edit an existing file, or the [Parameter Reading] button to communicate with the instrument to read setting parameters from it (refer to section 4).



(4) Edit in the Parameter Setting screen

The setting items and setting parameters of the instrument specified in the step 3 are displayed in the tree view and the edit panel in the Parameter Setting screen.

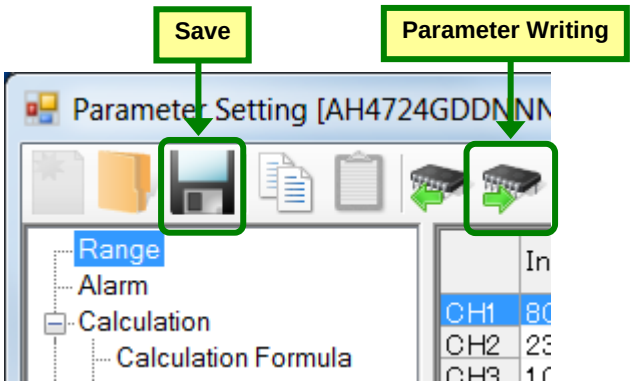
Select a setting item in the tree view and edit a setting parameter in the edit panel (refer to section 6-6-1 to 6-6-36).



(5) Store and write setting parameters

Store the setting parameters that you edited to a file or write them to the connected instrument (refer to section 6-6).

From the tool bar in the Parameter Setting screen, click the [Save] button to save the setting parameters to a file or the [Parameter Writing] button to write to the connected instrument (refer to section 4).



(6) Exit this software

Close the Parameter Setting screen, then close the Parameter Setting Menu screen (refer to section 5-2).

Remarks **Precautions for Exit**

When you edit setting parameters, click the [Save] button or the [Parameter Writing] button as appropriate before closing the Parameter Setting screen.

If you close the Parameter Setting screen without clicking the [Save] button or the [Parameter Writing] button after editing setting parameters, the data you entered would be lost.

6-1-5. Setting Items by Instrument

Setting items vary depending on the instrument (see the table below).

[Available items in the menu by the instrument] ○: Available ×: Unavailable △: Conditional

No.	Menu item		Available items by the instrument		Refer to
			AL4000/AH4000	KL4000/KH4000	
1	Range		○	○	Section 6-6-1
2	Alarm		○	○	Section 6-6-2
3	Calculation		○	○	Section 6-6-3
4	Calculation Formula		○	○	Section 6-6-4
5	Broken Line Approximation Table		○	○	Section 6-6-5
6	Chart Speed		○	○	Section 6-6-6
7	Analog Recording (Dot Printing Type)		○	○	Section 6-6-7
8	Subtract Printing		○	○	Section 6-6-8
9	Analog Recording (Trace Printing Interval)		○	×	Section 6-6-9
10	Periodic Data Printing	Data Interval	○	○	Section 6-6-10
11		Specified Time	○	○	Section 6-6-11
12	Message Printing 1		○	×	Section 6-6-12
13	Message Printing 2		○	×	Section 6-6-13
14	Recording Format		○	×	Section 6-6-14
15	Automatic Range Switching		○	×	Section 6-6-15
16	Compressed/Expanded Printing		○	×	Section 6-6-16
17	Zone Printing		○	×	Section 6-6-17
18	SD Card		○	×	Section 6-6-18
19	USB		○	○	Section 6-6-19
20	COM1		△(* 1)	△(* 1)	Section 6-6-20
21	COM2		△(* 1)	×	Section 6-6-21
22	Ethernet		△(* 1)	×	Section 6-6-22
23	SNTP		△(* 1)	×	Section 6-6-23
24	Email Address (Account)		△(* 1)	×	Section 6-6-24
25	Email Address (Destination)		△(* 1)	×	Section 6-6-25
26	Email Address (Sending Condition)		△(* 1)	×	Section 6-6-26
27	Calendar Timer		○	×	Section 6-6-27
28	External Drive		△(* 2)	△(* 2)	Section 6-6-28
29	Operation Recording		△(* 2)	×	Section 6-6-29
30	Failout		○	○	Section 6-6-30
31	Display		○	×	Section 6-6-31
32	Date/Time		△(* 3)	△(* 3)	Section 6-6-32
33	System		○	○	Section 6-6-33
34	Format		○	○	Section 6-6-34
35	Display Order		○	×	Section 6-6-35
36	Soft Dip Switch		○	○	Section 6-6-36

* 1: Refer to the table "Available items in the menu by the communication method of the instrument."

* 2: Refer to the table "Available items in the menu by the alarm output and the external drive method of the instrument."

* 3: Not displayed when in offline.

***1: [Available items in the menu by the communication method of the instrument]** ○: Available ×: Non-display

No.	Menu item	Available items by the communication method										Refer to
		AL4000/AH4000						KL4000/KH4000				
		N	R	A	Q	C	G	N	R	A		
20	COM1	×	○	○	○	○	○	×	○	○		Section 6-6-20
21	COM2	×	×	×	○	○	○	×	×	×		Section 6-6-21
22	Ethernet	×	×	×	×	×	○	×	×	×		Section 6-6-22
23	SNTP	×	×	×	×	×	○	×	×	×		Section 6-6-23
24	Email Address (Account)	×	×	×	×	×	○	×	×	×		Section 6-6-24
25	Email Address (Destination)	×	×	×	×	×	○	×	×	×		Section 6-6-25
26	Email Address (Sending Condition)	×	×	×	×	×	○	×	×	×		Section 6-6-26

N: None
R: RS-232C
A: RS-422A/RS-485
Q: RS-232C+RS-485
C: RS-422A/RS-485+RS-485
G: Ethernet + RS-422A/RS-485 + RS-485

***2: [Available items in the menu by the alarm output and the external drive method of the instrument]**

○: Available ×: Non-display

No.	Menu item	Available items by the alarm output and the external drive method																Refer to
		AL4000/AH4000								KL4000/KH4000								
		0	2	4	A	8	B	F	D	0	2	4	A	8	B	F	D	
28	External Drive	×	×	○	○	○	○	○	○	×	×	○	○	○	○	○	○	Section 6-6-28
29	Operation Recording	×	×	○	○	○	○	○	○	×	×	×	×	×	×	×	×	Section 6-6-29

0: None
2: Mechanical relay "a" contact alarm output 2 points
4: Mechanical relay "c" contact alarm output 4 points + external drive 5 points
A: Mechanical relay "a" contact alarm output 6 points + external drive 5 points
8: Mechanical relay "c" contact alarm output 8 points + external drive 10 points
B: Mechanical relay "a" contact alarm output 12 points + external drive 10 points
F: Mechanical relay "c" contact alarm output 16 points + external drive 20 points
D: Mechanical relay "a" contact alarm output 24 points + external drive 20 points

6-2. Operation of Parameter Setting Menu Screen

In the Parameter Setting Menu screen, specify whether you edit parameters of this software online or offline.
There are three options to select online or offline.

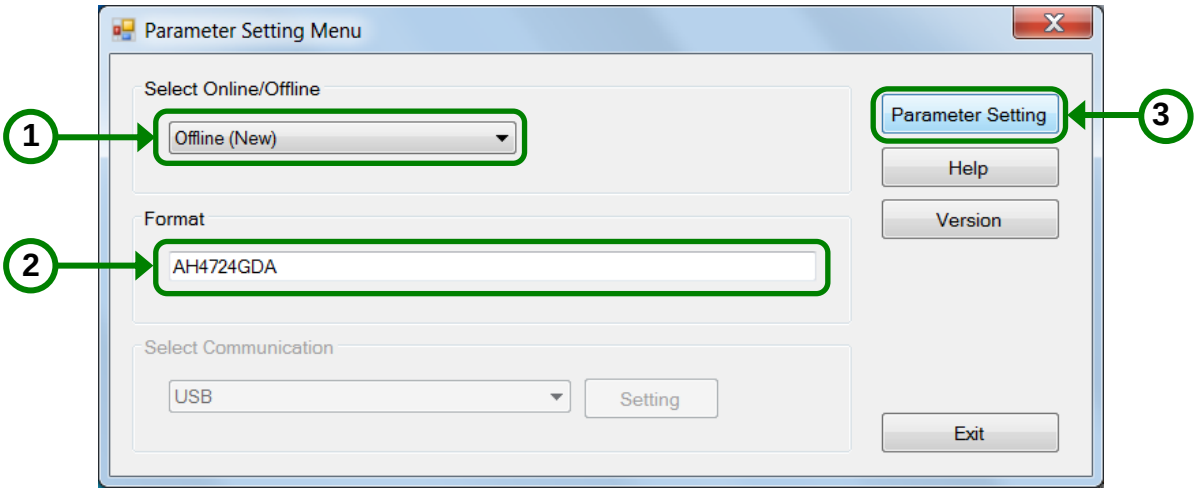
Selection item	Description	Refer to
Offline (New)	Specify this option if you want to create parameters in a new file without communication.	Section 6-2-1
Offline (File)	Specify this option if you want to edit parameters in an existing file without communication.	Section 6-2-2
Online	Specify this option to edit parameters of the instrument through communication.	Section 6-2-3

* You can also show the Help screen or the version from this menu screen (refer to section 6-7 and 6-8).

6-2-1. Offline (New) Setting

Specify this option if you want to create parameters in a new file without communication.

<Procedure>



(1) Select [Offline (New)]
Select [Offline (New)] from [Select Online/Offline].

(2) Enter the format
In [Format], enter the model of the instrument by using one byte characters excluding "- (hyphen)".

(3) Click the [Parameter Setting] button
Click the [Parameter Setting] button to display the Parameter Setting screen, where you can set parameters (refer to section 6-6).

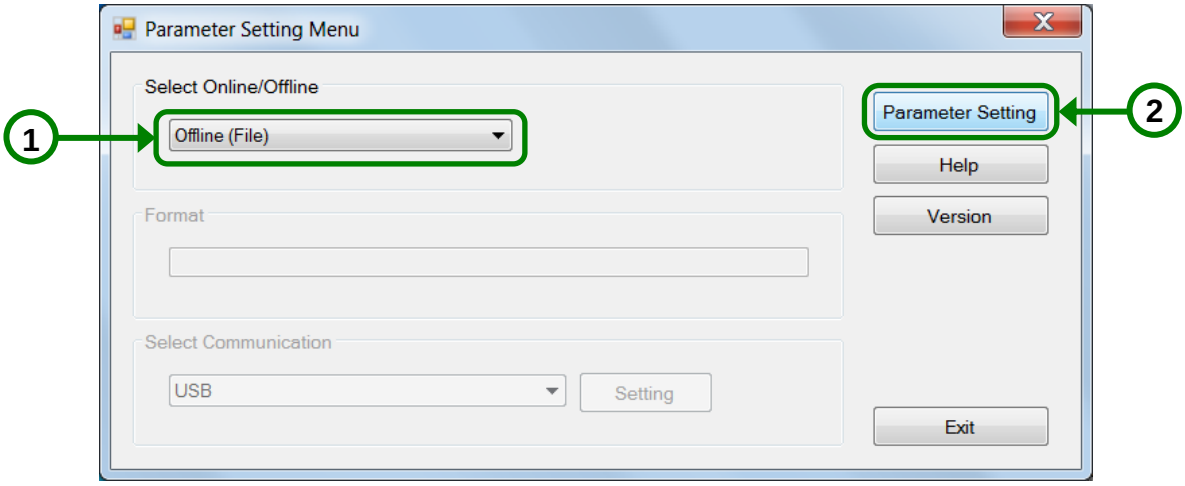
Remarks **If a warning message is displayed**

Close the warning message window by clicking the [OK] button and reconfigure the model.

6-2-2. Offline (File) Setting

Specify this option if you want to edit parameters in an existing file without communication.

<Procedure>

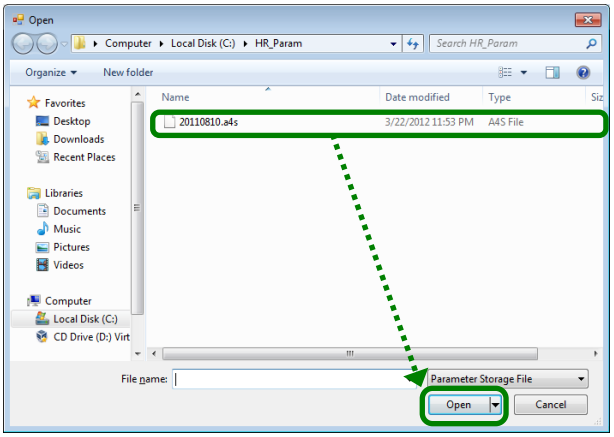


(1) Select [Offline (File)]

Select [Offline (File)] from [Select Online/Offline].

(2) Click the [Parameter Setting] button

The Open screen is displayed. Specify a file and click the [Open] button. The Parameter Setting screen is displayed to enable you to edit the specified file (refer to section 6-6).



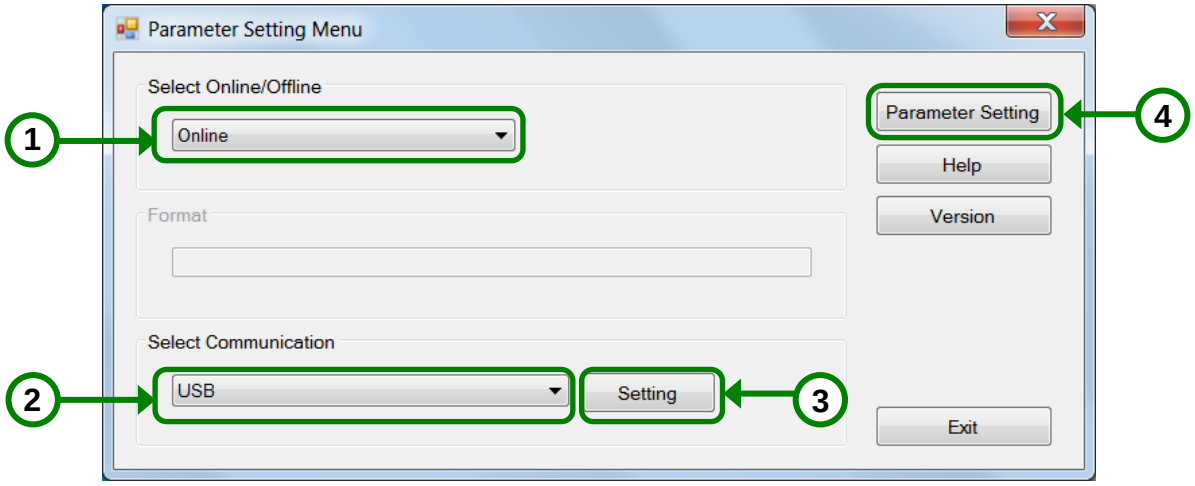
Remarks **If a warning message is displayed**

Close the warning message window by clicking the [OK] button and reconfigure the file.

6-2-3. Online Setting

Specify this option to edit parameters of the instrument through communication.

<Procedure>



(1) Select [Online]

Select [Online] from [Select Online/Offline].

* Check if the PC is connected to the instrument with an appropriate cable for the communication method.

(2) Select [Select Communication]

Select a communication path for this software to communicate with the instrument from the [Select Communication] list.

Selection item
Ethernet
Serial
USB

(3) Click the [Setting] button

Click the [Set] button to display the setting screen for the communication path specified in the [Select Communication] list.

Select Communication	display screen	Refer to
When [Ethernet] is selected	Ethernet adapter setting screen	Refer to section 6-3
When [Serial] is selected	Serial adapter setting screen	Refer to section 6-4
When [USB] is selected	USB adapter setting screen	Refer to section 6-5

(4) Click the [Parameter Setting] button

Click the [Parameter Setting] button to display the Parameter Setting screen, where you can edit parameters for the connected instrument (refer to section 6-6).

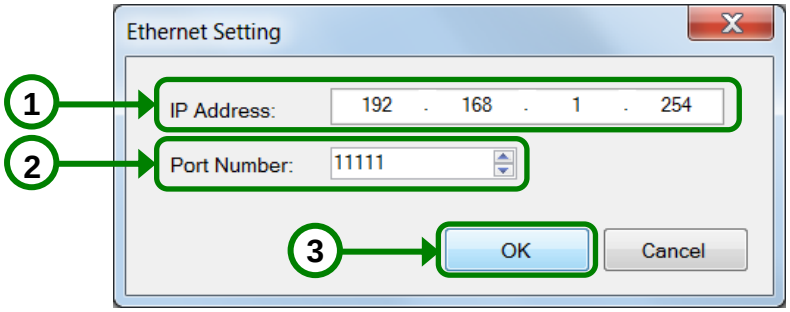
Remarks **If a warning message is displayed**

Close the message window by clicking the [OK] button in the warning message screen and reconfigure parameters after confirming there is no problem with the communication.

6-3. Operation of Ethernet Adapter Setting Screen

Configure the communication adapter for connecting PC to the instrument using Ethernet.
This screen is displayed when you select [Online] and [Ethernet] from the [Select Communication] list in the Parameter Setting Menu screen.

<Procedure>



(1) Enter the IP address

Enter the IP address of the connected instrument using one byte characters.

Setting Range
"0.0.0.0" to "255.255.255.255"

DHCP (obtaining an IP address automatically) cannot be used.
For the IP address, please contact the network administrator of the network you are connecting to.

(2) Enter the port number

Enter the port number.

Setting Range
0 to 65535

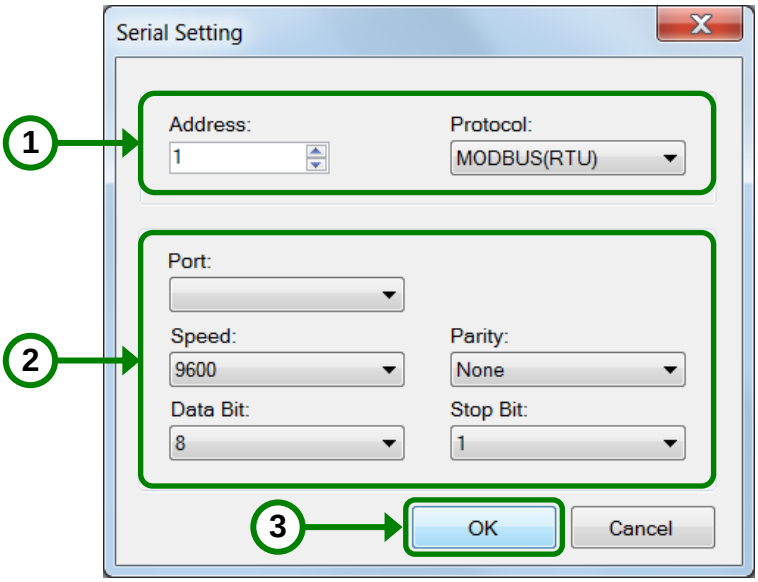
(3) Click the [OK] button

Click the [OK] button to close the Ethernet adaptor setting screen.
Return to the Parameter Setting Menu screen and continue your setting (refer to (4) in section 6-2-3).

6-4. Operation of Serial Adapter Setting Screen

Configure the communication adapter for connecting PC to the instrument using serial.
This screen is displayed when you select [Online] and [Serial] from the [Select Communication] list in the Parameter Setting Menu screen.

<Procedure>



(1) Configure MODBUS

Specify the address and the communications protocol with the connected instrument.

Programming parameter	Setting Range
Address	1 to 99
Protocol	MODBUS (RTU)
	MODBUS (ASCII)

(2) Configure the serial communication

Configure the serial communication.

Programming parameter	Setting Range
Port	Displays the serial port name options obtained from the PC. * This field is blank if serial port names cannot be obtained.
Speed	4800
	9600
	19200
	38400
Data bit	7
	8

Programming parameter	Setting Range
Parity	None
	Odd
	Even
Stop Bit	1
	2

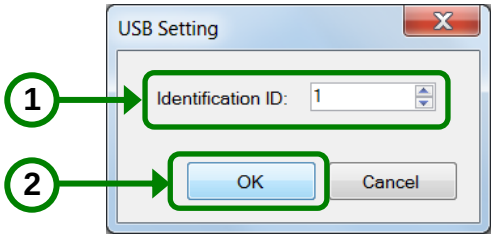
(3) Click the [OK] button

Click the [OK] button to close the serial adaptor setting screen.
Return to the Parameter Setting Menu screen and continue your setting (refer to (4) in section 6-2-3).

6-5. Operation of USB Adapter Setting Screen

Configure the communication adapter for connecting PC to the instrument using USB.
This screen is displayed when you select [Online] and [USB] from the [Select Communication] list in the Parameter Setting Menu screen.

<Procedure>



(1) Enter the identification ID

Enter the identification ID using one byte characters.

Setting Range
1 to 5

(2) Click the [OK] button

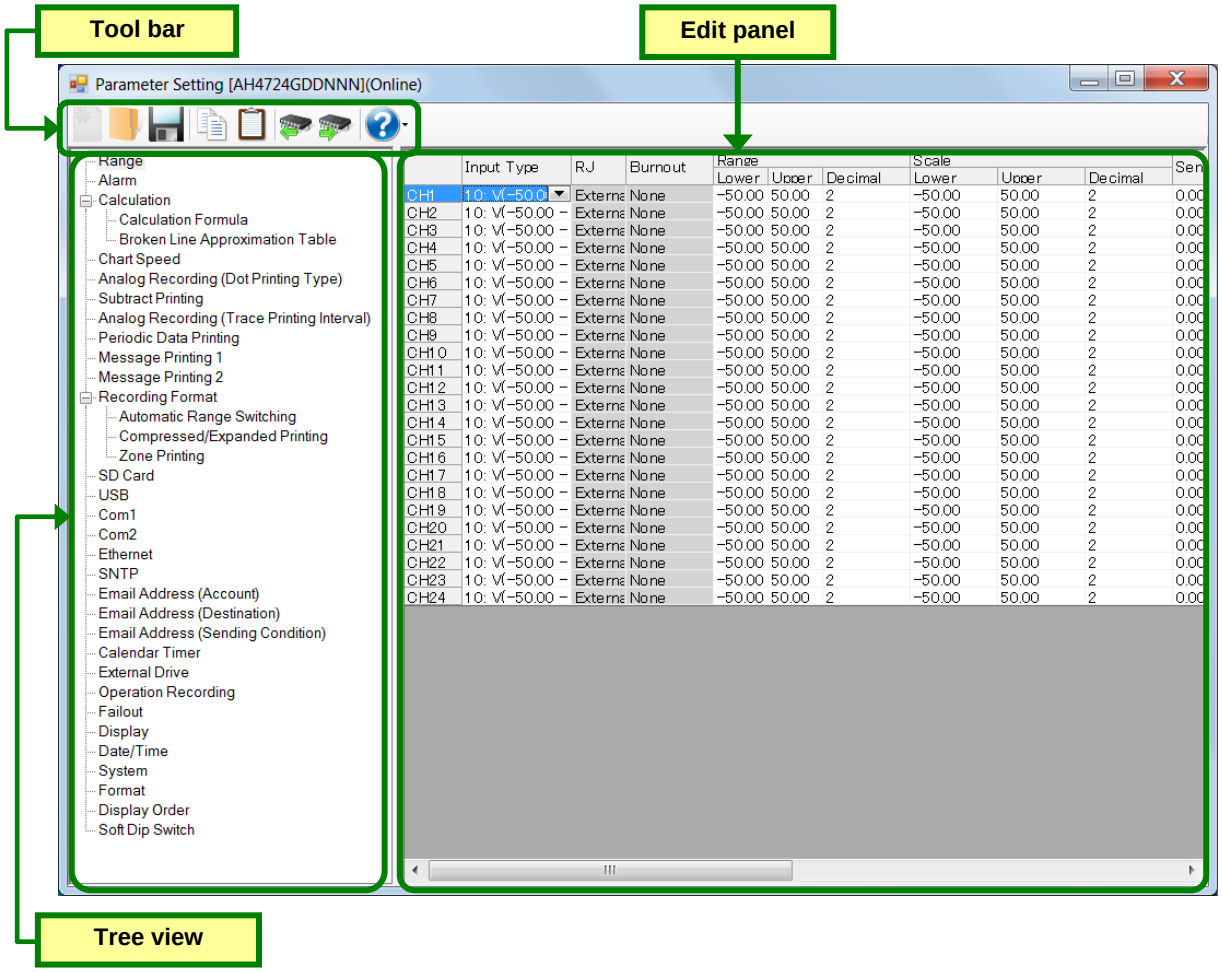
Click the [OK] button to close the USB adaptor setting screen.
Return to the Parameter Setting Menu screen and continue your setting (refer to (4) in section 6-2-3).

6-6. Operation of Parameter Setting Screen

The Parameter Setting screen consists of the tool bar, tree view, and edit panel.
The tool bar allows you to create and store a file and perform external input/output of parameters, the tree view to select setting items for obtained parameters, and the edit panel to edit setting parameter values.

Remarks

When you edit setting parameters, click the [Save] button or the [Parameter Writing] button as appropriate before closing the Parameter Setting screen.
If you close the Parameter Setting screen without clicking the [Save] button or the [Parameter Writing] button after editing setting parameters, the data you entered would be lost.



Display Configuration	Description
Tool bar	From the tool bar, you can operate the files, read and write parameters, and show the Help page. Instrument information obtained from the tool bar is displayed in the tree view and the edit panel. Buttons on the tool bar are enabled or disabled depending on whether you select online or offline. When buttons are enabled, they are displayed in color and can be clicked. When buttons are disabled, they are displayed in gray and cannot be clicked (refer to the table in the next page).
Tree view	In the tree view, instrument information obtained from the tool bar is displayed by category (setting item). When you select a setting item displayed in the tree view, its setting parameter is displayed in the edit panel. The setting items displayed in the tree view vary depending on the instrument model to be edited (refer to section 6-1-5).
Edit panel	In the edit panel, the setting parameters of the setting item selected in the tree view are displayed. You can select a setting parameter displayed in the edit panel to edit its value.

[Buttons on the tool bar and their availability] ○: Enabled x: Disabled

Button		Description	Enabled/Disabled when selecting		
			Offline (New)	Offline (File)	Online
	New	Creates a new setting file. The edit panel is updated with the initial values.	○	○	×
	Open	Reads a specified setting file and displays its parameters in the edit panel.	○	○	○
	Save	Overwrites the setting file when it exists or stores the file with a new name in any folder when the specified file does not exist.	○	○	○
	Copy	Duplicates parameters and hold them temporarily (see the table below). The duplicated parameters are kept after a paste operation and will be updated when this button is clicked the next time.	○ (* 1)	○ (* 1)	○ (* 1)
	Paste	Pastes the parameters duplicated by the [Copy] button (see the table below).	○ (* 2)	○ (* 2)	○ (* 2)
	Parameter Reading	Reads parameters from the connected instrument through communication (refer to section 4) and displays them in the tree view and the edit panel.	×	×	○
	Parameter Writing	Writes the edited parameters to the connected instrument through communication (refer to section 4).	×	×	○
	Help	Shows the help information. You can see the help (refer to section 6-7) and version information (refer to section 6-8).	○	○	○

* 1: Enabled only when the [Copy] button is available in the displayed edit panel.
* 2: Enabled only when parameters are duplicated by the [Copy] button.

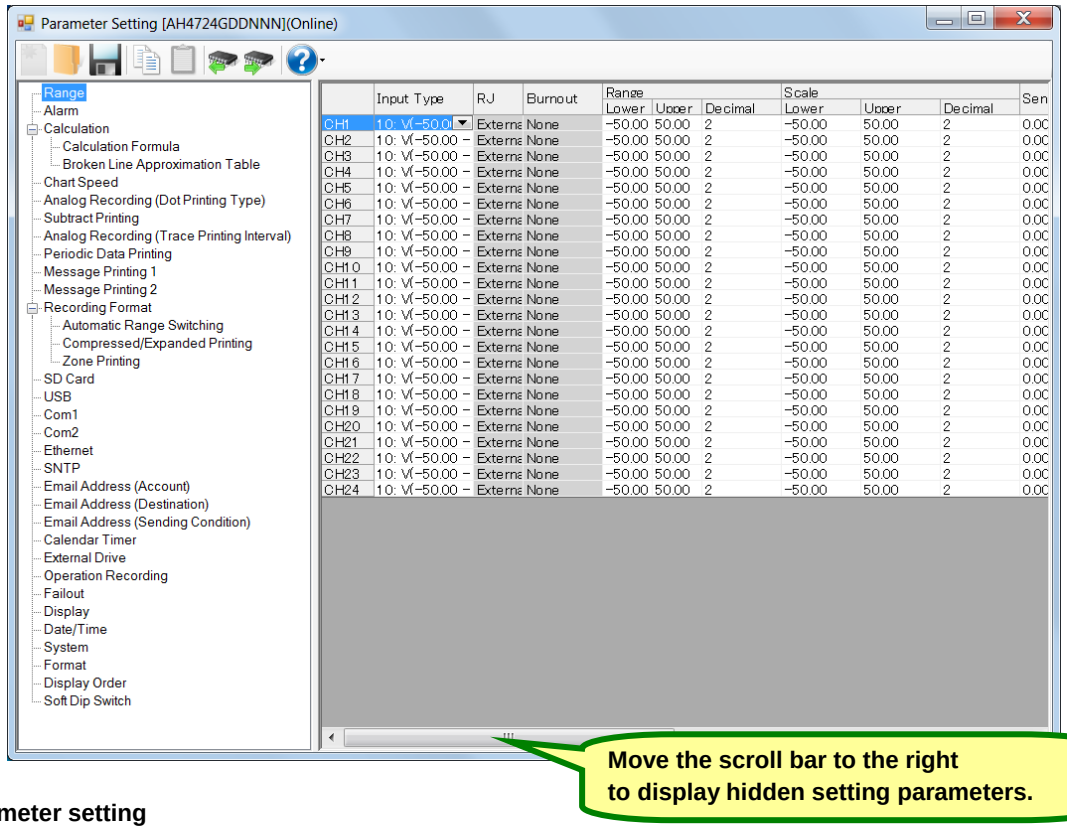
[Edit panels in which the [Copy] and [Paste] buttons are available and a set of parameters to be duplicated]

Edit panel	A set of parameters to be duplicated	Refer to
Range	Parameters belonging to one CH	2. in section 6-6-1
Alarm	Parameters belonging to one alarm level	2. in section 6-6-2
Calculation	Parameters belonging to one CH	2. in section 6-6-3
Calculation Formula	Parameters belonging to one calculation formula number	2. in section 6-6-4
Broken Line Approximation Table	Parameters belonging to one table	2. in section 6-6-5
Subtract Printing	Parameters belonging to one CH	2. in section 6-6-8
Periodic Data Printing (Specified Time)	Parameters belonging to one specified time number	2. in section 6-6-11
Message Printing 1	Parameters belonging to one message number	2. in section 6-6-12
Automatic Range Switching	Parameters belonging to one CH	2. in section 6-6-15
Compressed/Expanded Printing	Parameters belonging to one CH	2. in section 6-6-16
Calendar Timer	Parameters belonging to one timer number	2. in section 6-6-27
Operation Recording	Parameters belonging to one external drive number	2. in section 6-6-29

6-6-1. Range Settings "Range"

- The range settings for the input channel are displayed in the table format to enable you to edit them.
- The columns of the table present the setting parameter types, and the rows present the channel numbers.
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
- The number of the displayed channels vary depending on the instrument model.

  * Refer to the instruction manual of the instrument and other manuals for more details on the settings.



1. Parameter setting

For the range settings, you can edit the following setting parameters by the channel.

[Range Settings "Range" Parameter List]

Setting parameter	Function	Remarks
Input Type "INPUT"	Select the input type	**For AL4000/AH4000** * 1: Refer to the table "[Input type for AL4000/AH4000]" **For KL4000/KH4000** * 2: Refer to the table "[Input type for KL4000/KH4000]"
RJ "RJ"	Select whether the reference junction compensation contact is used or not Software screen: Internal / Instrument screen: INT Software screen: External / Instrument screen: EXT	If you change the input type to [Unused], [DC voltage], or [Resistance thermometer], for which you cannot set whether RJ is used or not, the [RJ] setting is changed to [External].
Burnout "BURN"	Select whether the burn is detected or not and the operation if detected Software screen: None / Instrument screen: None Software screen: Up / Instrument screen: UP Software screen: Down / Instrument screen: DOWN	If you change the input type to [Unused] or the DC voltage more than ±69mV, for which you cannot set the burnout, the [Burnout] setting is changed to [None].
Decimal Location	Set the decimal location	Refer to section 6-1
Scale Minimum "RANGE-L"	The minimum value of the measurement range to be used in the range that is determined by the input type	-30000 to 30000 It can be set to three places of decimals. Example: -30.000 The decimal location changes according to the one of the range An overflow value is displayed as "#######"
Scale Maximum "RANGE-H"	The maximum value of the measurement range to be used in the range that is determined by the input type	
Scale Lower Limit "SCALE-L"	The minimum value to be used for scaling for the range determined by the range minimum and maximum values when the voltage range such as mV is selected as the input type	-30000 to 99999 It can be set to three places of decimals. Example: -30.000 The decimal location changes according to the one of the scale When online, an overflow value is displayed as "#######"
Scale Upper Limit "SCALE-H"	The maximum value to be used for scaling for the range determined by the range minimum and maximum values when the voltage range such as mV is selected as the input type	

<table>
<tr><td>Sensor Correction
"SHIFT"</td><td>The offset amount for the data after scaling</td><td>-30000 to 99999
See the remarks of "Scale Lower/Upper Limit" for details</td></tr>
<tr><td>Chart Recording
Lower Limit
"REC-L"</td><td>The minimum value (Left) of the chart recording</td><td rowspan="2">-30000 to 99999
It can be set to three places of decimals. Example: -30.000
The decimal location changes according to the one of the chart recording
When online, an overflow value is displayed as "#######"</td></tr>
<tr><td>Chart Recording
Upper Limit
"REC-H"</td><td>The maximum value (Right) of the chart recording</td></tr>
<tr><td>Unit
"UNIT"</td><td>Set the number of characters using up to 6 characters</td><td rowspan="2">Available characters (one byte):
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789+-*/%^().,_:;<>=![]¥
(refer to section 6-1-2)</td></tr>
<tr><td>Tag
"TAG"</td><td>Set the number of characters using up to 10 characters</td></tr>
<tr><td>Display
"Disp"</td><td>Select whether the measurement value is displayed or not<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Display</td><td>ON</td></tr><tr><td>Hide</td><td>OFF</td></tr></table></td><td></td></tr>
<tr><td>Analog Recording
"Rec"</td><td>Specify whether the analog recording is turned on or off<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Record</td><td>ON</td></tr><tr><td>Do Not Record</td><td>OFF</td></tr></table></td><td></td></tr>
<tr><td>Digital
Recording/Printing
"DIGI.REC"</td><td>Select the digital recording/printing is turned on or off<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Record</td><td>ON</td></tr><tr><td>Do Not Record</td><td>OFF</td></tr></table></td><td></td></tr>
<tr><td>SD Card Recording
"SD-CARD.REC"</td><td>Specify whether the SD card recording is turned on or off<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Record</td><td>ON</td></tr><tr><td>Do Not Record</td><td>OFF</td></tr></table></td><td></td></tr>
</table>

***1: [Input type for AL4000/AH4000]**

Input type (Initial value)	Input type (Initial value)	Input type (Initial value)	Input type (Initial value)
Unused	25: E (-200.0 to 350.0)	51: U (-200.0 to 250.0)	47: CR-AuFe (0.0 to 280.0)
01: mV (-13.80 to 13.80)	26: E (-200 to 900)	52: U (-200.0 to 500.0)	94: Au/Pt (0.0 to 1000.0)
02:mV (-27.60 to 27.60)	27: J (-200.0 to 250.0)	53: U (-200.0 to 600.0)	70: Pt100 (-140.0 to 150.0)
03: mV (-69.00 to 69.00)	28: J (-200.0 to 500.0)	54: L (-200.0 to 250.0)	71: Pt100 (-200.0 to 300.0)
04: mV (-200.0 to 200.0)	29: J (-200 to 1200)	55: L (-200.0 to 500.0)	84: Pt100 (-200.0 to 649.0)
05: mV (-500.0 to 500.0)	30: T (-200.0 to 250.0)	56: L (-200 to 900)	72: Pt100 (-200.0 to 850.0)
16: V (-1.00 to 1.00)	31: T (-200.0 to 400.0)	40: W-WRe26 (0 to 2315)	73: oPt100 (-140.0 to 150.0)
07: V (-5.00 to 5.00)	32: R (0 to 1200)	41:WRe5-WRe26(0 to 2315)	74: oPt100 (-200.0 to 300.0)
08: V (-10.00 to 10.00)	33: R (0 to 1760)	44: NiMo-Ni (0.0 to 290.0)	75: oPt100 (-200.0 to 649.0)
09: V (-20.00 to 20.00)	34: S (0 to 1300)	45: NiMo-Ni (0.0 to 600.0)	76: JPt100 (-140.0 to 150.0)
10: V (-50.00 to 50.00)	35: S (0 to 1760)	46: NiMo-Ni (0 to 1310)	77: JPt100 (-200.0 to 300.0)
21: K (-200.0 to 300.0)	36: B (0 to 1820)	48: Platinel2 (0.0 to 350.0)	78: JPt100 (-200.0 to 649.0)
22: K (-200.0 to 600.0)	37: N (-200.0 to 400.0)	49: Platinel2 (0.0 to 650.0)	79: Pt50 (-200.0 to 649.0)
23: K (-200 to 1370)	38: N (-200.0 to 750.0)	50: Platinel2 (0 to 1390)	80: Pt-Co (4.0 to 374.0)
24: E (-200.0 to 200.0)	39: N (-200 to 1300)	43: PtRh40-20 (0 to 1880)	

***2: [Input type for KL4000/KH4000]**

Input type (Initial value)	Input type (Initial value)	Input type (Initial value)	Input type (Initial value)
Unused	29: J (-200 to 1200)	68: L (-150.0 to 120.0)	71: Pt100 (-200.0 to 300.0)
13: mV (-6.900 to 6.900)	63: T (-150.0 to 150.0)	55: L (-200.0 to 500.0)	84: Pt100 (-200.0 to 649.0)
01: mV (-13.80 to 13.80)	30: T (-200.0 to 250.0)	56: L (-200 to 900)	95: oPt100 (-50.0 to 50.0)
02:mV (-27.60 to 27.60)	31: T (-200.0 to 400.0)	40: W-WRe26 (0 to 2315)	88: oPt100 (-100.0 to 100.0)
03: mV (-69.00 to 69.00)	33: R (0 to 1760)	41:WRe5-WRe26(0 to 2315)	73: oPt100 (-140.0 to 150.0)
15: mV (-100.0 to 100.0)	35: S (0 to 1760)	46: NiMo-Ni (0 to 1310)	74: oPt100 (-200.0 to 300.0)
06: V (-2.00 to 2.00)	36: B (0 to 1820)	66: Platinel2 (0.0 to 150.0)	75: oPt100 (-200.0 to 649.0)
07: V (-5.00 to 5.00)	64: N (-200.0 to 200.0)	48: Platinel2 (0.0 to 350.0)	92: JPt100 (-50.0 to 50.0)
65: K (-150.0 to 150.0)	37: N (-200.0 to 400.0)	49: Platinel2 (0.0 to 650.0)	93: JPt100 (-100.0 to 100.0)
21: K (-200.0 to 300.0)	38: N (-200.0 to 750.0)	50: Platinel2 (0 to 1390)	76: JPt100 (-140.0 to 150.0)
22: K (-200.0 to 600.0)	39: N (-200 to 1300)	43: PtRh40-20 (0 to 1880)	77: JPt100 (-200.0 to 300.0)
23: K (-200 to 1370)	67: U (-150.0 to 150.0)	47: CR-AuFe (0.0 to 280.0)	78: JPt100 (-200.0 to 649.0)
25: E (-200.0 to 350.0)	51: U (-200.0 to 250.0)	69: Pt100 (-50.0 to 50.0)	79: Pt50 (-200.0 to 649.0)
26: E (-200 to 900)	52: U (-200.0 to 500.0)	81: Pt100 (-100.0 to 100.0)	80: Pt-Co (4.0 to 374.0)
28: J (-200.0 to 500.0)	53: U (-200.0 to 600.0)	70: Pt100 (-140.0 to 150.0)	

2. Copy and paste operations for range setting

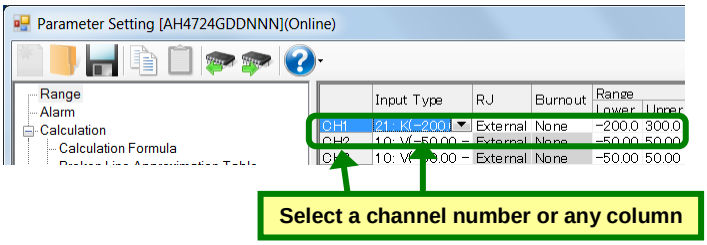
For the range setting, you can copy and paste parameters per one channel (parameters belonging to one channel).

<How to copy/paste>

(1) Select the copy source

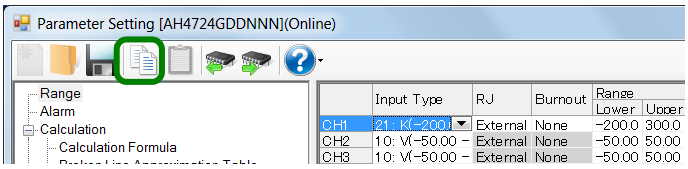
Click to select a channel number or any column to copy from.

* You can copy parameters per one channel. That means, you cannot select multiple channels to copy the parameters at a time.



(2) Click the [Copy] button

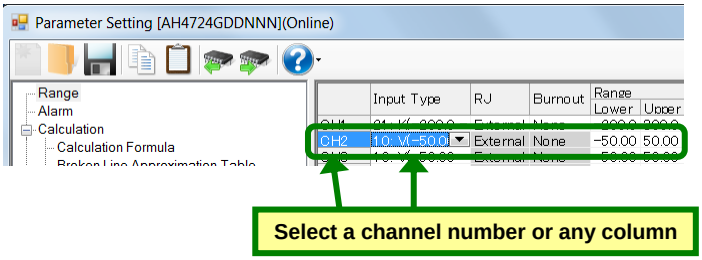
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

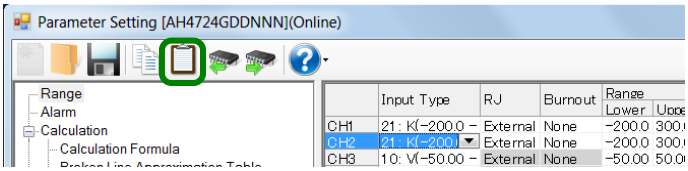
Click to select a channel number or any column to paste to.

* You can paste the parameters to one channel. That means, you cannot select multiple channels to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.



Remarks **"Keeping copied data" and "Copy/paste unit"**

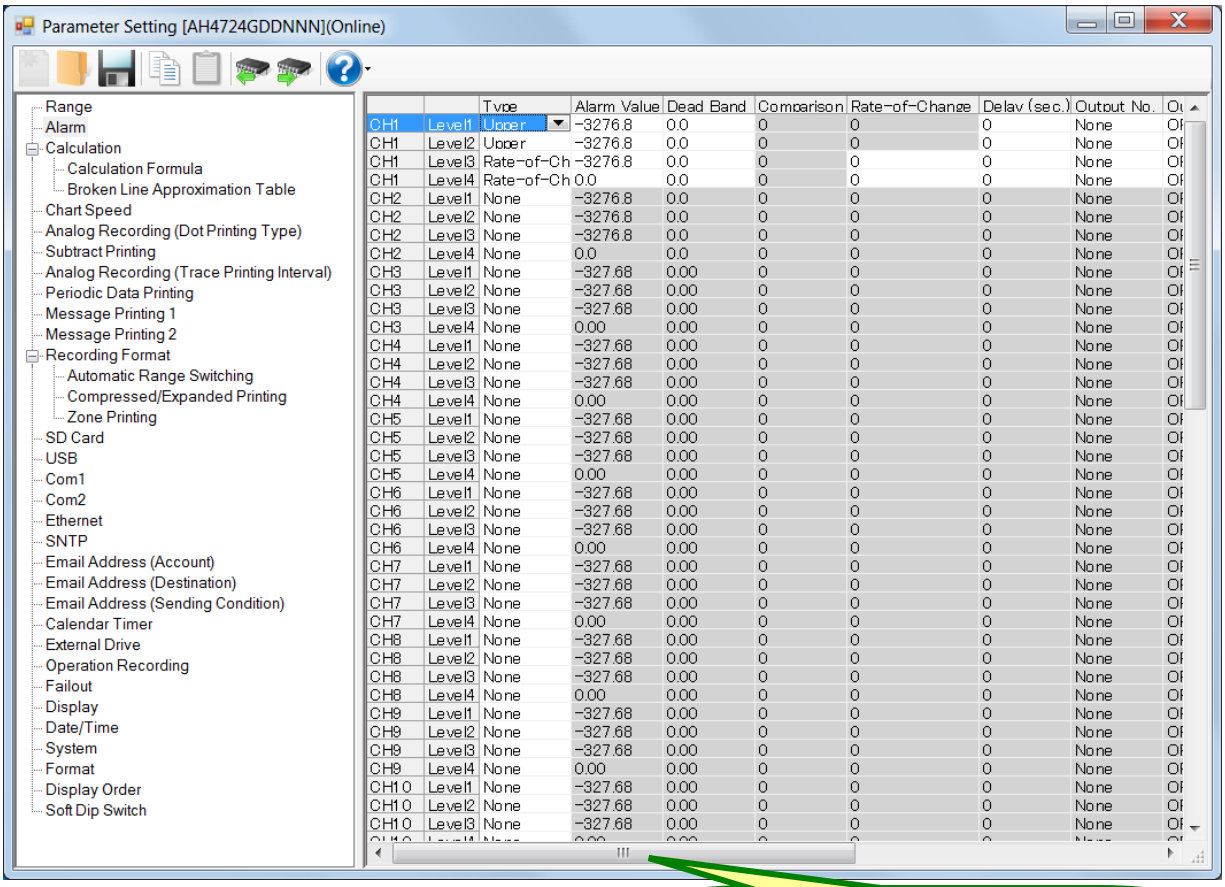
- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one channel.

Remarks **Effects on other settings**

Changing the input type, scale upper limit, or scale lower limit in the range setting can affect other settings such as the alarm, dead band, and so on.
This applies to the copy operation. Please pay attention.

6-6-2. Alarm Settings "Alarm"

- The alarm settings for the alarm channels are displayed in the table format to enable you to edit them.
- The columns of the table present the setting parameter types, and the rows present the pairs of the channel number and the alarm level.
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
- The number of the displayed channels varies depending on the instrument model.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

For the alarm settings, you can edit the following setting parameters by the level of the channel.

[Alarm Settings "Alarm" Parameter List]

Setting parameter	Function	Remarks
Level "Level"	Select the setting level Software screen / Instrument screen Level1 / (Level) 1 Level2 / (Level) 2 Level 3* / (Level) 3 * Level 4* / (Level) 4 * * Displayed only in AL4000/AH4000	
Type "Mode"	Select the alarm type Software screen / Instrument screen None / None Upper / H Lower / L Rate-of-Change Upper / U Rate-of-Change Lower / D Diff. Upper / B Diff. Lower / S	

<table>
<tr><td>Alarm Value
"Value"</td><td>Specify the alarm judgment value
* Displays "None" only in KL4000/KH4000</td><td>-30000 to 99999
The decimal location changes according to the one of the scale
When online, an overflow value is displayed as "########"</td></tr>
<tr><td>Dead Band
"D.Band"</td><td>Setting the dead band width</td><td>0 to 99999
See the remarks of "Alarm Value" for details</td></tr>
<tr><td>Comparison CH
"Comp.CH"</td><td>Specify the channel (standard CH) to be subtracted from the setting channel
(Only for the differential alarm)<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1 to 24</td><td>1 to 24</td></tr></table></td><td>The number of the displayed channels vary depending on the instrument model.</td></tr>
<tr><td>Rate-of-Change Standard Time (sec.)
"Std.TIME"</td><td>Specify the rate-of-change standard time
(Only for the rate-of-change alarm)<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 6000</td><td>0 to 6000</td></tr></table></td><td>The minimum setting unit is 1 second</td></tr>
<tr><td>Delay (sec.)
"Delay"</td><td>Specify the delay time from an alarm decision to the output<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 6000</td><td>0 to 6000</td></tr></table></td><td>The minimum setting unit is 1 second</td></tr>
<tr><td>Output No.
"Relay No."</td><td>Specify the location to which an alarm is output (relay number)<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 24</td><td>1 to 24</td></tr><tr><td>Dummy Output</td><td>99</td></tr></table></td><td>The number of the displayed channels vary depending on the instrument model.</td></tr>
<tr><td>Output Mode
"And/Or"</td><td>Select the connection method for connecting to the output destination<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>OR</td><td>Or</td></tr><tr><td>AND</td><td>And</td></tr></table></td><td></td></tr>
<tr><td>Trigger Message No.
"Message No Activation"</td><td>Specify the message No. to be printed when an alarm occurs<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 20</td><td>1 to 20</td></tr></table></td><td></td></tr>
<tr><td>Cancel Message No.
"Message No Reset"</td><td>Specify the message No. to be printed when an alarm is reset<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 20</td><td>1 to 20</td></tr></table></td><td></td></tr>
<tr><td>Display Stored
"Hold-DISP"</td><td>Select whether the alarm display and the Status LED "ALM" are stored or not<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Stop</td><td>Not Hold</td></tr><tr><td>Cancel By Key Operation</td><td>Hold:Reset by KEY</td></tr><tr><td>Cancel By External Drive</td><td>Hold:Reset by EX</td></tr></table></td><td></td></tr>
<tr><td>Maintain Output
"Hold-OUT"</td><td>Select whether the alarm output status is maintained or not<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Stop</td><td>Not Hold</td></tr><tr><td>Cancel By Key Operation</td><td>Hold:Reset by KEY</td></tr><tr><td>Cancel By External Drive</td><td>Hold:Reset by EX</td></tr></table></td><td></td></tr>
<tr><td>Cancel External Drive No.
"Hold-EX"</td><td>Specify the linking external drive No. when [Hold:Reset by EX] is selected in [Hold-OUT]<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 20</td><td>1 to 20</td></tr></table></td><td>If the alarm status is "reset", the maintained output status is canceled when you switch the external drive No. specified here from OFF to ON
The number of the displayed channels vary depending on the instrument model.</td></tr>
</table>

.

Remarks **Relation with the decimal location in the scale setting value**

The decimal locations of the alarm value and dead band are changed according to the one of the scale setting value for the setting channel. If you change the decimal location of the scale in Range settings, the ones of the alarm value and dead band are changed accordingly. The dead band is specified with an absolute value.

2. Copy and paste operations for alarm setting

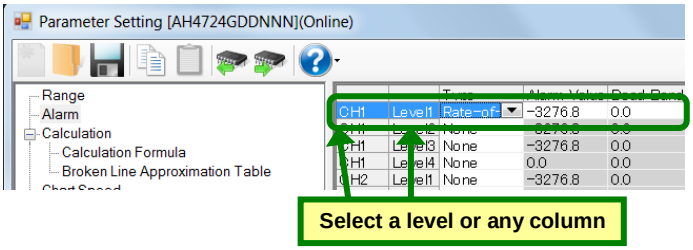
For the alarm setting, you can copy and paste parameters per level (parameters belonging to one alarm level).

<How to copy/paste>

(1) Select the copy source

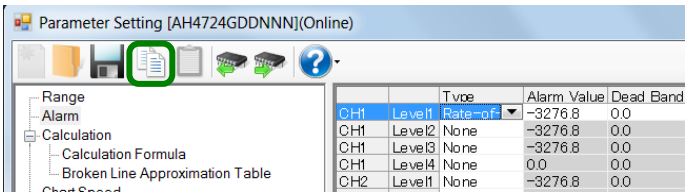
Click to select a level or any column to copy from.

* You can copy parameters per one level. That means, you cannot select multiple levels to copy the parameters at a time.



(2) Click the [Copy] button

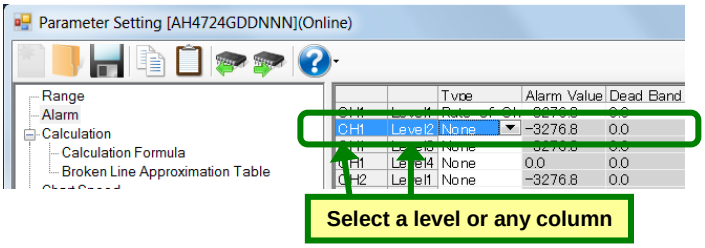
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

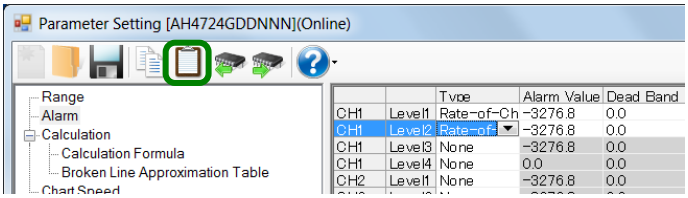
Click to select a level or any column to paste to.

* You can paste the parameters to one level. That means, you cannot select multiple levels to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

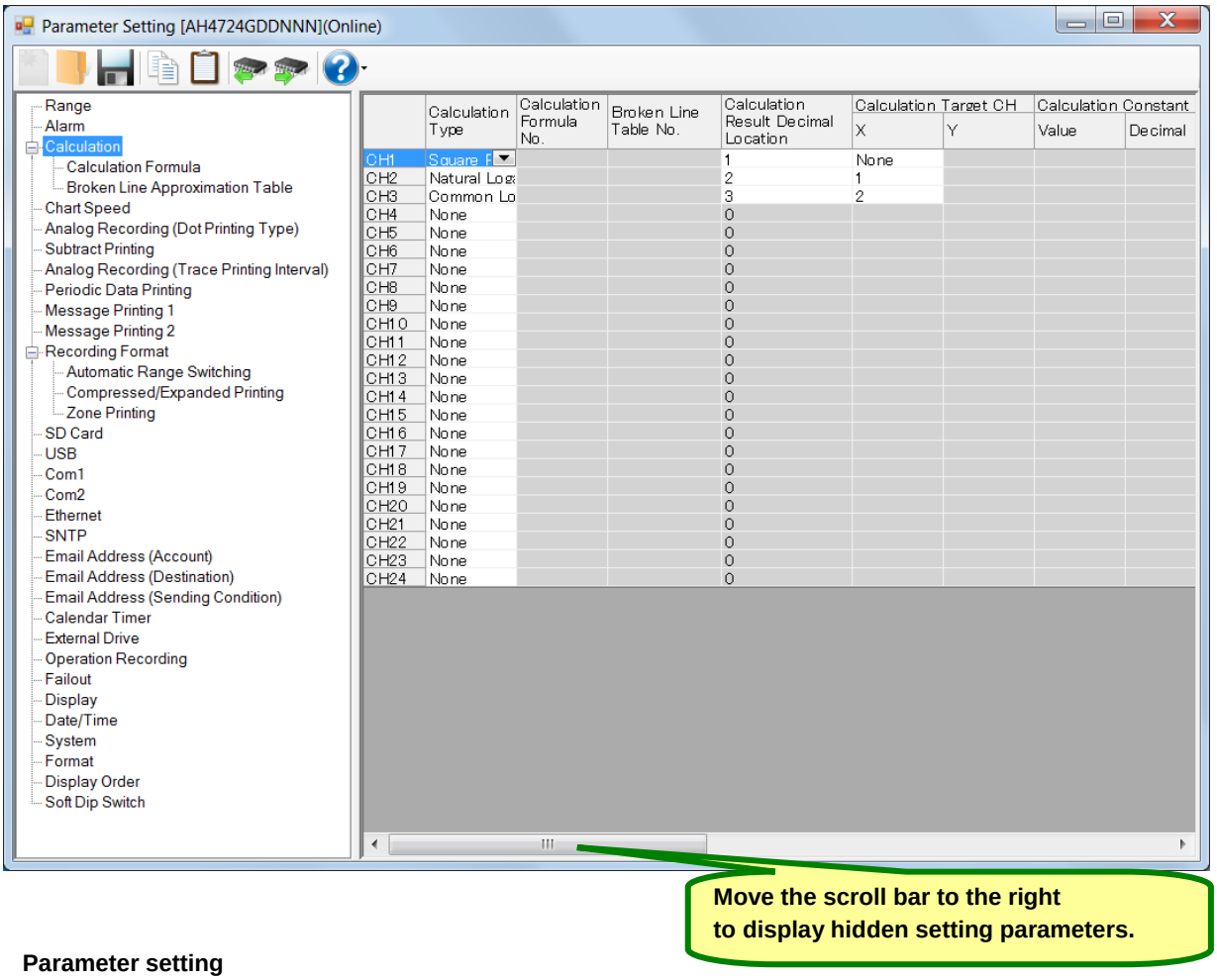


Remarks "Keeping copied data" and "Copy/paste unit"

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one level.

6-6-3. Calculation Settings "Calc"

- The calculation settings for the input channel are displayed in the table format to enable you to edit them.
- The columns of the table present the setting parameter types, and the rows present the channel numbers.
- When you select [Calculation Formula] in [Calculation Type], you need to perform the Calculation Formula Settings (refer to section 6-4-4). When you select [Broken Line Approximation], you need to perform the Broken Line Approximation Table Settings (refer to section 6-6-5).
  * Refer to the instruction manual of the instrument for more details on the settings.
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
- The number of the displayed channels vary depending on the instrument model.



1. Parameter setting

For the calculation settings, you can edit the following setting parameters by the channel.

[Calculation Settings "Calc" Parameter List]

Setting parameter	Function	Remarks
Calculation Type "Kind"	Select the calculation type	

Software screen	Instrument screen
None	None
Square Roots Calculation	Root
Natural Logarithmic Calculation	LoGe
Common Logarithmic Calculation	LOG10
Integration Calculation	INT
Temperature/Humidity Calculation	Humidity
Data Communication Input	COM.Input
Arithmetic Calculation 1(MUL)	MUL
Arithmetic Calculation 2(DIV)	DIV
Maximum Value Calculation	High-Peak
Minimum Value Calculation	Low-Peak
Average Calculation	Average
Exponential Calculation	Power
Calculation Formula	Formula
Broken Line Approximation	BrokenLine

<table>
<tr><td>Calculation Formula No.
"Form.No."</td><td>When you select [Calculation Formula] in [Calculation Type], specify the calculation formula No. to use
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 12</td><td>1 to 12</td></tr></table></td><td></td></tr>
<tr><td>Broken Line Table No.
"Seg.Table No."</td><td>When you select [Broken Line Approximation] in [Calculation Type], specify the broken line table No. to use
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 6</td><td>1 to 6</td></tr></table></td><td></td></tr>
<tr><td>Calculation Result Decimal Location
"Decimal point"</td><td>Specify the decimal location in the calculation result
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 3</td><td>0 to 3</td></tr></table></td><td></td></tr>
<tr><td>Calculation Target CH X
"CH.X"</td><td>Specify the CH for the target X data to be used in calculations
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 24</td><td>1 to 24</td></tr></table></td><td>The number of the displayed channels varies depending on the instrument model.</td></tr>
<tr><td>Calculation Target CH Y
"CH.Y"</td><td>Specify the CH for the target Y data to be used in calculations
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 24</td><td>1 to 24</td></tr></table></td><td>The number of the displayed channels varies depending on the instrument model.</td></tr>
<tr><td>Decimal Location</td><td>Specify the decimal location in the calculation constant A - D</td><td>It can be set to three places of decimals. Example: -30.000</td></tr>
<tr><td>Calculation Constant A
"Const.A"</td><td>When you select [Arithmetic Calculation 1(MUL)] and [Arithmetic Calculation 2(DIV)] in [Calculation Type], specify [Calculation Constant A]</td><td rowspan="4">-30000 to 99999
This changes according to the decimal location of each calculation constant value
It can be set to three places of decimals. Example: -30.000
When online, an overflow value is displayed as "#######"</td></tr>
<tr><td>Calculation Constant B
"Const.B"</td><td>When you select [Arithmetic Calculation 1(MUL)] and [Arithmetic Calculation 2(DIV)] in [Calculation Type], specify [Calculation Constant B]</td></tr>
<tr><td>Calculation Constant C
"Const.C"</td><td>When you select [Arithmetic Calculation 1(MUL)] in [Calculation Type],
specify [Calculation Constant C]</td></tr>
<tr><td>Calculation Constant D
"Const.D"</td><td>When you select [Arithmetic Calculation 1(MUL)] in [Calculation Type],
specify [Calculation Constant D]</td></tr>
<tr><td>Start Time (Hour, Minute)
"[Start]"</td><td>Specify the calculation start time
After setting this value, the calculation is postponed until the specified start time (Until then, the data is invalid)
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0*：00 to 23*：59</td><td>0*：00 to 23*：59</td></tr></table>*"-" can be set as the "hour" in the time</td><td>If "-" is set, the calculation starts as follows:.
<u>Integration:</u>
Starts by the external reset
<u>Maximum value, Minimum value, Average, Calculation formula:</u>
Starts when the power is turned on or immediately after setting this value</td></tr>
<tr><td>Interval (Hour, Minutes)
"[Interval]"</td><td>Specify the calculation interval
When an integration operation is specified, the integrated value is reset with this interval
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0*：00 to 24*：59</td><td>0*：00 to 24*：59</td></tr></table>*"-" can be set as the "hour" in the time</td><td>If "-" is set, the interval is invalid.</td></tr>
<tr><td>Time Unit
"TimeUnit"</td><td>Integration time unit
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Hour</td><td>Hour</td></tr><tr><td>Minute</td><td>Min</td></tr><tr><td>Second</td><td>Sec</td></tr></table></td><td></td></tr>
<tr><td>Reset Method
"INT-Reset"</td><td>Specify the method to reset the integrated value from an integration operation
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>None</td></tr><tr><td>Interval</td><td>Interval</td></tr><tr><td>External Drive (Batch)</td><td>EX (All)</td></tr><tr><td>External Drive (Individual)</td><td>EX</td></tr></table></td><td></td></tr>
<tr><td>External Drive No.
"INT-Reset.EX"</td><td>If you select [External Drive (Batch)] or [External Drive (Individual)] in [Reset Method], specify the linking external drive No.
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 20</td><td>1 to 20</td></tr></table></td><td>The number vary depending on the instrument model.</td></tr>
</table>

2. Copy and paste operations for calculation setting

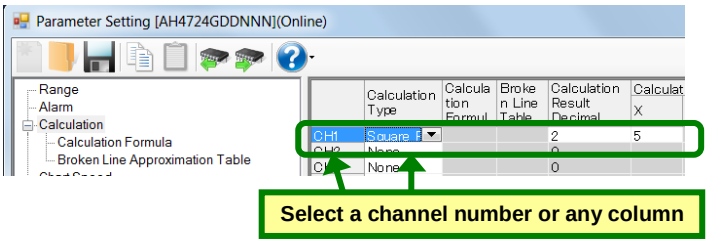
For the calculation setting, you can copy and paste parameters per channel (parameters belonging to one channel).

<How to copy/paste>

(1) Select the copy source

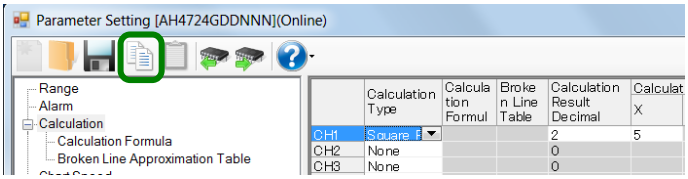
Click to select a channel number or any column to copy from.

* You can copy parameters per one channel. That means, you cannot select multiple channels to copy the parameters at a time.



(2) Click the [Copy] button

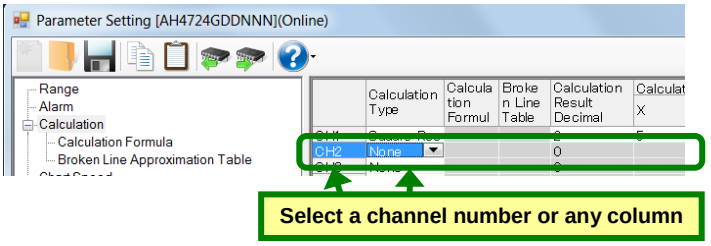
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

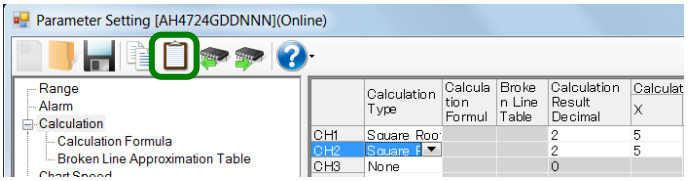
Click to select a channel number or any column to paste to.

* You can paste the parameters to one channel. That means, you cannot select multiple channels to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

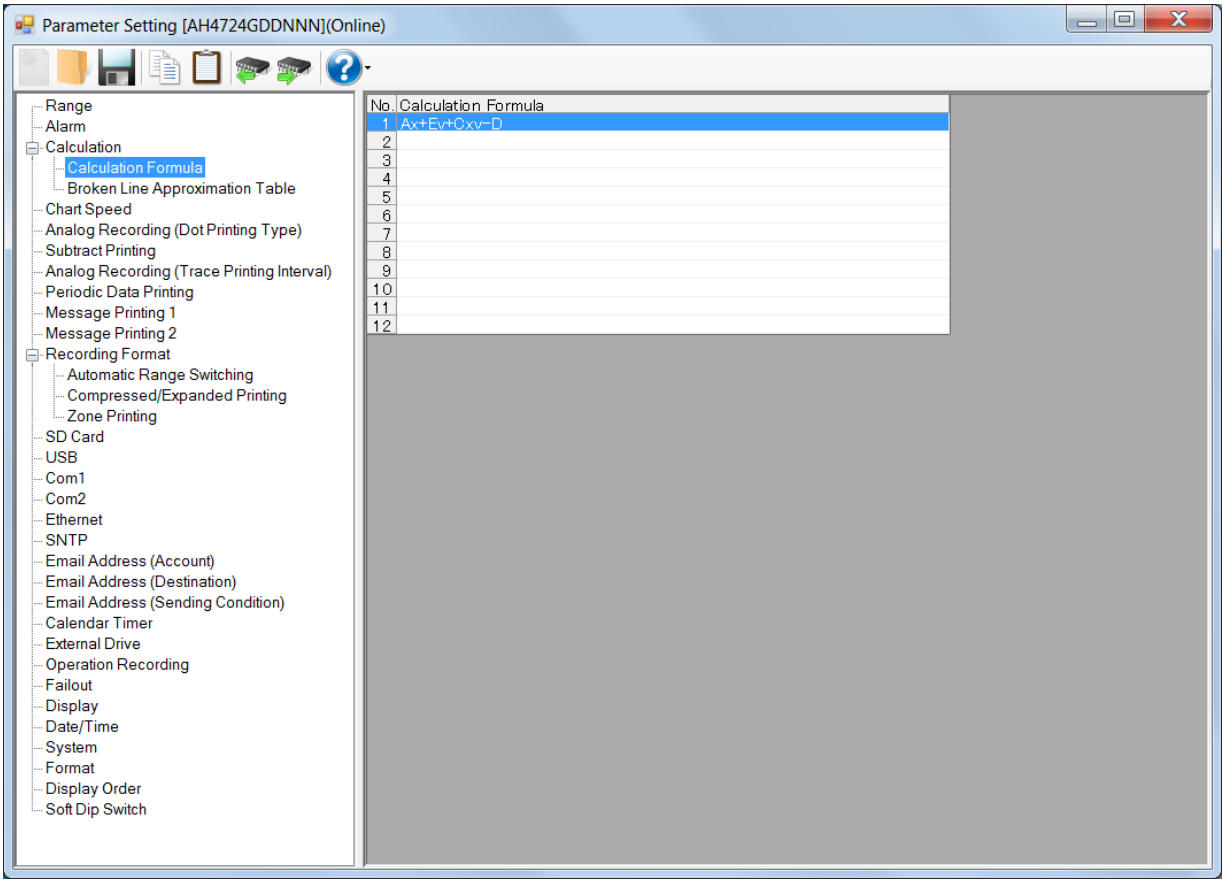


Remarks **"Keeping copied data" and "Copy/paste unit"**

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one channel.

6-6-4. Calculation Formula Settings "Formula"

- The settings for the calculation formula are displayed in the table format to enable you to edit them.
- The columns of the table present the calculation formulas, and the rows present the calculation formula numbers.
- You can use a registered calculation formula by selecting it in [Calculation Type] in the [Calculation] settings.
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the calculation formula settings.

[Calculation Formula Settings "Formula" Parameter List]

Setting parameter	Function	Remarks
Calculation Formula "Formula"	Specify the calculation formula to be used when you set [Calculation Formula] in the [Calculation] settings, using 50 characters (one byte) at a maximum Up to 12 formulas can be registered, common to all channels	Available characters (one byte): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789+-*/%^().,<>=!# (refer to section 6-1-2)

2. Copy and paste operations for calculation formula setting

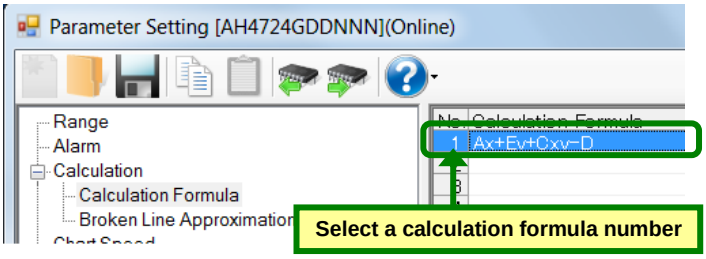
For the calculation formula setting, you can copy and paste parameters per calculation formula (parameters belonging to one calculation formula number).

<How to copy/paste>

(1) Select the copy source

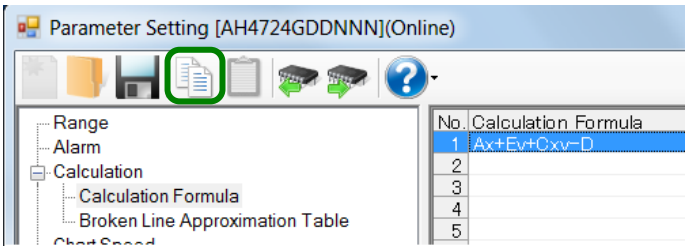
Click to select a calculation formula number to copy from.

* You can copy parameters per one calculation formula number. That means, you cannot select multiple calculation formula numbers to copy the parameters at a time.



(2) Click the [Copy] button

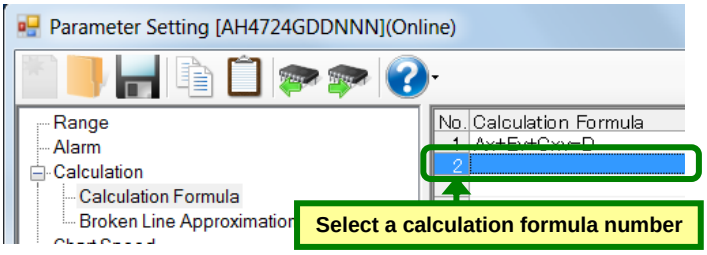
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

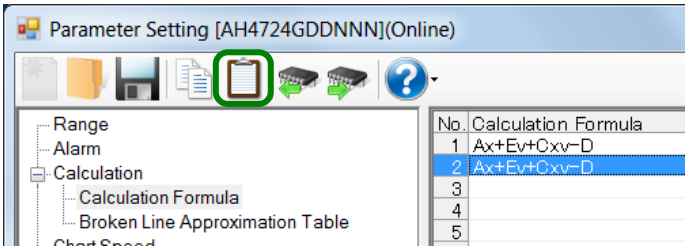
Click to select a calculation formula number to paste to.

* You can paste the parameters to one calculation formula number. That means, you cannot select multiple calculation formula numbers to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

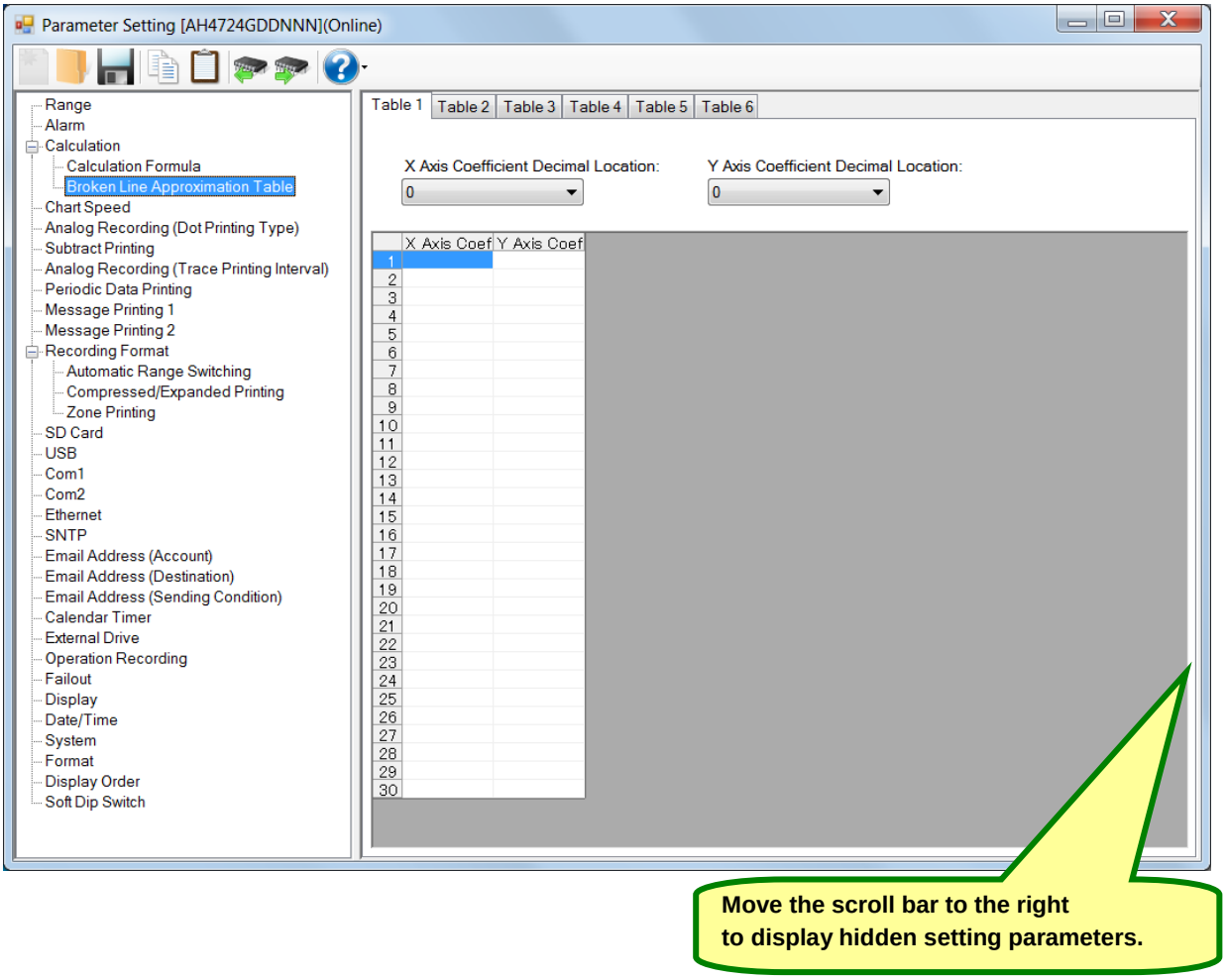


Remarks "Keeping copied data" and "Copy/paste unit"

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one calculation formula number.

6-6-5. Broken Line Approximation Table Settings "Seg.Tbl"

- The settings for the broken line approximation table are displayed in the [Tables 1] to [Table 6] tabs to enable you to edit them.
- The columns of the table present the coefficient types, and the rows present the coefficient numbers. Specify the decimal location of each coefficient above the table.
- You can set 6 tables and 30 broken lines at a maximum per table. For each channel with [Broken Line Approximation] selected in [Calculation Type], select a table to use from these 6 tables.
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the broken line approximation table settings.

[Broken Line Approximation Table Settings "Seg.Tbl" Parameter List]

Setting parameter	Function	Remarks
X Axis Coefficient Decimal Location "X.Dot"	Specify the X axis coefficient decimal location Software screen: 0 to 3 / Instrument screen: 0 to 3	It can be set to three places of decimals. Example: -30.000
Y Axis Coefficient Decimal Location "Y.Dot"	Specify the Y axis coefficient decimal location Software screen: 0 to 3 / Instrument screen: 0 to 3	It can be set to three places of decimals. Example: -30.000
X Axis Coefficient "X-01 to X-30"	Specify X1 - X30 in the broken line approximation table Software screen: Disabled / -30000 to 99999 Instrument screen: - / -30000 to 99999	When online, an overflow value is displayed as "#######"
Y Axis Coefficient "Y-01 to Y-30"	Specify Y1 - Y30 in the broken line approximation table Software screen: Disabled / -30000 to 99999 Instrument screen: - / -30000 to 99999	

2. Copy and paste operations for broken line approximation table setting

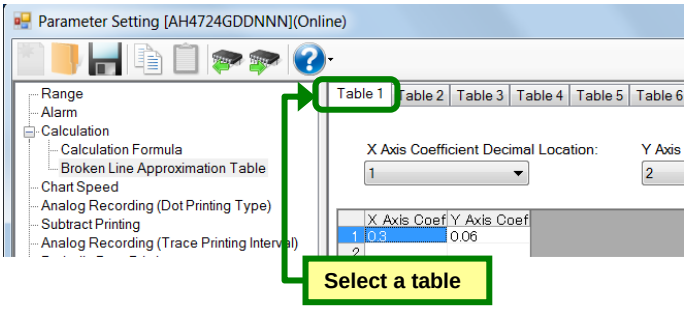
For the broken line approximation table setting, you can copy and paste parameters per table (parameters belonging to one table).

<How to copy/paste>

(1) Select the copy source

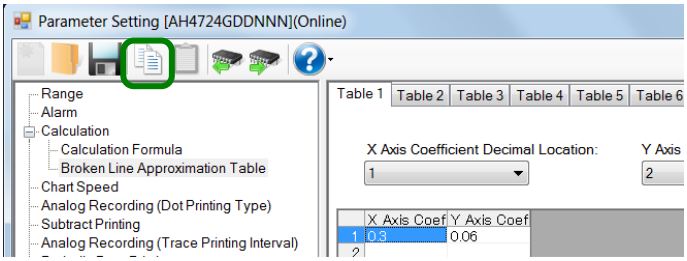
Click to select a table to copy from.

* You can copy parameters per one table. That means, you cannot select multiple tables to copy the parameters at a time.



(2) Click the [Copy] button

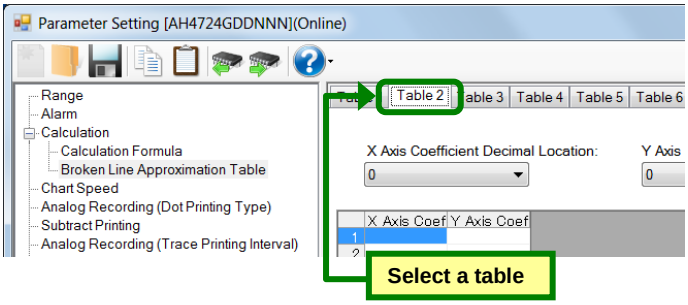
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

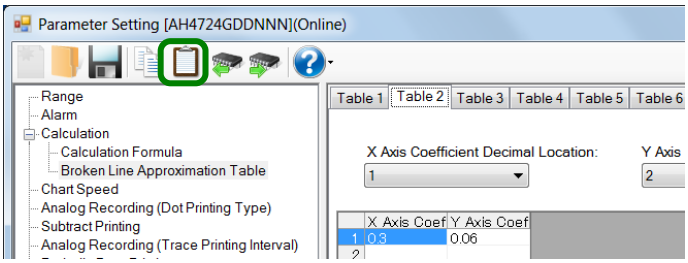
Click to select a table to paste to.

* You can paste the parameters to one table. That means, you cannot select multiple tables to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

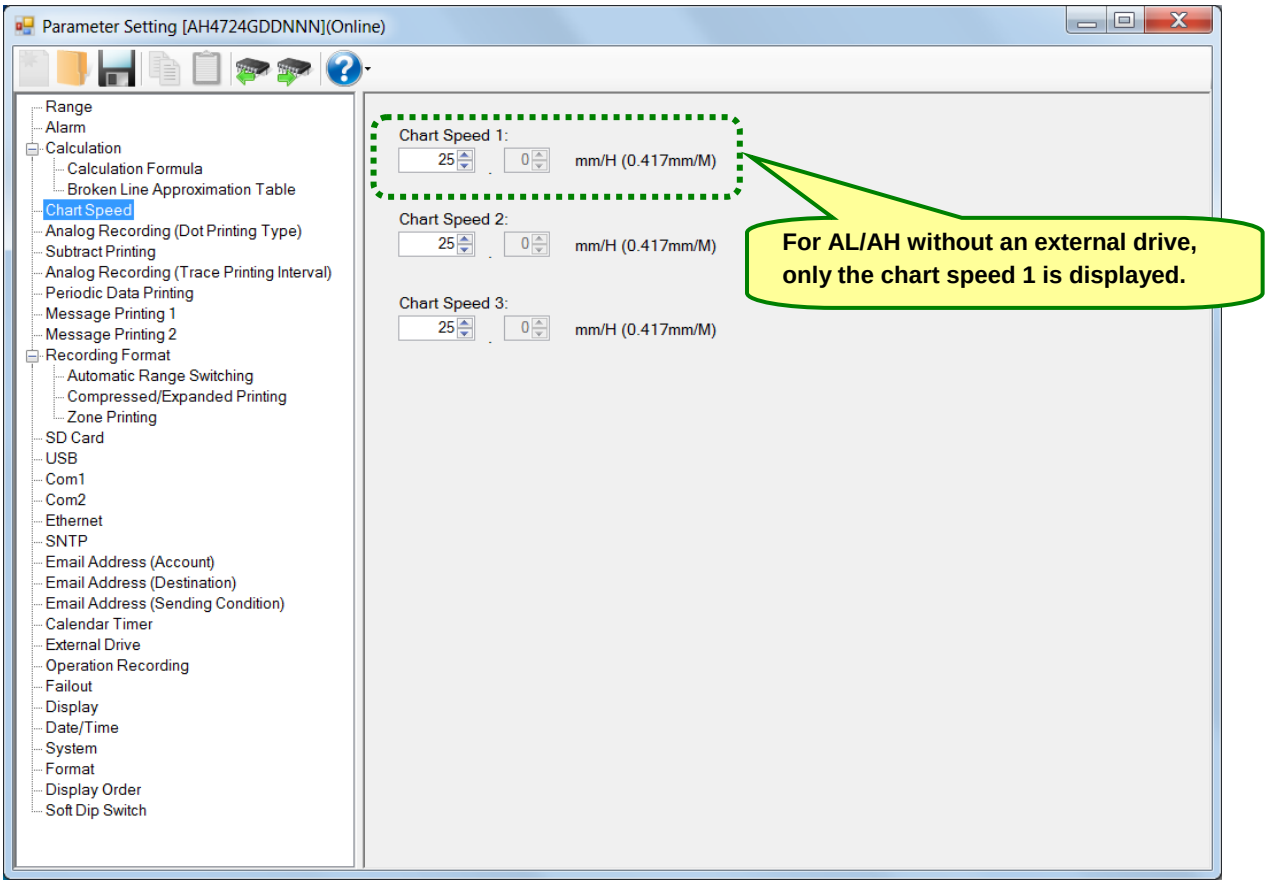


Remarks "Keeping copied data" and "Copy/paste unit"

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one table.

6-6-6. Chart Speed Settings "Chart"

- The chart speed settings are displayed to enable you to edit them.
- The chart speed 1 to 3 are displayed. The left and right numbers present the integer and fraction parts respectively. The setting unit is mm/H. The value converted to mm/M is displayed in parentheses next to the chart speed display unit (mm/H).
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings. For AL4000/AH4000 without an external drive, you can set the value of the chart speed 1 only.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

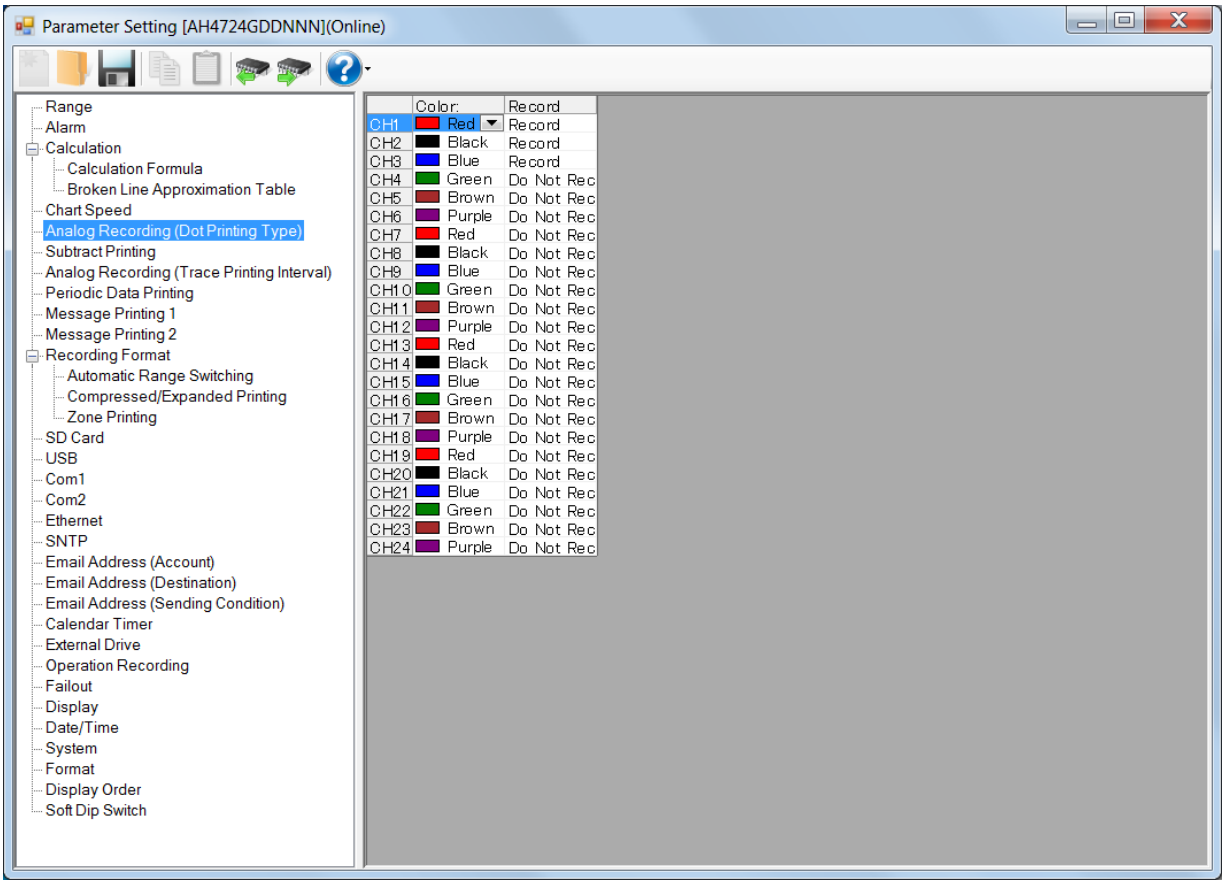
You can configure the following parameters in the chart speed settings.

[Chart Speed Settings "Chart" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Chart Speed 1
"ChartSpeed1"</td><td>Configure the chart speed 1
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1 to 1500</td><td>1 to 1500</td></tr><tr><td>12.5 *</td><td>12.5 *</td></tr></table></td><td rowspan="3">* You can set 0 (12.0mm/H) or 5 (12.5mm/H) for the right fraction part when the left integer part is 12.</td></tr>
<tr><td>Chart Speed 2
"ChartSpeed2"</td><td>Configure the chart speed 2
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1 to 1500</td><td>1 to 1500</td></tr><tr><td>12.5 *</td><td>12.5 *</td></tr></table></td></tr>
<tr><td>Chart Speed 3
"ChartSpeed3"</td><td>Configure the chart speed 3
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1 to 1500</td><td>1 to 1500</td></tr><tr><td>12.5 *</td><td>12.5 *</td></tr></table></td></tr>
</table>

6-6-7. Analog Recording (Dot Printing Type) Settings "Dot"

- The analog recording (dot printing type) settings for the input channels are displayed in the table format to enable you to edit them.
- The columns of the table present the setting parameter types, and the rows present the channel numbers.
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
- The number of the displayed channels varies depending on the instrument model.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the chart speed settings.

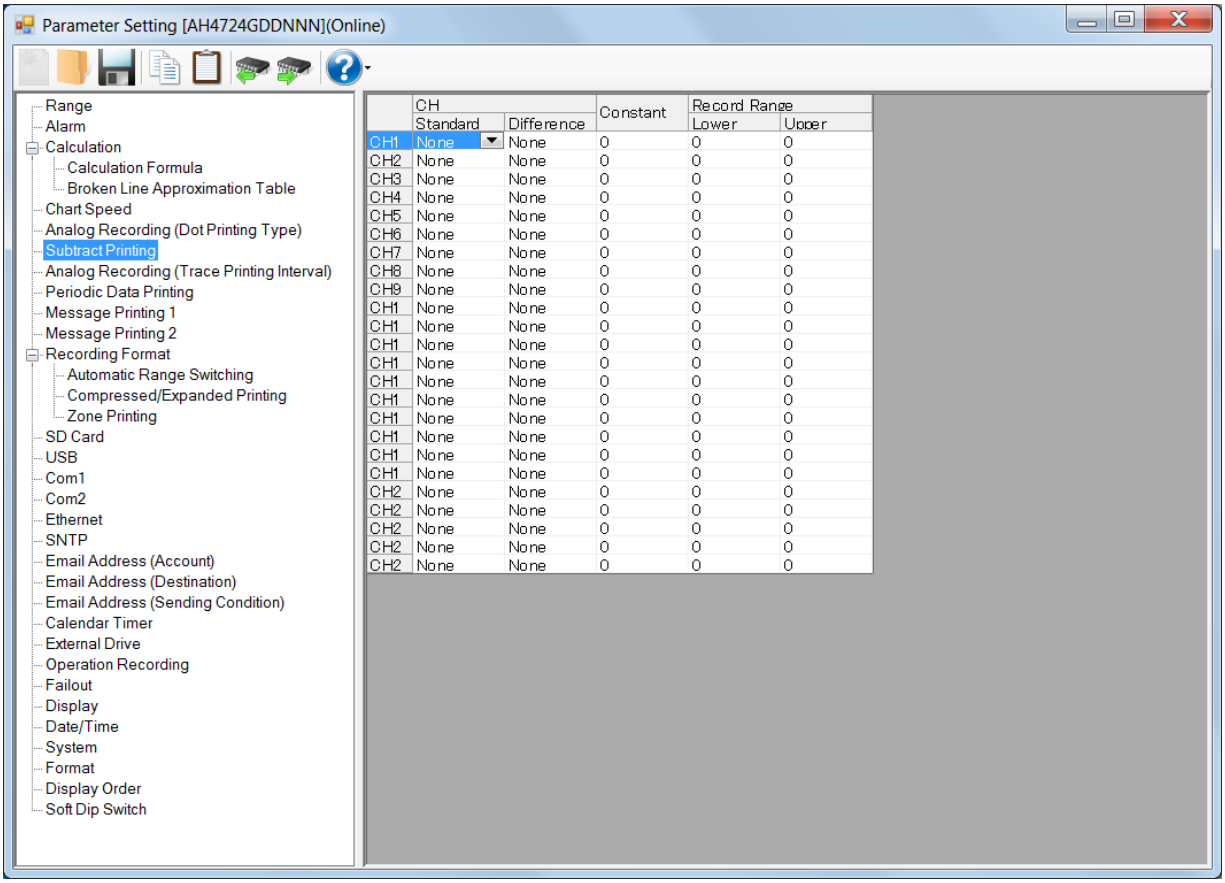
[Analog Recording (MultiPoint Type) Settings "Dot" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Color
"Color"</td><td>Select the chart color
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Red</td><td>Red</td></tr>
<tr><td>Black</td><td>Black</td></tr>
<tr><td>Blue</td><td>Blue</td></tr>
<tr><td>Green</td><td>Green</td></tr>
<tr><td>Brown</td><td>Brown</td></tr>
<tr><td>Purple</td><td>Purple</td></tr>
</table></td><td></td></tr>
<tr><td>Record
"Rec"</td><td>Specify whether the analog recording is turned on or off
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Record</td><td>ON</td></tr>
<tr><td>Do Not Record</td><td>OFF</td></tr>
</table></td><td></td></tr>
</table>

6-6-8. Subtract Printing Settings "Sub Prt"

- The subtract printing settings for the input channels are displayed in the table format to enable you to edit them.
- The columns of the table present the setting parameter types, and the rows present the channel numbers.
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
- The number of the displayed channels varies depending on the instrument model.

  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the subtract printing settings.

[Subtract Printing Settings "Sub Prt" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>"Kind"</td><td>Specify the kind of subtract printing
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Set the standard CH to [None]</td><td>None</td></tr><tr><td>Set the standard CH and difference CH to other than [None]</td><td>CH.X - CH.Y</td></tr><tr><td>Set the difference CH to [None]</td><td>CH.X - Const</td></tr></table></td><td>There is no option on the software side corresponding to "Kind".
The kind of the subtract printing ("Kind") is determined by setting these parameters.</td></tr>
<tr><td>Standard CH "CH.X"</td><td>Specify the measurement CH to be subtracted from
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 24</td><td>1 to 24</td></tr></table></td><td>The number of the displayed channels varies depending on the instrument model.</td></tr>
<tr><td>Difference CH "CH.Y"</td><td>Specify the measurement CH to subtract
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 24</td><td>1 to 24</td></tr></table></td><td>The number of the displayed channels varies depending on the instrument model.</td></tr>
<tr><td>Constant "Const"</td><td>Specify the reference value to be subtracted from CH.X</td><td rowspan="3">-30000 to 99999
The decimal location changes according to the one of the scale
When the standard CH is set to [None], the decimal location is 0
When online, an overflow value is displayed as "#######"</td></tr>
<tr><td>Record Range Lower Limit "Sub.REC-L"</td><td>Specify the lower limit of the subtract record range when recording the chart</td></tr>
<tr><td>Record Range Upper Limit "Sub.REC-H"</td><td>Specify the upper limit of the subtract record range when recording the chart</td></tr>
</table>

2. Copy and paste operations for subtract printing setting

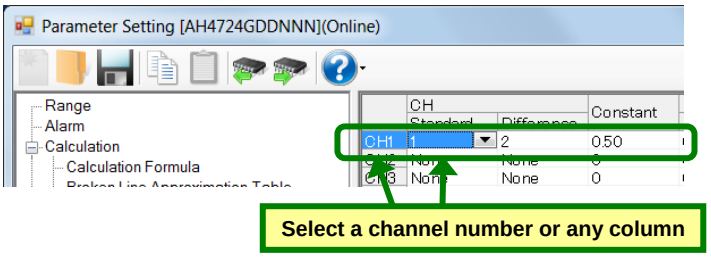
For the subtract printing setting, you can copy and paste parameters per channel (parameters belonging to one channel).

<How to copy/paste>

(1) Select the copy source

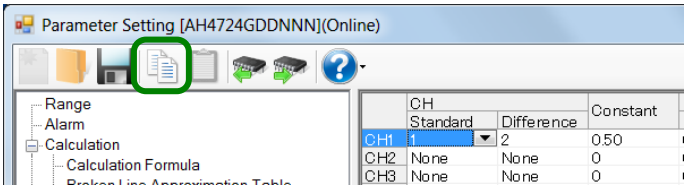
Click to select a channel number or any column to copy from.

* You can copy parameters per one channel. That means, you cannot select multiple channels to copy the parameters at a time.



(2) Click the [Copy] button

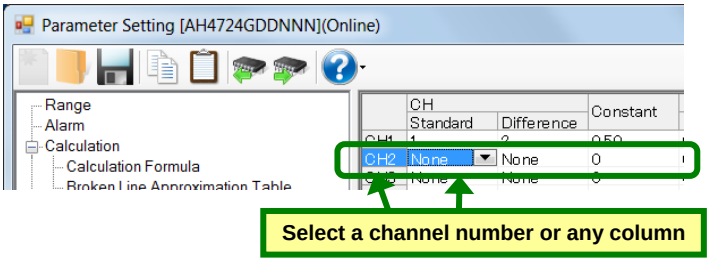
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

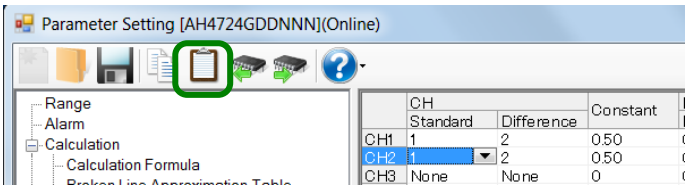
Click to select a channel number or any column to paste to.

* You can paste the parameters to one channel. That means, you cannot select multiple channels to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

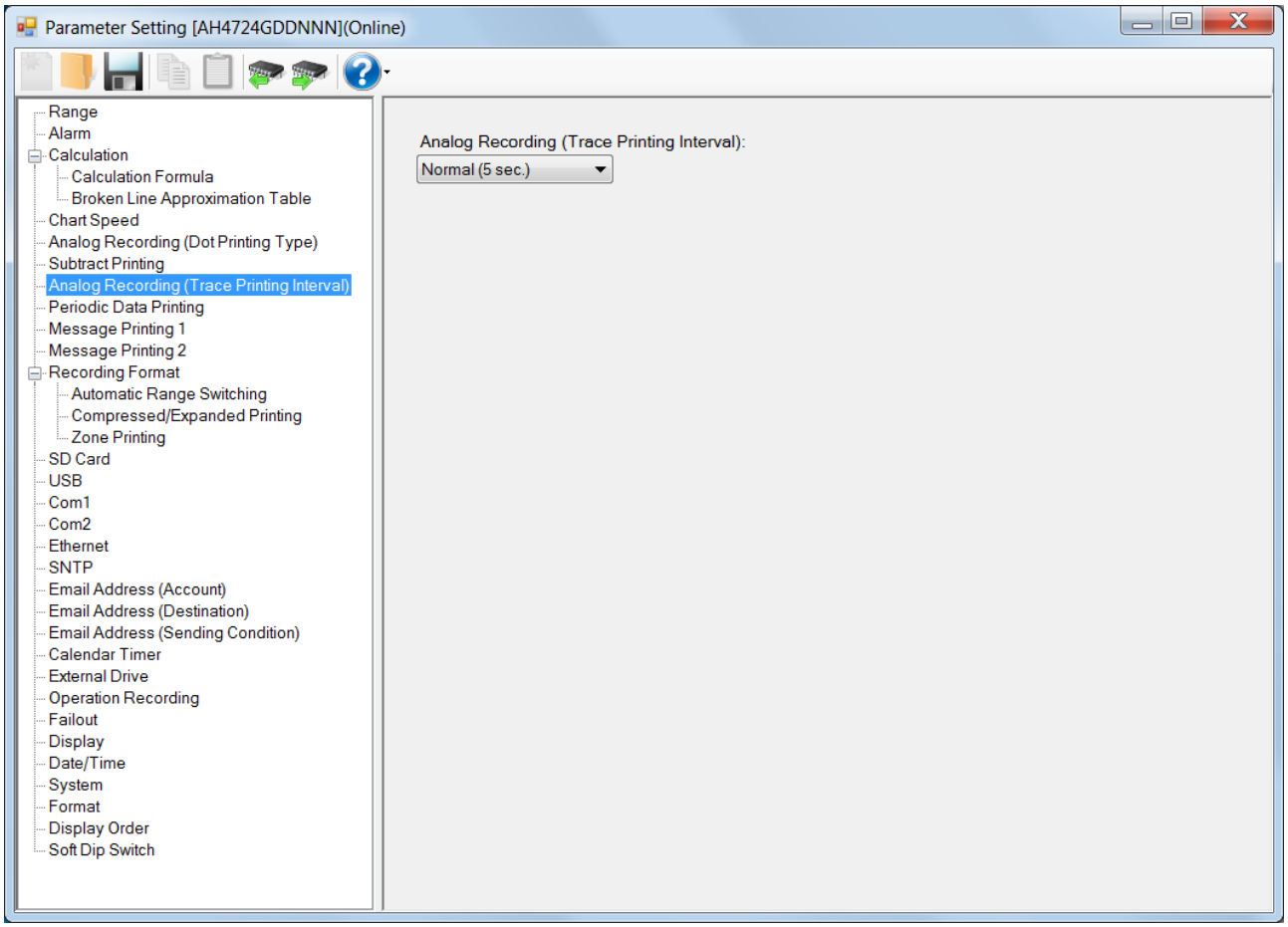


Remarks "Keeping copied data" and "Copy/paste unit"

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one channel.

6-6-9. Analog Recording (Trace Printing Interval) Settings "Dot.Int"

- The settings for the analog recording (trace printing interval) are displayed to enable you to edit them.
- For AL4000/AH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

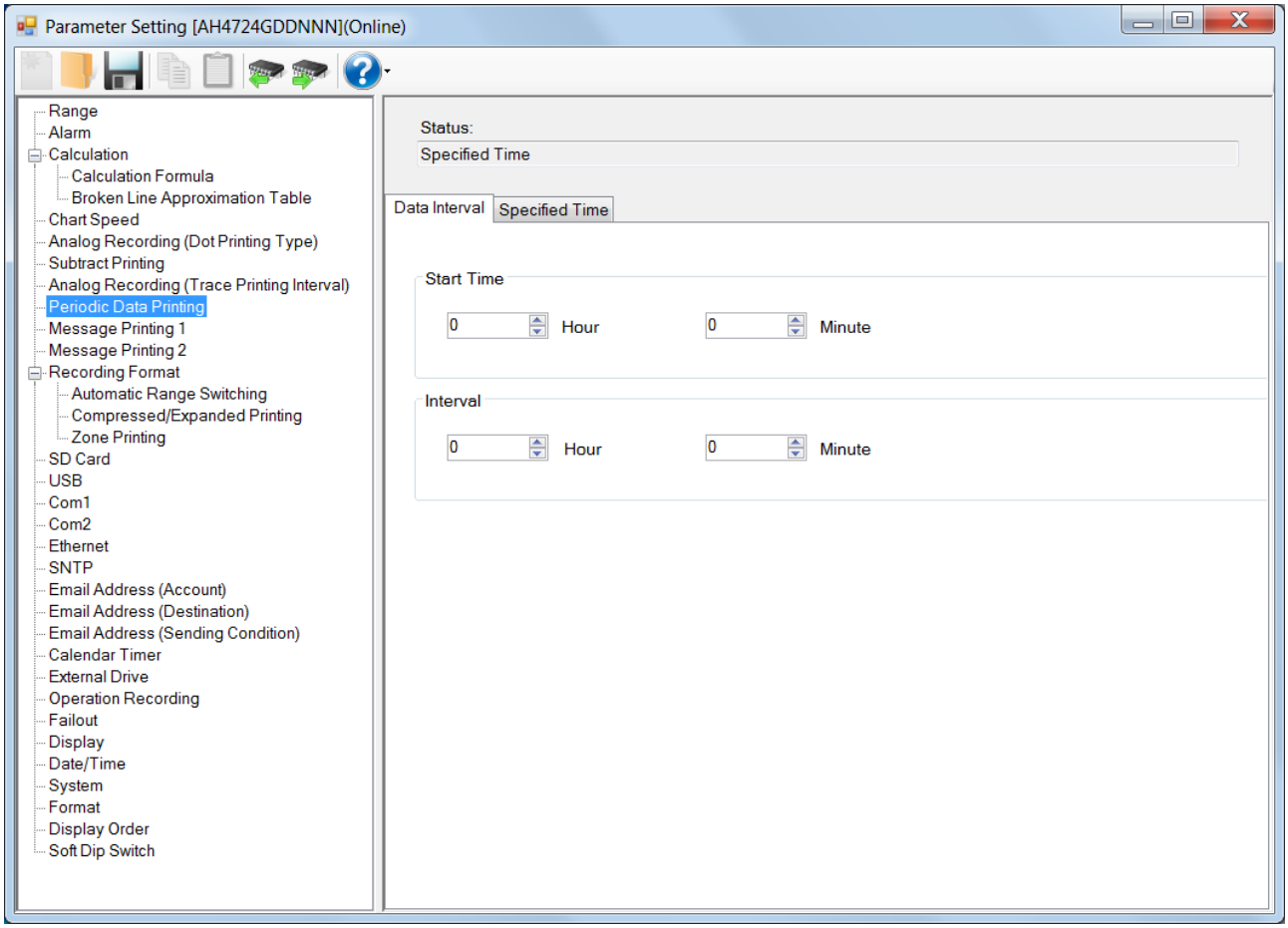
You can configure the following parameters in the analog recording (trace printing interval) settings.

[Analog Recording (Trace Printing Interval) Settings "Dot.Int" Parameter List]

Setting parameter	Function	Remarks
Analog Recording (Trace Printing Interval) "Dot-Interval"	Specify the trace printing interval Software screen / Instrument screen Normal (5 sec.) / Normal Quick (2.5 sec.) / Fast Chart Synchronization / Synchro	

6-6-10. Periodic (Data Interval) Data Printing Settings "DataInt"

- The settings for the periodic data printing are displayed in the [Data Interval] and [Specified Time] tabs to enable you to edit them.
- In the [Data Interval] tab, the start time and the interval are displayed. The left field presents the hour (time) and the hours (interval), and the right one presents the minute (time) and the minutes (interval). In [Status] above the tabs, the setting status (interval) is displayed.
- If you set 0 hours and 1 minute or longer in [Interval], the interval printing is enabled ("Interval" is displayed in [Status]).
- You can specify per channel whether the measured data is printed or not by switching [Record] and [Do Not Record] in [Digital Recording/Printing] for the range settings (refer to section 6-6-1).
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the periodic (data interval) data printing settings.

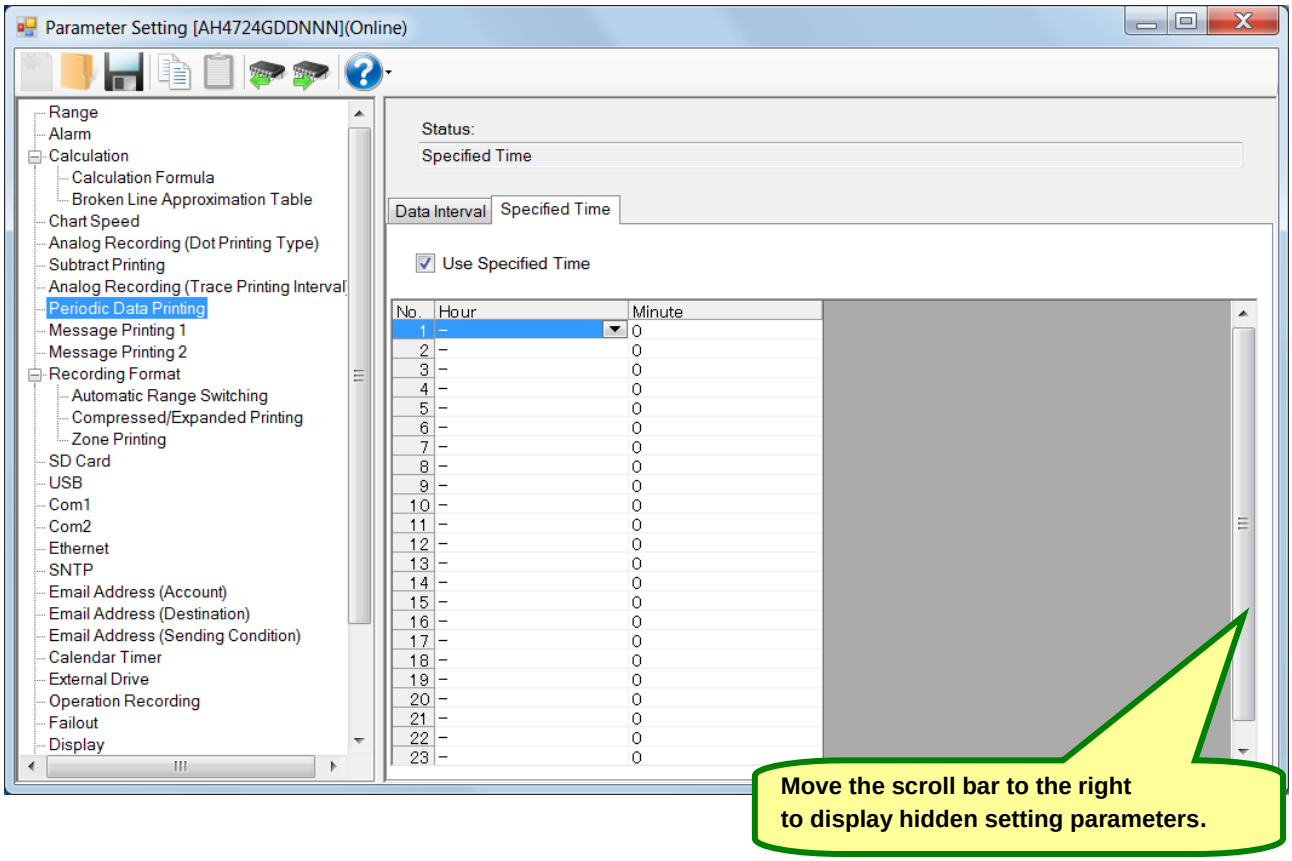
[Periodic (Data Interval) Data Printing Settings "DataInt" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Start Time
"StartTime"</td><td>Specify the start time of the periodic data printing
(If you specify the time earlier than the current time, the start time is set to the same time on the next day)
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 23 hour</td><td>00 to 23 Hour</td></tr><tr><td>0 to 59 minute</td><td>00 to 59 Min</td></tr></table></td><td></td></tr>
<tr><td>Interval
"Interval"</td><td>Specify the interval (hours and minutes) to print the measurement value as a numerical number
(The maximum value is 24 hours and 1 minute step)
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 24 hours</td><td>00 to 24 Hour</td></tr><tr><td>0 to 59 minutes</td><td>00 to 59 Min</td></tr></table></td><td>When the interval is 0 hours and 0 minutes, "None" is displayed in [Status]. When it is another value, "Interval" is displayed in [Status].</td></tr>
</table>

* When you want to use an interval in the periodic data printing, set the interval to 0 hours and 1 minute or longer. When you want to use the specified time in the periodic data printing, reset the interval to 0 hours and 0 minutes.

6-6-11. Periodic (Specified Time) Data Printing Settings "PrtTime"

- The settings for the periodic data printing are displayed in the [Data Interval] and [Specified Time] tabs to enable you to edit them.
- In the [Specified Time] tab, the columns of the table present the setting parameter types and the rows present the specified time numbers. In [Status] above the tabs, the setting status (specified time) is displayed.
- When you set the interval to 0 hours and 0 minutes in [Data Interval] (refer to section 6-6-10) and select the [Use Specified Time] check box ☑,the specified time printing is enabled ("Specified Time" is displayed in [Status:]). You can register 24 specified times at a maximum.
- You can specify per channel whether the measured data is printed or not by switching [Record] and [Do Not Record] in [Digital Recording/Printing] for the range settings (refer to section 6-6-1).
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the periodic (specified time) data printing settings.

[Periodic (Specified Time) Data Printing Settings "PrtTime" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Specified Time
"PrintTime"</td><td>Specify whether the specified time recording is turned on or off
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Switch ON and OFF using the check box</td><td>Switch ON and Off using the F1 key</td></tr></table>
Specify the interval (hours and minutes) to print the measurement value as a numerical number
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 23* hour</td><td>00 to 23* Hour</td></tr><tr><td>0 to 59 minute</td><td>00 to 59 Min</td></tr></table>* "-" (not use) can be set for the hour.</td><td>When you set the interval to 0 hours and 0 minutes and you use the specified time, "Specified Time" is displayed in [Status].</td></tr>
</table>

* Even if you set the interval to a value other than 0 hours and 0 minutes in [Data Interval], you can enter the specified time. Note that, when you want to use the specified time in [Periodic Data Printing], be sure to set the interval to 0 hours and 0 minutes and select the [Use Specified Time] ☑ check box.

2. Copy and paste operations for periodic (specified time) data printing setting

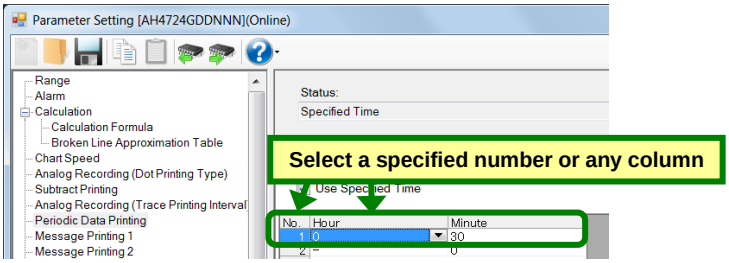
For the periodic (specified time) settings, you can copy and paste parameters per specified time number (parameters belonging to one specified time number).

<How to copy/paste>

(1) Select the copy source

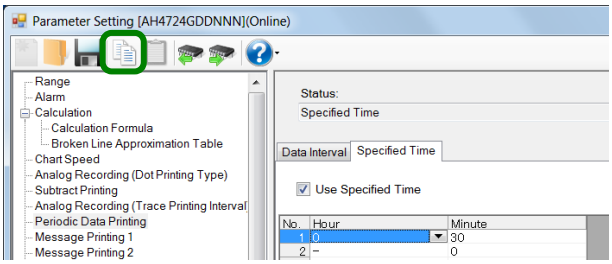
Click to select a specific time number or any column to copy from.

* You can copy parameters per one specified time number. That means, you cannot select multiple specified time numbers to copy the parameters at a time.



(2) Click the [Copy] button

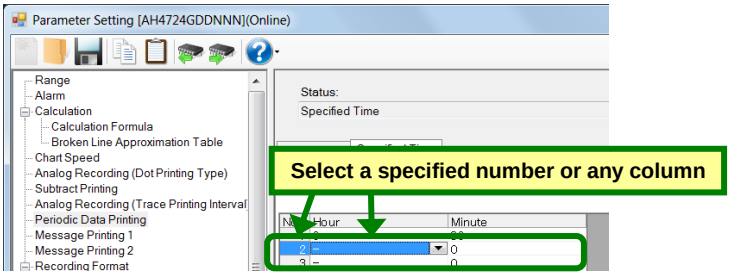
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

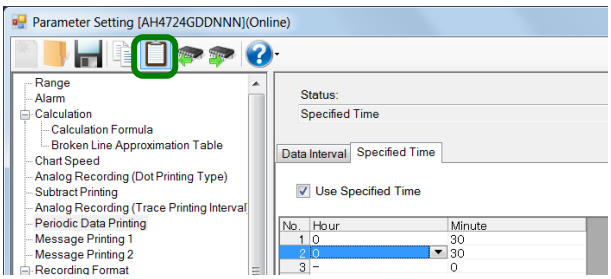
Click to select a specified time number or any column to paste to.

* You can paste the parameters to one specified time number. That means, you cannot select multiple specified time numbers to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

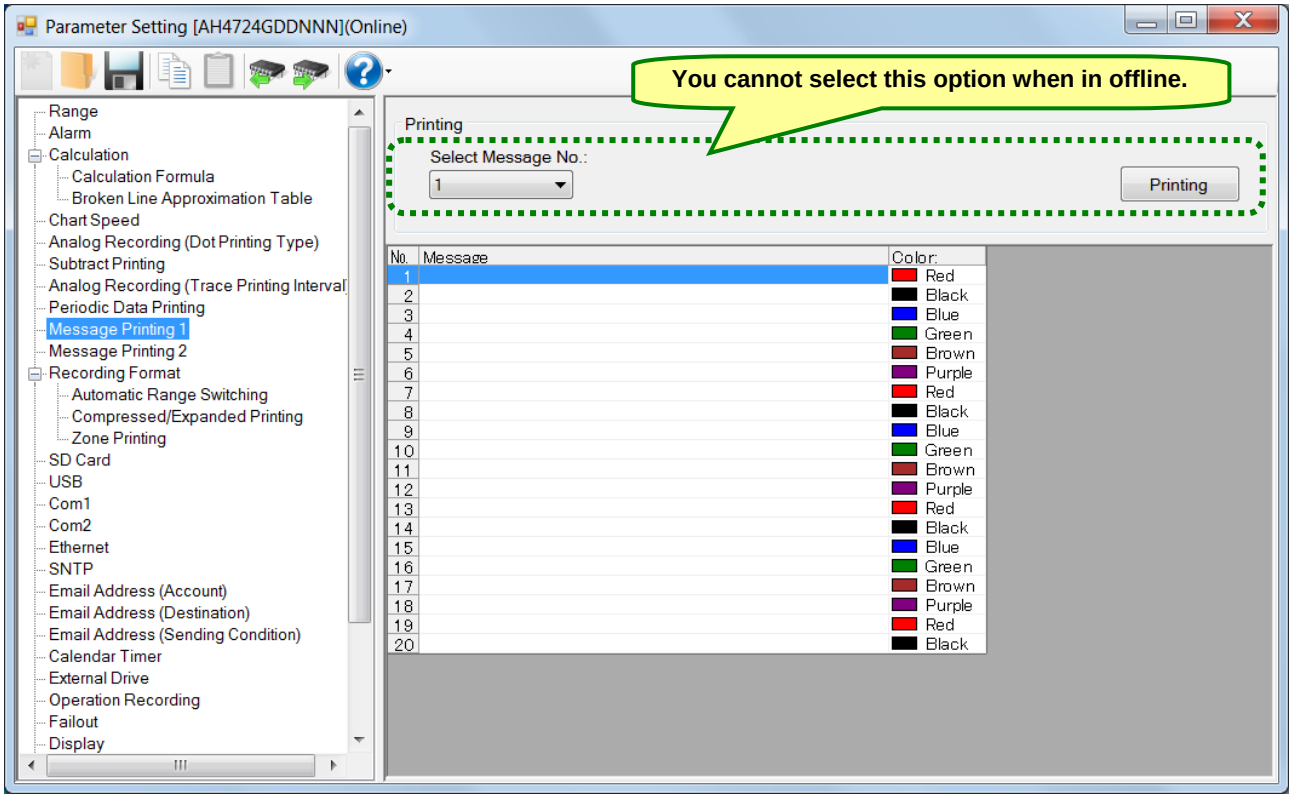


Remarks **"Keeping copied data" and "Copy/paste unit"**

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one specified time number.

6-6-12. Message Printing 1 Settings "MsgPrt1"

- The settings for the message printing 1 are displayed in the table format to enable you to edit them.
- The columns of the table present the setting parameter types, and the rows present the message numbers. When you connect to the instrument and in online, you can specify any number in [Select Message No.] above the table to print a message in the connected instrument.
- For example, you can work with the settings of the calendar timer (refer to section 6-6-27) or the external drive (refer to section 6-6-28) to print a registered message.
- When you select [Online] in the Parameter Setting Menu screen, you can send a message selected by the message No. to the instrument to print it. When you select [Offline], you cannot print a message.
- For AL4000/AH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the message printing 1 settings.

[Message Printing 1 Settings "MsgPrt1" Parameter List]

Setting parameter	Function	Remarks
Message "Message"	Set the number of characters to be printed using up to 15 characters You can register 20 messages at a maximum	Available characters (one byte): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789+-*/%^()._:;<>=![]¥ (refer to section 6-1-2)
Color "Color"	Select the message print color Software screen / Instrument screen Red / Red Black / Black Blue / Blue Green / Green Brown / Brown Purple / Purple	

2. Copy and paste operations for message printing 1 setting

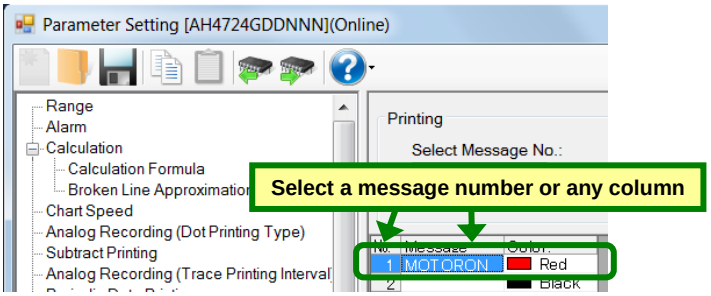
For the message printing 1 settings, you can copy and paste parameters per message number (parameters belonging to one message number).

<How to copy/paste>

(1) Select the copy source

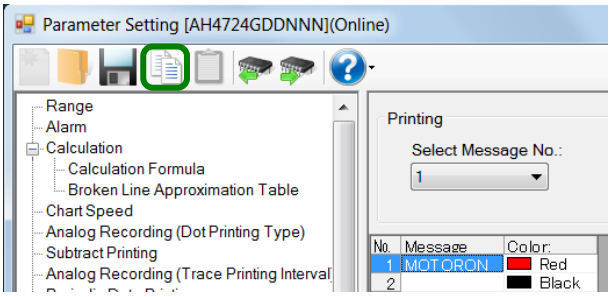
Click to select a specific time number or any column to copy from.

* You can copy parameters per one message number. That means, you cannot select multiple message numbers to copy the parameters at a time.



(2) Click the [Copy] button

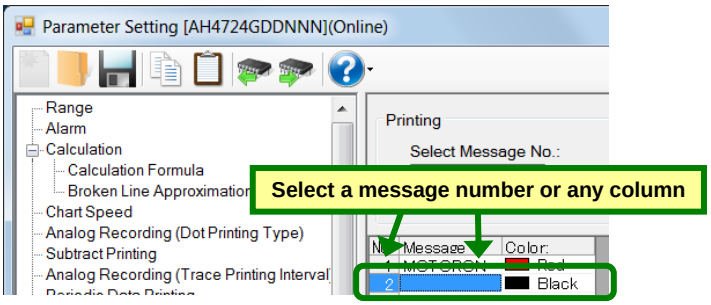
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

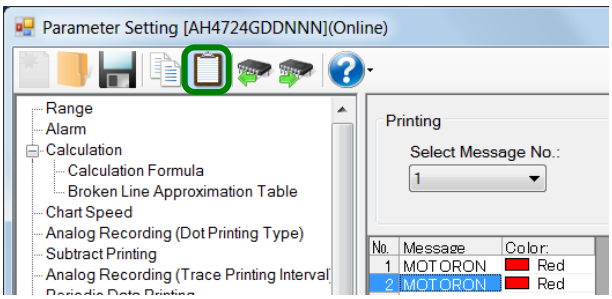
Click to select a message number or any column to paste to.

* You can paste the parameters to one message number. That means, you cannot select multiple message numbers to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

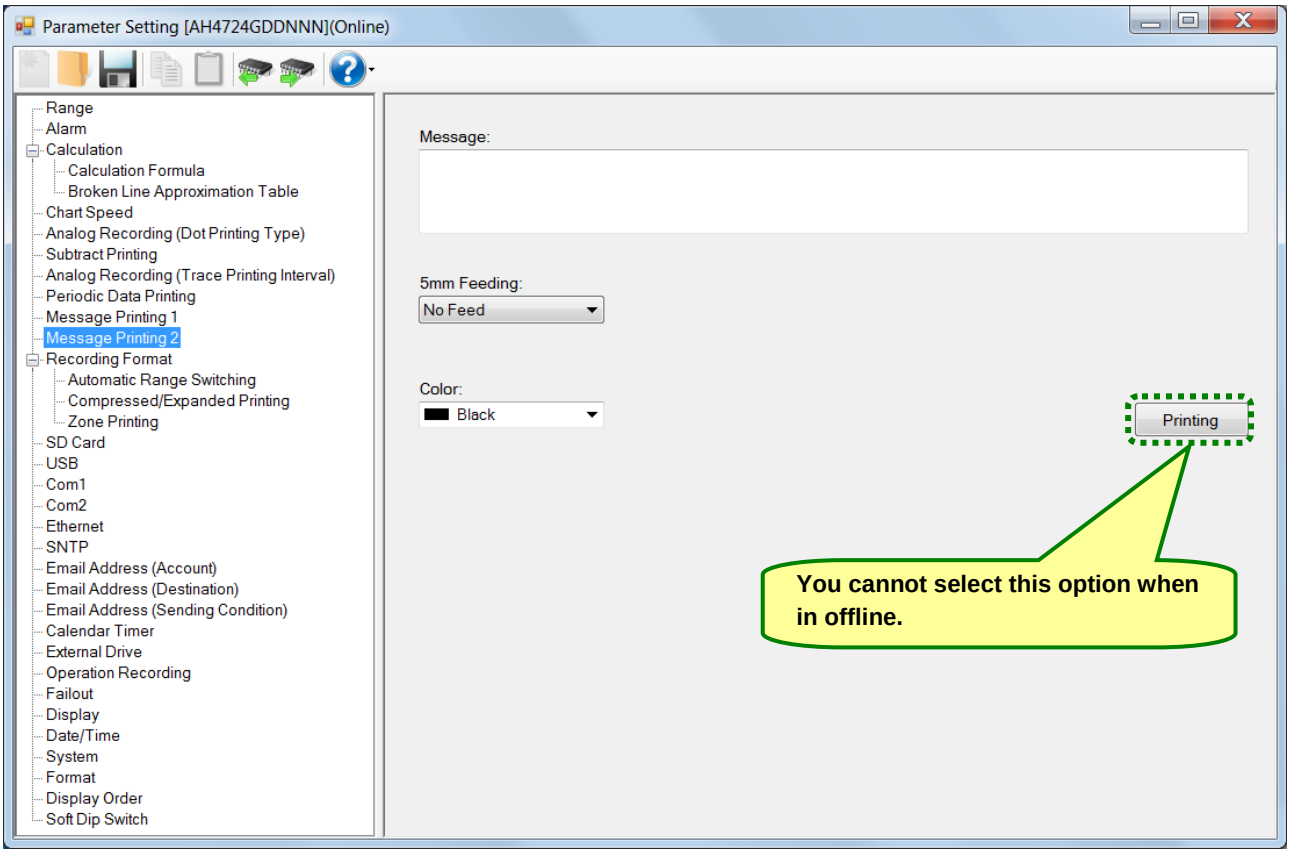


Remarks **"Keeping copied data" and "Copy/paste unit"**

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one message number.

6-6-13. Message Printing 2 Settings "MsgPrt2"

- The message printing 2 settings are displayed to enable you to edit them.
- When you select [Online] in the Parameter Setting Menu screen, you can send an input message to the instrument to print it. When you select [Offline], you cannot print a message.
- For AL4000/AH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

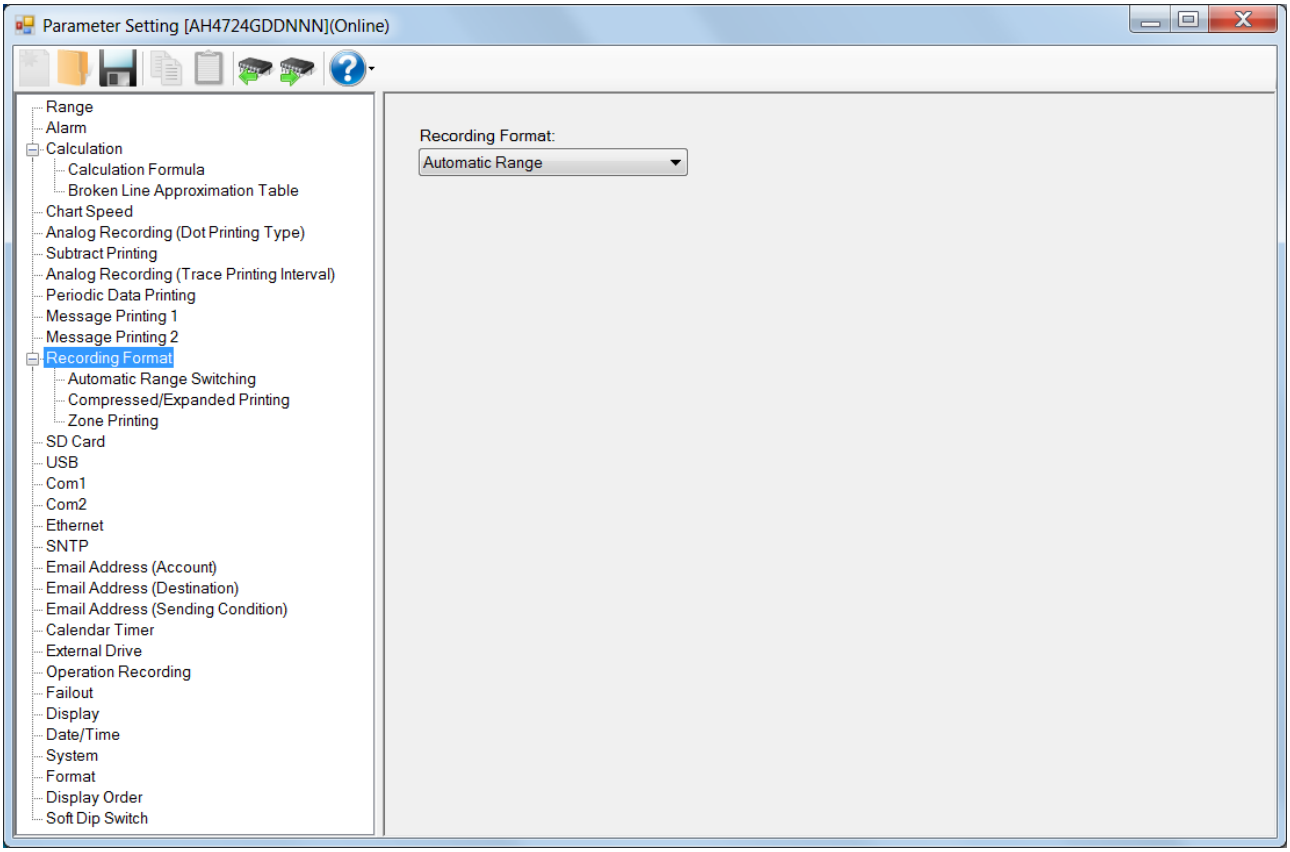
You can configure the following parameters in the message printing 2 settings.

[Message Printing 2 Settings "MsgPrt2" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Message
"Message"</td><td><u>For AL4000 or KL4000</u>
Set the number of characters to be printed using up to 40 characters
<u>For AH4000 or KH4000</u>
Set the number of characters to be printed using up to 72 characters</td><td>Available characters (one byte):
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789+-*/%^().,_:;<>=![]¥
(refer to section 6-1-2)</td></tr>
<tr><td>5mm Feeding
"5mm Feed"</td><td>Select the feeding before printing a message
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>No Feed</td><td>No</td></tr>
<tr><td>Feed</td><td>Yes</td></tr>
</table></td><td></td></tr>
<tr><td>Color
"Color"</td><td>Select the message print color
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Red</td><td>Red</td></tr>
<tr><td>Black</td><td>Black</td></tr>
<tr><td>Blue</td><td>Blue</td></tr>
<tr><td>Green</td><td>Green</td></tr>
<tr><td>Brown</td><td>Brown</td></tr>
<tr><td>Purple</td><td>Purple</td></tr>
</table></td><td></td></tr>
</table>

6-6-14. Recording Format Settings "PrtForm"

- The recording format settings are displayed to enable you to edit them.
- When you select [Automatic Range] or [Automatic Range (Overlap)] in [Recording Format], the automatic range switching (printing) settings (refer to section 6-6-15) is required. When you select [Compressed/Expanded Printing] and [Zone Printing], the compressed/expanded printing settings (refer to section 6-6-16) and zone printing settings (refer to section 6-6-17) are required, respectively.
- For AL4000/AH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the recording format settings.

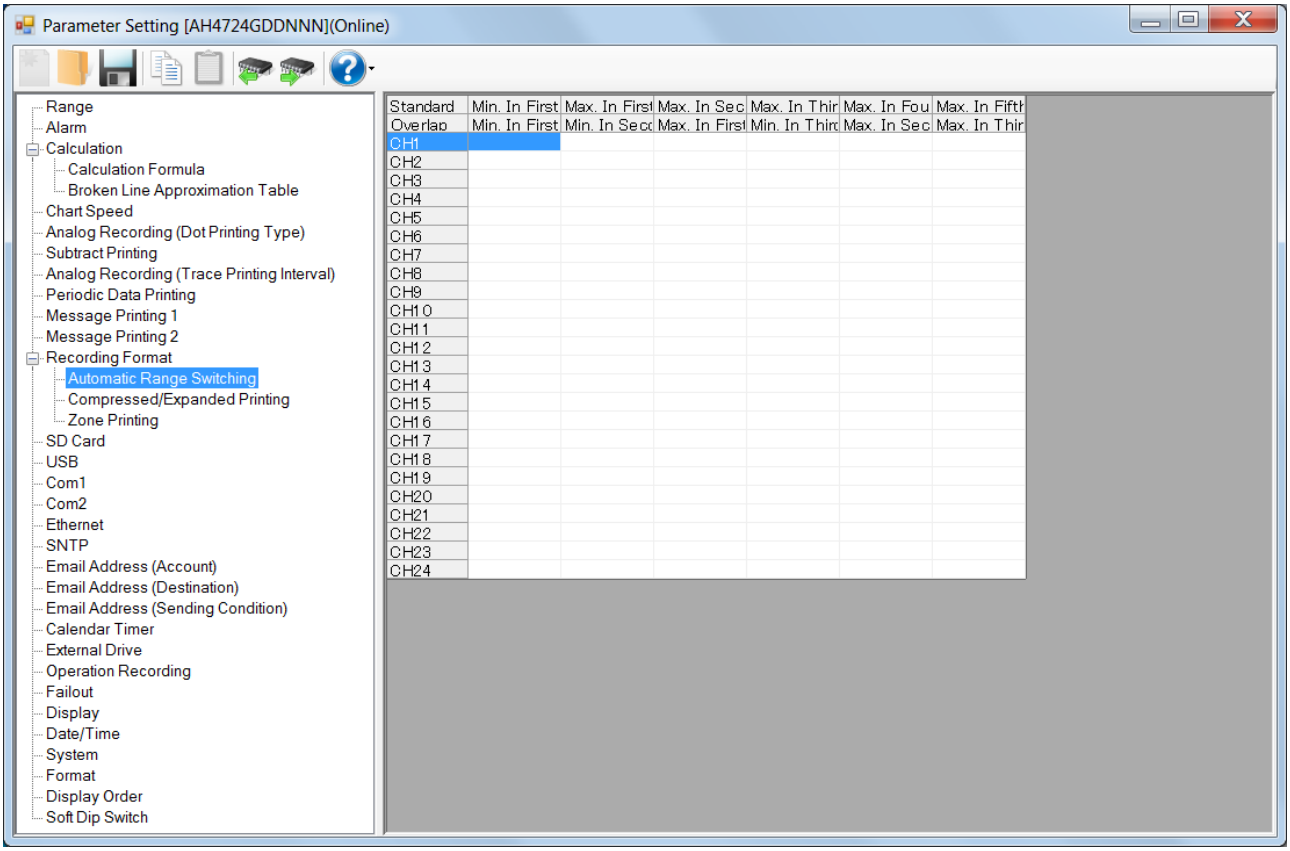
[Recording Format Settings "PrtForm" Parameter List]

Setting parameter	Function	Remarks
Recording Format "Printing Format"	Select the recording format	

Software screen	Instrument screen
Standard	Standard
Automatic Range	Auto Range Normal
Compressed/Expanded Printing	Comp.&Exp.Print
Zone Printing	Zone Print
Automatic Range (Overlap)	Auto Range Overlap

6-6-15. Automatic Range Switching (Printing) Settings "A.Range"

- The automatic range switching (printing) settings are displayed in the table format to enable you to edit them.
- The columns of the table present the setting parameter types, and the rows present the automatic range switching types (Standard and Overlap) and channel numbers.
- There are two types, "automatic range (standard)" where the minimum-to-maximum ranges do not overlap, and "automatic range (overlap) where they overlap.
- For AL4000/AH4000, you can edit these settings.
- The number of the displayed channels vary depending on the instrument model.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the automatic range switching (printing) settings.

[Automatic Range Switching (Printing) Settings "A.Range" Parameter List]

Setting parameter	Function	Remarks
"Auto Range ON/OFF"	Enable or disable the auto range settings Software screen: Use the following maximum and minimum range settings Instrument screen: ON / OFF	Switch ON (enter a value) or OFF (none) using the minimum and maximum setting parameters for each range.
Min. In First Range "1st Min"	Set the minimum value of the first range	-30000 to 99999 The decimal location changes according to the one of the scale When online, an overflow value is displayed as "#######"
Max. In First Range "1st Max"	Set the maximum value of the first range	
Max. In Second Range "2nd Max"	Set the maximum value of the second range	
Max. In Third Range "3rd Max"	Set the maximum value of the third range	
Max. In Fourth Range "4th Max"	Set the maximum value of the forth range	
Max. In Fifth Range "5th Max"	Set the maximum value of the fifth range	

2. Copy and paste operations for automatic range switching (printing) setting

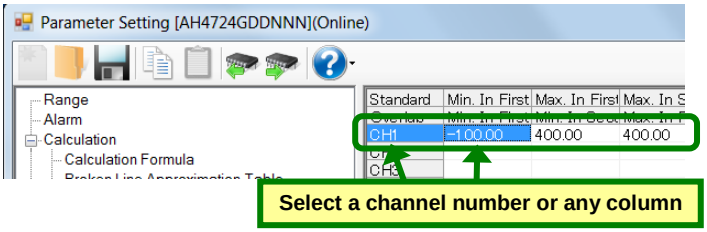
For the automatic range switching (printing) setting, you can copy and paste parameters per one channel number (parameters belonging to one channel number).

<How to copy/paste>

(1) Select the copy source

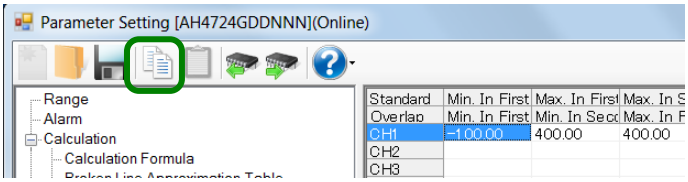
Click to select a channel number or any column to copy from.

* You can copy parameters per one channel number. That means, you cannot select multiple channel numbers to copy the parameters at a time.



(2) Click the [Copy] button

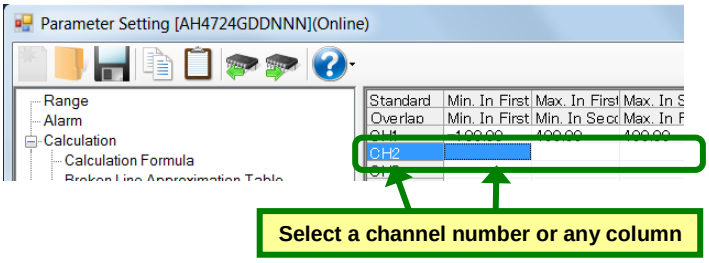
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

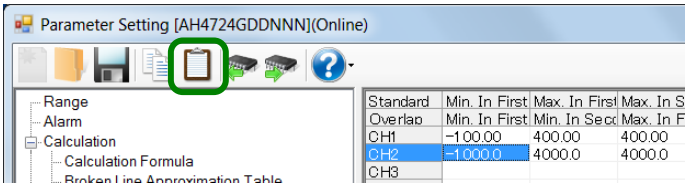
Click to select a channel number or any column to paste to.

* You can paste the parameters to one channel number. That means, you cannot select multiple channel numbers to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.



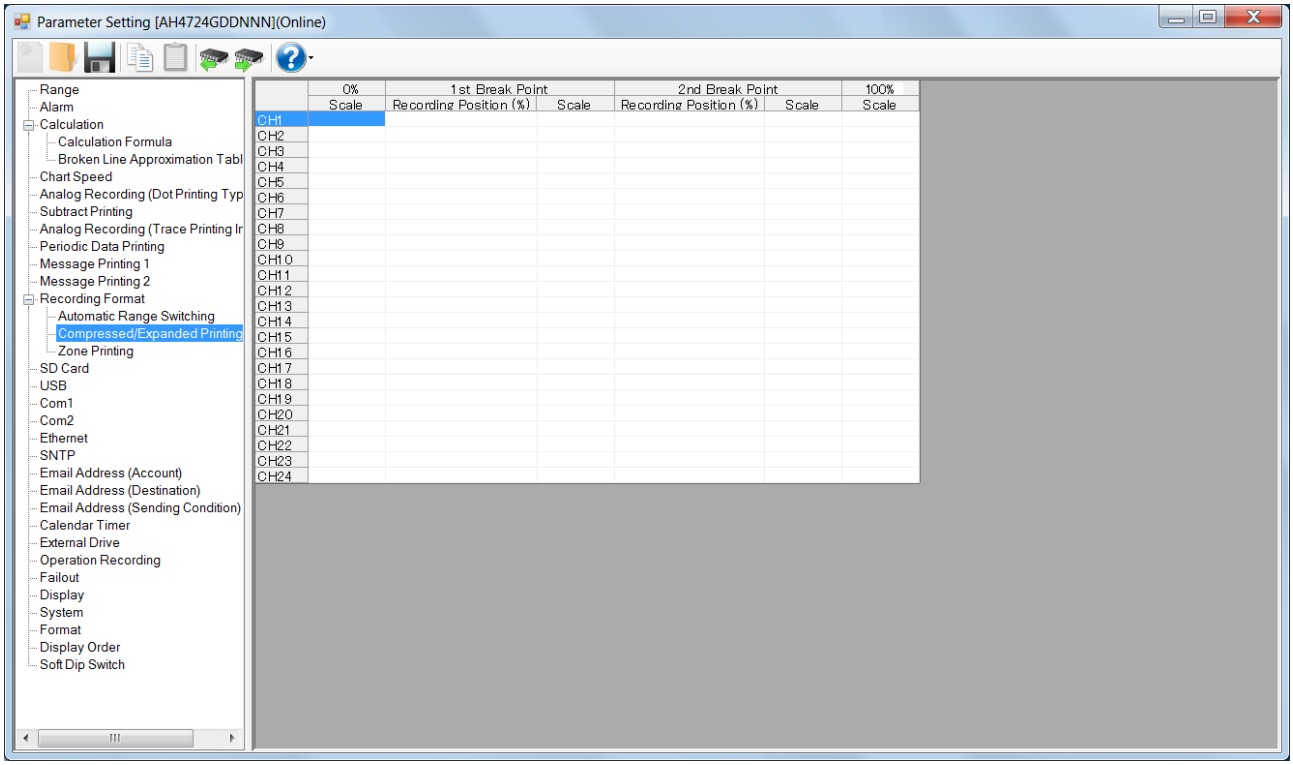
Remarks "Keeping copied data" and "Copy/paste unit"

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one channel number.

6-6-16. Compressed/Expanded Printing Settings "Cmp&Exp"

- The settings for the compressed/expanded printing settings are displayed in the table format to enable you to edit them.
- The columns of the table present the setting parameter types, and the rows present the channel numbers.
- For AL4000/AH4000, you can edit these settings.
- The number of the displayed channels varies depending on the instrument model.

  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the compressed/expanded printing settings.

[Compressed/Expanded Printing Settings "Cmp&Exp" Parameter List]

Setting parameter	Function	Remarks
0%Scale "SCALE-0"	Specify the recording scale for the recording position (0%) Software screen: None; Instrument screen: - Software screen: -30000 to 99999; Instrument screen: -30000 to 99999	The decimal location changes according to the one of the scale When online, an overflow value is displayed as "#######"
1st Break Point Recording Position (%) "POS-1st"	Specify the recording point for the first break point in proportion to the span (%) Software screen: None; Instrument screen: - Software screen: 1 to 99; Instrument screen: 1 to 99	
1st Break Point Scale "SCALE-1st"	Specify the recording scale for the first break point	See the remarks of "0% Scale " for details
2nd Break Point Recording Position (%) "POS-2nd"	Specify the recording point for the second break point in proportion to the span (%) Software screen: None; Instrument screen: - Software screen: 1 to 99; Instrument screen: 1 to 99	
2nd Break Point Scale "SCALE-2nd"	Specify the recording scale for the second break point	See the remarks of "0% Scale " for details
100%Scale "SCALE-100"	Specify the recording scale for the recording position (100%)	-30000 to 99999 See the remarks of "0% Scale " for details

2. Copy and paste operations for compressed/expanded printing setting

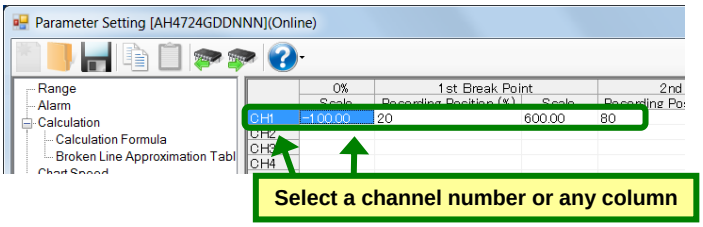
For the compressed/expanded printing setting, you can copy and paste parameters per one channel number (parameters belonging to one channel number).

<How to copy/paste>

(1) Select the copy source

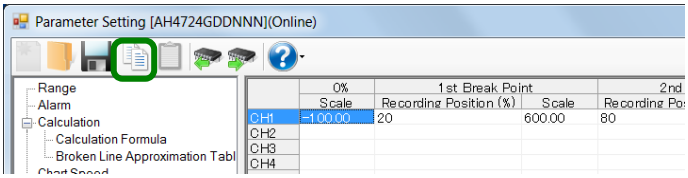
Click to select a channel number or any column to copy from.

* You can copy parameters per one channel number. That means, you cannot select multiple channel numbers to copy the parameters at a time.



(2) Click the [Copy] button

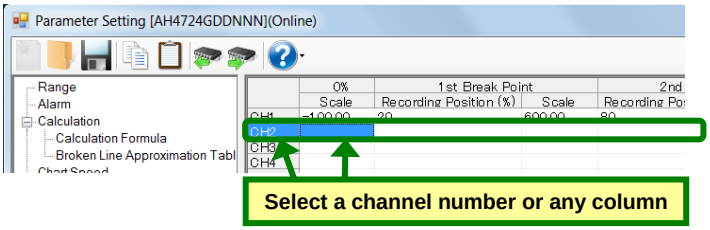
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

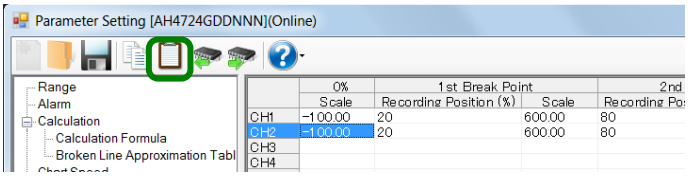
Click to select a channel number or any column to paste to.

* You can paste the parameters to one channel number. That means, you cannot select multiple channel numbers to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

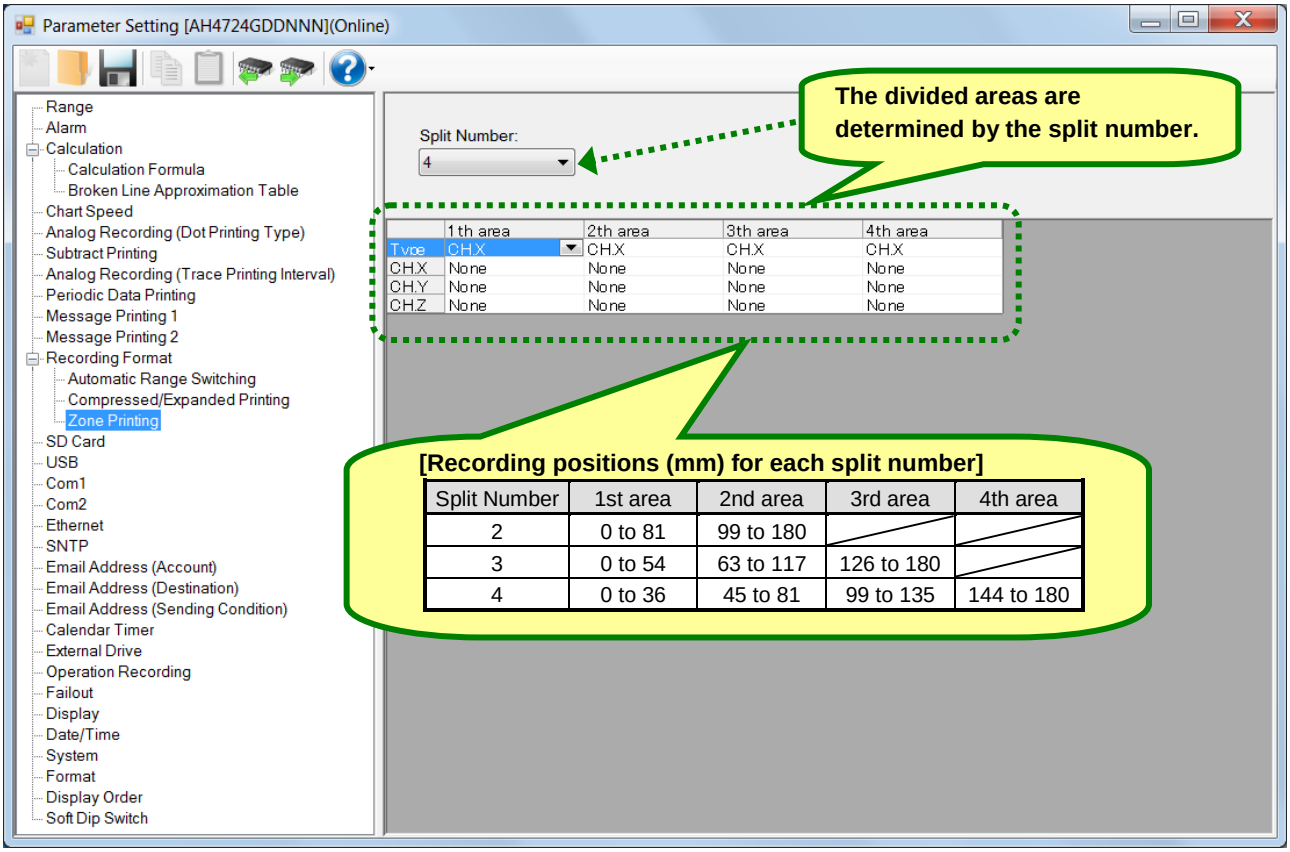


Remarks "Keeping copied data" and "Copy/paste unit"

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one channel number.

6-6-17. Zone Printing Settings "ZonePrt"

- The split number settings of zone printings are displayed in the table format to enable you to edit them.
- Specify the number of divided areas in [Split Number] above the table. The columns of the table present the types of divided areas, and the rows present the setting parameter types.
- For AL4000/AH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the zone printing settings.

[Zone Printing Settings "Zoneprt" Parameter List]

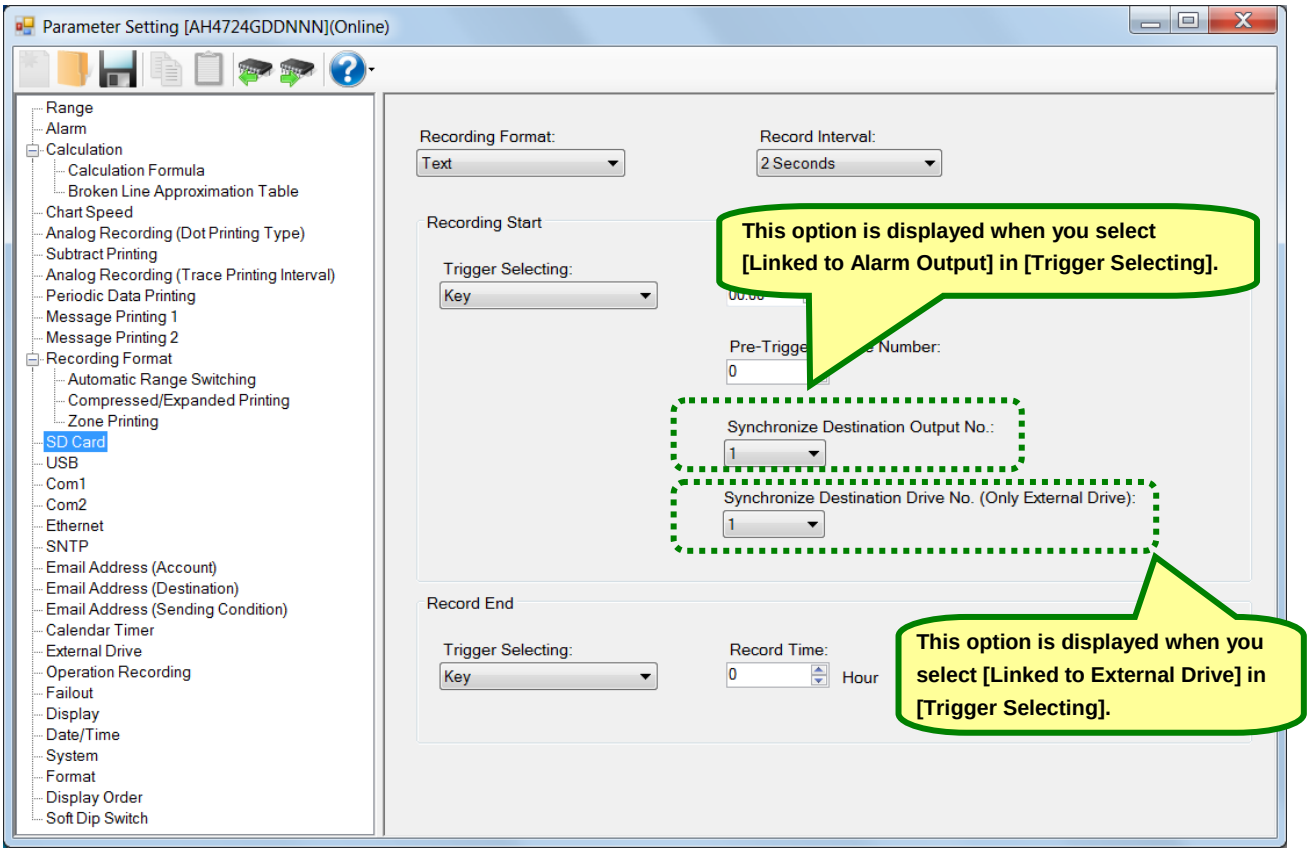
<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Split Number
"Zone"</td><td>Specify the split number for the zone printing
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>2 to 4</td><td>2 to 4</td></tr></table></td><td>For AL4000, the split number is fixed to 2</td></tr>
<tr><td>Type
"Type"</td><td>Area setting format
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>CH.X</td><td>CH.X</td></tr><tr><td>CH.X/CH.Y</td><td>CH.X/CH.Y</td></tr><tr><td>CH.X-CH.Y</td><td>CH.X-CH.Y</td></tr><tr><td>CH.X/CH.Y/CH.Z</td><td>CH.X/CH.Y/CH.Z</td></tr><tr><td>CH.X-CH.Y/CH.Z</td><td>CH.X-CH.Y/CH.Z</td></tr><tr><td>CH.X/CH.Y-CH.Z</td><td>CH.X/CH.Y-CH.Z</td></tr></table></td><td><u>CH.X</u>
Dot CH.X in the specified area
<u>CH.X/CH.Y</u>
Dot CH.X and CH.Y in the specified area
<u>CH.X-CH.Y</u>
Dot CH.X - CH.Y in the specified area
<u>CH.X/CH.Y/CH.Z</u>
Dot CH.X, CH.Y, and CH.Z in the specified area
<u>CH.X-CH.Y/CH.Z</u>
Dot CH.X - CH.Y and CH.Z in the specified area
<u>CH.X/CH.Y-CH.Z</u>
Dot CH.X and CH.Y - CH.Z in the specified area</td></tr>
<tr><td>CH.X
CH.Y
CH.Z</td><td><table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>-</td><td>-</td></tr><tr><td>1 to 24</td><td>1 to 24</td></tr></table></td><td>The number of the displayed channels vary depending on the instrument model.</td></tr>
</table>

Remarks **CH selection**

Channels selected for no areas are skipped.

6-6-18. SD Card Settings "SD CARD"

- The SD card settings are displayed to enable you to edit them.
- For AL4000/AH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the SD card settings.

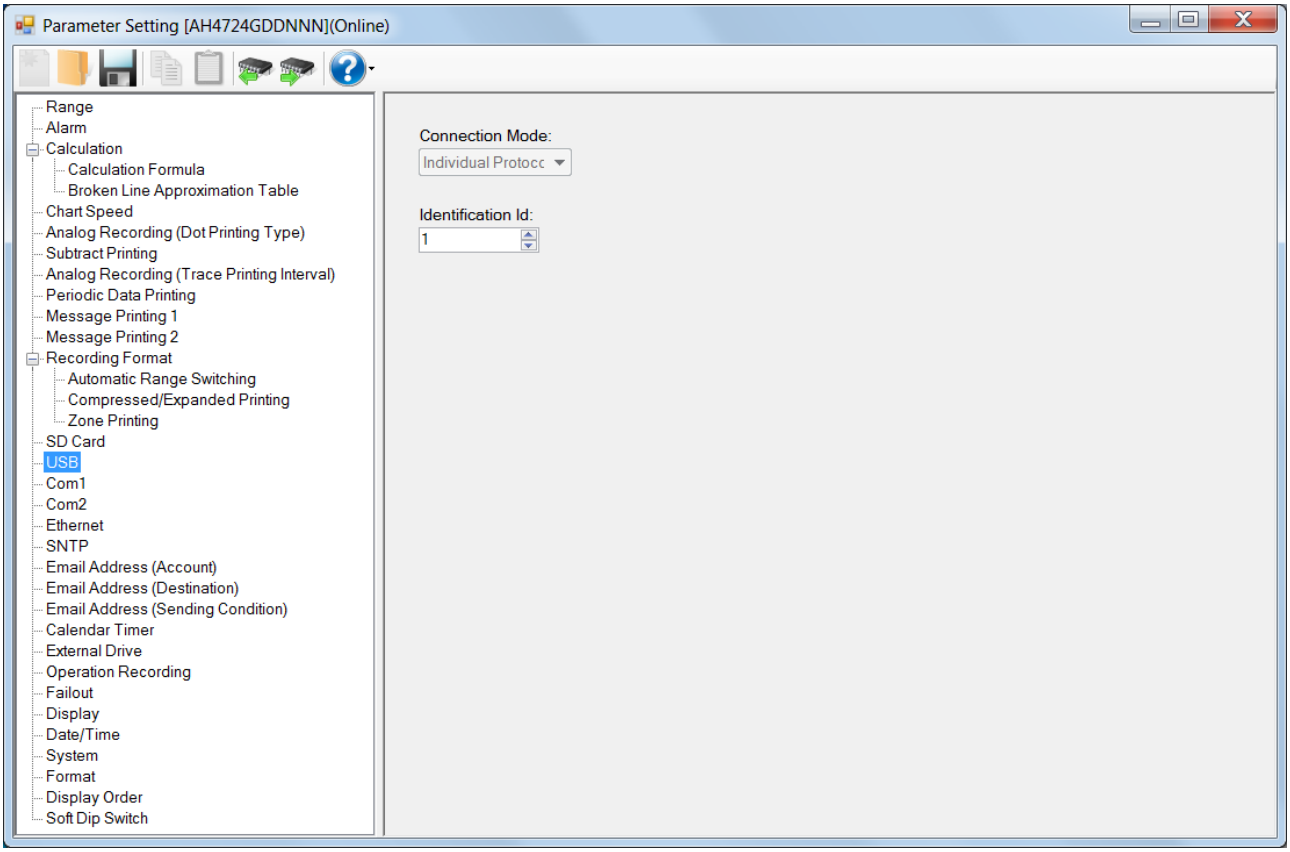
[SD Card Settings "Recording data-Saving" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Recording Format
"Format"</td><td>Select the recording format of the SD card
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Binary</td><td>Binary</td></tr>
<tr><td>Text</td><td>Text</td></tr>
<tr><td>Binary (Floating Decimal Point)</td><td>Binary (float)</td></tr>
<tr><td>Text (Floating Decimal Point)</td><td>Text (float)</td></tr>
</table></td><td></td></tr>
<tr><td>Record Interval
"Interval"</td><td>Select the recording interval of the SD card
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>1 Second, 2 Seconds, (3 Seconds), (4 Seconds), (5 Seconds), (6 Seconds), 10 Seconds, (15 Seconds), (16 Seconds), 20 Seconds, 30 Seconds, 1 Minute, 2 Minutes, 3 Minutes, 5 Minutes, 10 Minutes, 15 Minutes, 20 Minutes, 30 Minutes, 60 Minutes</td><td>1sec, 2sec, (3sec), (4sec), (5sec), (6sec), 10sec, (15sec), (16sec), 20sec, 30sec, 1min, 2min, 3min, 5min, 10min, 15min, 20min, 30min, 60min</td></tr>
</table>
Values in parentheses -: The recording interval options vary depending on the number of inputs.</td><td><u>In case of 6 inputs</u>
[3 Seconds], [5 Seconds], and [15 Seconds] are displayed
([4 Seconds], [6 Seconds], and [16 Seconds] are not displayed)
<u>In case of 12 and 24 inputs</u>
[4 Seconds], [6 Seconds], and [16 Seconds] are displayed
([3 Seconds], [5 Seconds], and [15 Seconds] are not displayed)</td></tr>
<tr><td>Recording Start Trigger Selecting
"Start TRG."</td><td>Select the trigger to start the recording
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>None</td><td>None</td></tr>
<tr><td>Key</td><td>Key ([REC+FUNC1])</td></tr>
<tr><td>Specified Time</td><td>StartTime</td></tr>
<tr><td>Linked to Alarm Output</td><td>Alarm</td></tr>
<tr><td>Linked to External Drive</td><td>EX</td></tr>
<tr><td>Linked to Chart</td><td>Chart</td></tr>
<tr><td>Linked to Chart End</td><td>Chart End</td></tr>
</table></td><td></td></tr>
</table>

<table>
<tr><td>Start Time
"StartTime"</td><td>Specify the recording start time if you select [Specified Time] "StartTime" in [Trigger Selecting] "Start TRG."<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>00 to 23 (Hour)</td><td>00 to 23 Hour</td></tr><tr><td>00 to 59 (Minute)</td><td>00 to 59 Min</td></tr></table></td><td></td></tr>
<tr><td>Pre-Trigger Sample Number
"PreTrigger"</td><td>The specified number of previous samples are recorded together to the SD card when starting the recording<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 10</td><td>0 to 10</td></tr></table></td><td></td></tr>
<tr><td>Record End Trigger Selecting
"End TRG."</td><td>Select the trigger to end the recording<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Key</td><td>Key ([REC+FUNC1])</td></tr><tr><td>Specified Time</td><td>Rec.time</td></tr><tr><td>Linked to Alarm Output</td><td>Alarm</td></tr><tr><td>Linked to External Drive</td><td>EX</td></tr><tr><td>Linked to Chart</td><td>Chart</td></tr><tr><td>Linked to Chart End</td><td>Chart End</td></tr></table></td><td></td></tr>
<tr><td>Record Time
"Rec.time"</td><td>Specify the record time if you select [Specified Time] "Rec.time" in [Trigger Selecting] "End TRG."<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>00 to 99 hours</td><td>00 to 99 Hour</td></tr><tr><td>00 to 59 minutes</td><td>00 to 59 Min</td></tr></table></td><td></td></tr>
<tr><td>Synchronize Destination Output No.
"Relay No."</td><td>Specify the linking alarm output No. if you select [Alarm] in [Start TRG/End TRG]<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 24</td><td>1 to 24</td></tr><tr><td>Dummy Output</td><td>99</td></tr></table></td><td>The displayed number varies depending on the instrument model.</td></tr>
<tr><td>Synchronize Destination Drive No. (Only External Drive)
"EX No."</td><td>Specify the linking external drive No. if you select [EX] in [Start TRG/End TRG]<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>00</td></tr><tr><td>1 to 20</td><td>1 to 20</td></tr></table></td><td>The displayed number varies depending on the instrument model.</td></tr>
</table>

6-6-19. USB Engineering Port Settings "USB"

- The USB engineering port settings are displayed to enable you to edit them.
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
  * When using this software, set [Mode] to [BULK] and [USB ID] to [1] on the connected instrument.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the USB engineering port settings.

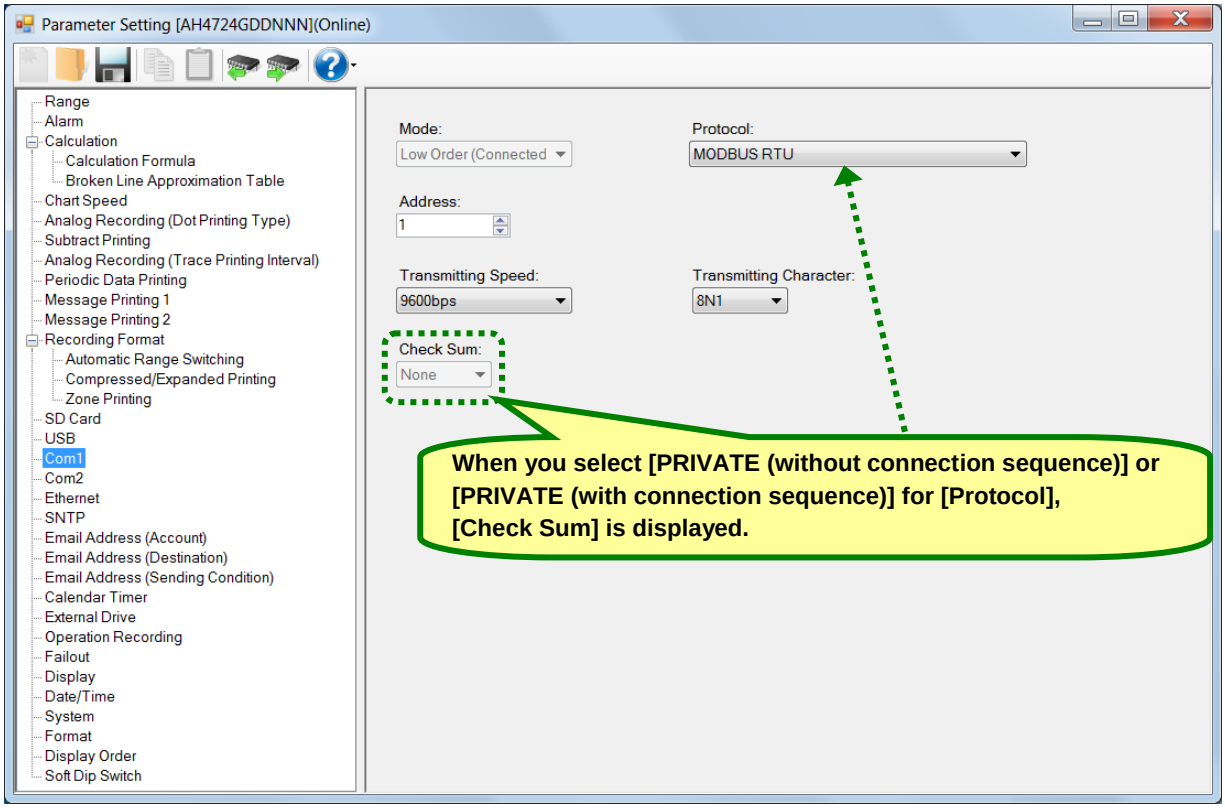
[USG Engineering Port Settings "USB" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Connection Mode
"Mode"</td><td>Select the connection mode<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Individual Protocol</td><td>BULK</td></tr><tr><td>VCP</td><td>VCP</td></tr></table></td><td>[VCP] is displayed but cannot be selected.</td></tr>
<tr><td>Identification Id
"USB ID Address"</td><td>The USB identification address when you select the individual protocol [BULK] in the connection mode [Mode]<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1 to 5</td><td>1 to 5</td></tr></table></td><td></td></tr>
</table>

6-6-20. COM1 (Communication) Settings "COM1"

- The COM1 (communication) settings are displayed to enable you to edit them.
- For AL4000/AH4000 or KL4000/KH4000 with the communication method, you can edit these settings (refer to the table * 1 in section 6-1-5).

  * Refer to the instruction manual of the instrument and the manual for communication interface for more details on the settings.



1. Parameter setting

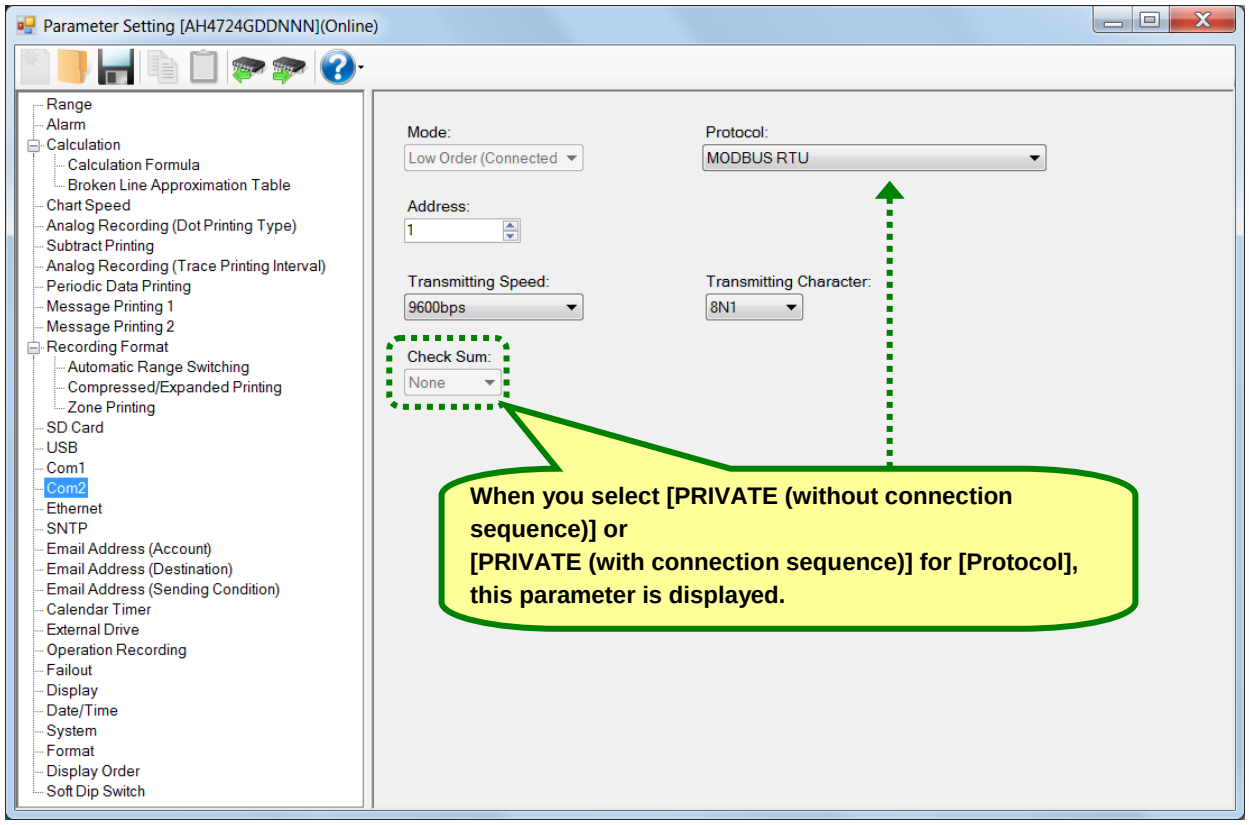
You can configure the following parameters in the COM1 (communication) settings.

[COM1 (Communication) Settings "COM1" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Mode
"Mode"</td><td>Select "Low Order" (the instrument is low order) or "High Order" (the instrument is high order) for the communication mode
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Low Order (Connected to PC)</td><td>Low (To PC etc…)</td></tr>
<tr><td>High Order (Connected to Instruments)</td><td>High (To DB/KP etc…)</td></tr>
</table></td><td>"High Order (Connected to Instruments)" is displayed, but cannot be selected.</td></tr>
<tr><td>Protocol
"Protocol"</td><td>Select the communications protocol
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>MODBUS RTU</td><td>MODBUS RTU</td></tr>
<tr><td>MODBUS ASCII</td><td>MODBUS ASCII</td></tr>
<tr><td>PRIVATE (without connection sequence)</td><td>PRIVATE1</td></tr>
<tr><td>PRIVATE (with connection sequence)</td><td>PRIVATE2</td></tr>
</table></td><td></td></tr>
<tr><td>Address
"Address"</td><td>Set the communication address of the instrument
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>01 to 99</td><td>01 to 99</td></tr>
</table></td><td></td></tr>
<tr><td>Transmitting Speed
"Baudrate"</td><td>Set the communication speed*
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>1200, 2400, 4800,
9600, 19200, 38400</td><td>1200, 2400, 4800,
9600, 19200, 38400</td></tr>
</table></td><td>* PRIVATE: 1200, 2400, 4800, 9600bps
MODBUS: 9600, 19200, 38400bps
This changes to "9600" when the protocol is changed to PRIVATE from MODBUS or vice versa.</td></tr>
<tr><td>Transmitting Character
"Character"</td><td>Set the transmitting character*
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>7E1, 7E2, 7O1, 7O2,
8N1, 8N2, 8E1, 8E2, 8O1, 8O2</td><td>7E1, 7E2, 7O1, 7O2,
8N1, 8N2, 8E1, 8E2, 8O1, 8O2</td></tr>
</table></td><td>* All options are displayed except for the following protocol
MODBUS RTU: Only 8N1, 8N2, 8E1, 8E2, 8O1, and 8O2 are displayed</td></tr>
<tr><td>Check Sum
"Check SUM"</td><td>Select whether or not to add checksum code*
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>None</td><td>OFF</td></tr>
<tr><td>Exists</td><td>ON</td></tr>
</table></td><td>* Available only when the protocol is set to "PRIVATE (without connection sequence)" or "PRIVATE (with connection sequence)"</td></tr>
</table>

6-6-21. COM2 (Communication) Settings "COM2"

- The COM2 (communication) settings are displayed to enable you to edit them.
- For AL4000/AH4000 with the communication method, you can edit these settings (refer to the table * 1 in section 6-1-5).
  * Refer to the instruction manual of the instrument and the manual for communication interface for more details on the settings.



1. Parameter setting

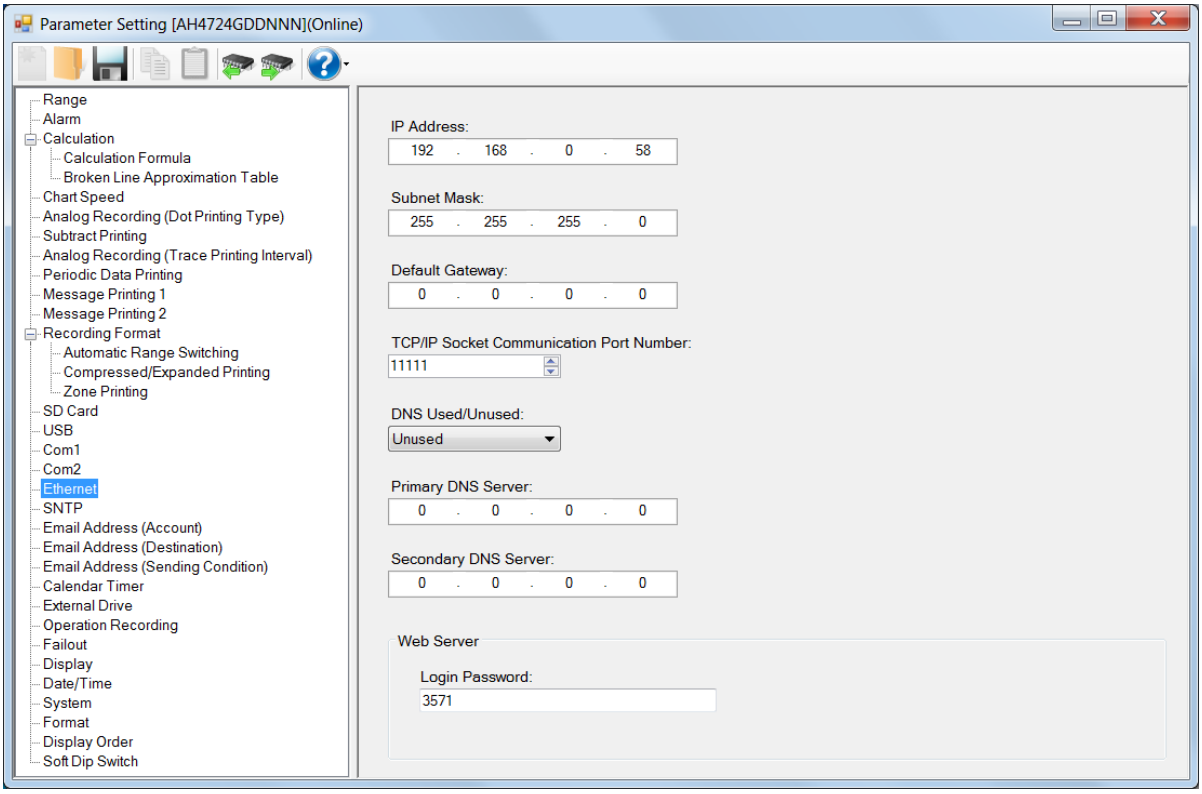
You can configure the following parameters in the COM2 (communication) settings.

[COM2 (Communication) Settings "COM2" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Mode
"Mode"</td><td>Select "Low Order" (the instrument is low order) or "High Order" (the instrument is high order) for the communication mode
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Low Order (Connected to PC)</td><td>Low (To PC etc…)</td></tr><tr><td>High Order (Connected to Instruments)</td><td>High (To DB/KP etc…)</td></tr></table></td><td>"High Order (Connected to Instruments)" is displayed, but cannot be selected.</td></tr>
<tr><td>Protocol
"Protocol"</td><td>Select the communications protocol
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>MODBUS RTU</td><td>MODBUS RTU</td></tr><tr><td>MODBUS ASCII</td><td>MODBUS ASCII</td></tr><tr><td>PRIVATE (without connection sequence)</td><td>PRIVATE1</td></tr><tr><td>PRIVATE (with connection sequence)</td><td>PRIVATE2</td></tr></table></td><td></td></tr>
<tr><td>Address
"Address"</td><td>Set the communication address of the instrument
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>01 to 99</td><td>01 to 99</td></tr></table></td><td></td></tr>
<tr><td>Transmitting Speed
"Baudrate"</td><td>Set the communication speed*
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1200, 2400, 4800,
9600, 19200, 38400</td><td>1200, 2400, 4800,
9600, 19200, 38400</td></tr></table></td><td>* PRIVATE: 1200, 2400, 4800, 9600bps
MODBUS: 9600, 19200, 38400bps
This changes to "9600" when the protocol is changed to PRIVATE from MODBUS or vice versa.</td></tr>
<tr><td>Transmitting Character
"Character"</td><td>Set the transmitting character*
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>7E1, 7E2, 7O1, 7O2,
8N1, 8N2, 8E1, 8E2, 8O1, 8O2</td><td>7E1, 7E2, 7O1, 7O2,
8N1, 8N2, 8E1, 8E2, 8O1, 8O2</td></tr></table></td><td>* All options are displayed except for the following protocol
MODBUS RTU: Only 8N1, 8N2, 8E1, 8E2, 8O1, and 8O2 are displayed</td></tr>
<tr><td>Check Sum
"Check SUM"</td><td>Select whether or not to add checksum code*
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>OFF</td></tr><tr><td>Exists</td><td>ON</td></tr></table></td><td>* Available only when the protocol is set to "PRIVATE (without connection sequence)" or "PRIVATE (with connection sequence)"</td></tr>
</table>

6-6-22. Ethernet Settings "Ether"

- The Ethernet settings are displayed to enable you to edit them.
- For AL4000/AH4000 with the communication method, you can edit these settings (refer to the table * 1 in section 6-1-5).
  * Refer to the instruction manual of the instrument and the manual for communication interface for more details on the settings.



1. Parameter setting

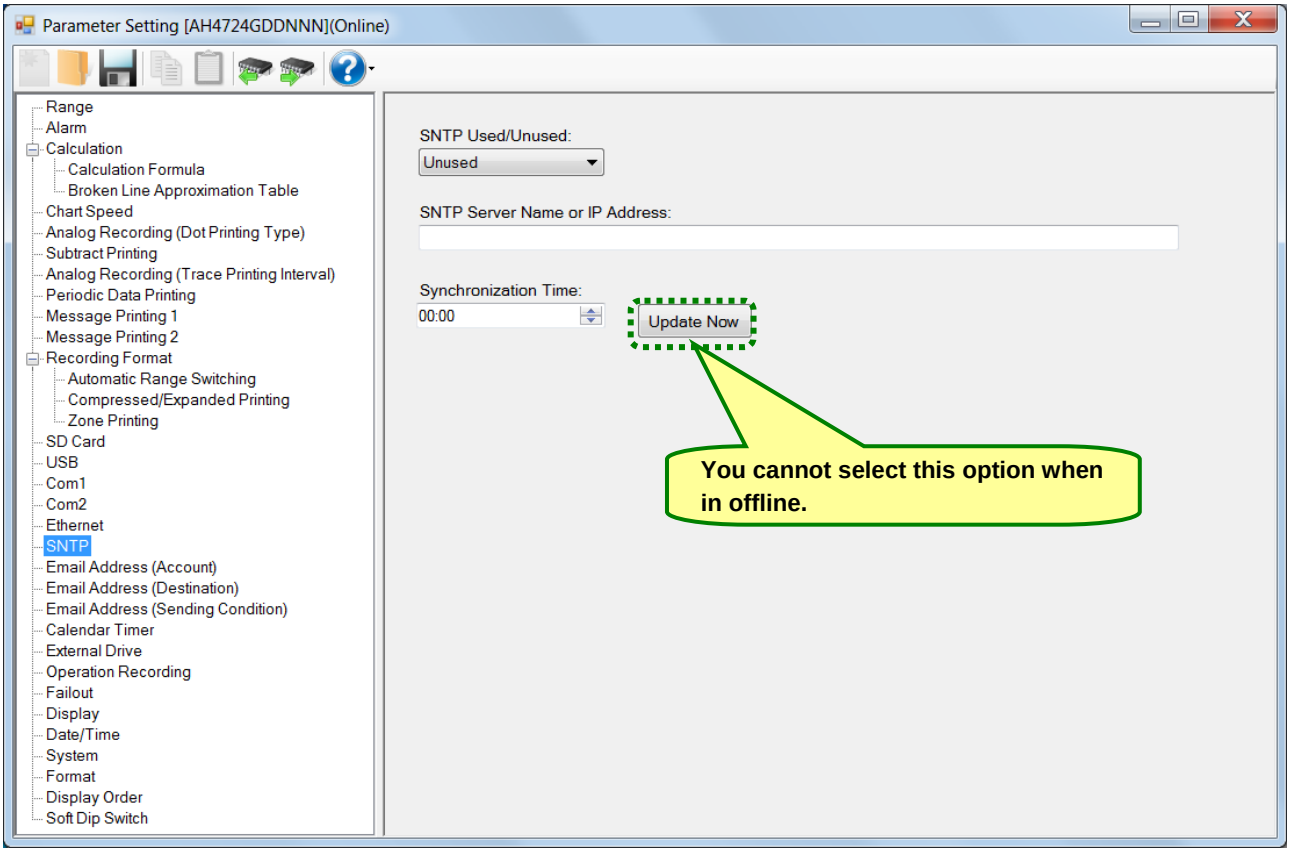
You can configure the following parameters in the Ethernet settings.

[Ethernet Settings "Ether" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>"MAC Address"</td><td>Ethernet MAC address set in the instrument
(Not displayed on the software screen. Only displayed on the instrument screen.)</td><td>Setting impossible</td></tr>
<tr><td>IP Address
"IP Address"</td><td>Set the IP address
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0.0.0.0 to 255.255.255.255</td><td>0.0.0.0 to 255.255.255.255</td></tr></table></td><td></td></tr>
<tr><td>Subnet Mask
"Subnet Mask"</td><td>Set the subnet mask
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0.0.0.0 to 255.255.255.255</td><td>0.0.0.0 to 255.255.255.255</td></tr></table></td><td></td></tr>
<tr><td>Default Gateway
"Default Gateway"</td><td>Set the default gateway address of the network used
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0.0.0.0 to 255.255.255.255</td><td>0.0.0.0 to 255.255.255.255</td></tr></table></td><td></td></tr>
<tr><td>TCP/IP Socket Communication Port Number
"Port No."</td><td>Set the port number used for TCP/IP socket communication with the high-order
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 65535</td><td>0 to 65535</td></tr></table></td><td></td></tr>
<tr><td>DNS Used/Unused
"DNS ON/OFF"</td><td>Select whether or not to use DNS (domain name server)
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Unused</td><td>OFF</td></tr><tr><td>Used</td><td>ON</td></tr></table></td><td>When DNS is not used, set the IP address
When DNS is used, set the name of the SNTP, SMTP, or other server</td></tr>
<tr><td>Primary DNS Server
"Primary Server"</td><td>Set the primary DNS server
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0.0.0.0 to 255.255.255.255</td><td>0.0.0.0 to 255.255.255.255</td></tr></table></td><td></td></tr>
<tr><td>Secondary DNS Server
"Secondary Server"</td><td>Set the secondary DNS server
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0.0.0.0 to 255.255.255.255</td><td>0.0.0.0 to 255.255.255.255</td></tr></table></td><td></td></tr>
<tr><td>Login Password
"Password"</td><td>Set a password consisting of up to 32 characters (one byte) used for setting on the Web</td><td>Available characters (one byte):
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789 (refer to section 6-1-2)</td></tr>
</table>

6-6-23. SNTP Settings "SNTP"

- The SNTP settings are displayed to enable you to edit them.
- For AL4000/AH4000 with the communication method, you can edit these settings (refer to the table * 1 in section 6-1-5).
  * Refer to the instruction manual of the instrument and the manual for communication interface for more details on the settings.



1. Parameter setting

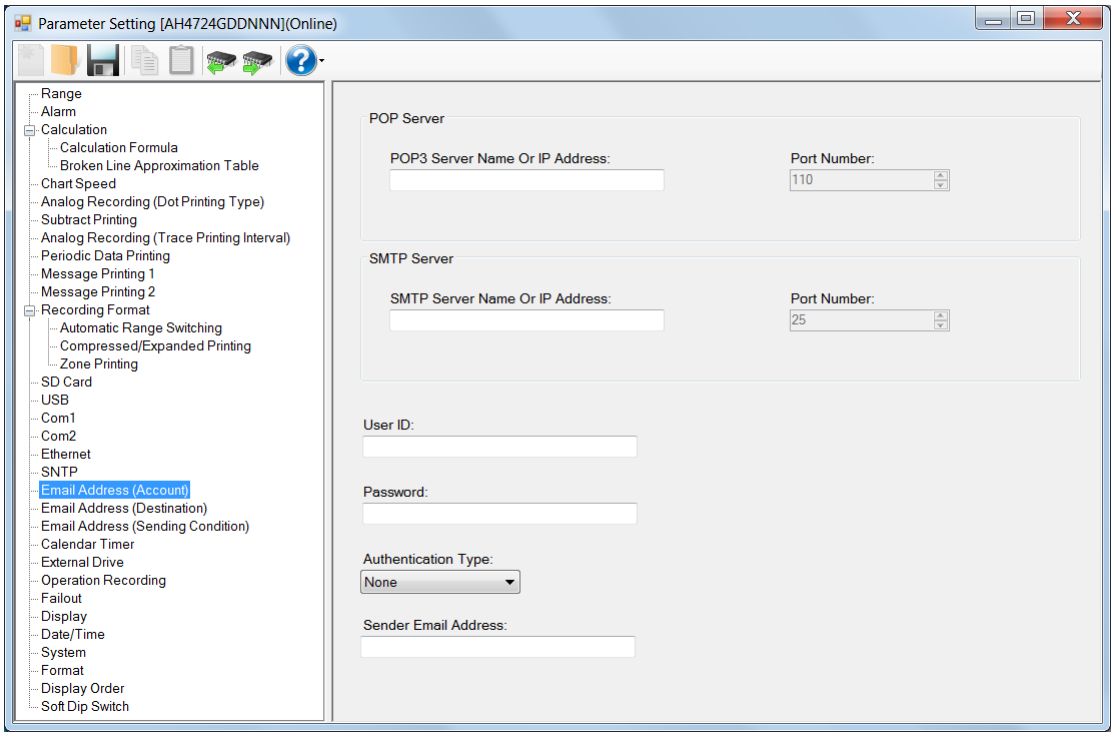
You can configure the following parameters in the SNTP settings.

[SNTP Settings "SNTP" Parameter List]

Setting parameter	Function	Remarks
SNTP Used/Unused "ON/OFF"	Set whether or not to use the time setting function by SNTP Software screen: Unused / Used Instrument screen: OFF / ON	
SNTP Server Name or IP Address "Server"	Set the name or IP address of the SNTP server using up to 32 characters (one byte)	When DNS is used, set the server name When DNS is not used, set the IP address of the server Available characters (one byte): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789+-*/%^()._:;<>=![]¥ (refer to section 6-1-2)
Synchronization Time "Std.TIME"	Set the reference time for query Software screen: 00 to 23 (Hour) / 00 to 59 (Minute) Instrument screen: 00 to 23 Hour / 00 to 59 Min	

6-6-24. Email Address (Account) Settings "E-mail Account"

- The email address (account) settings are displayed to enable you to edit them.
- For AL4000/AH4000 with the communication method, you can edit these settings (refer to the table * 1 in section 6-1-5).
  * Refer to the instruction manual of the instrument and the manual for communication interface for more details on the settings.



1. Parameter setting

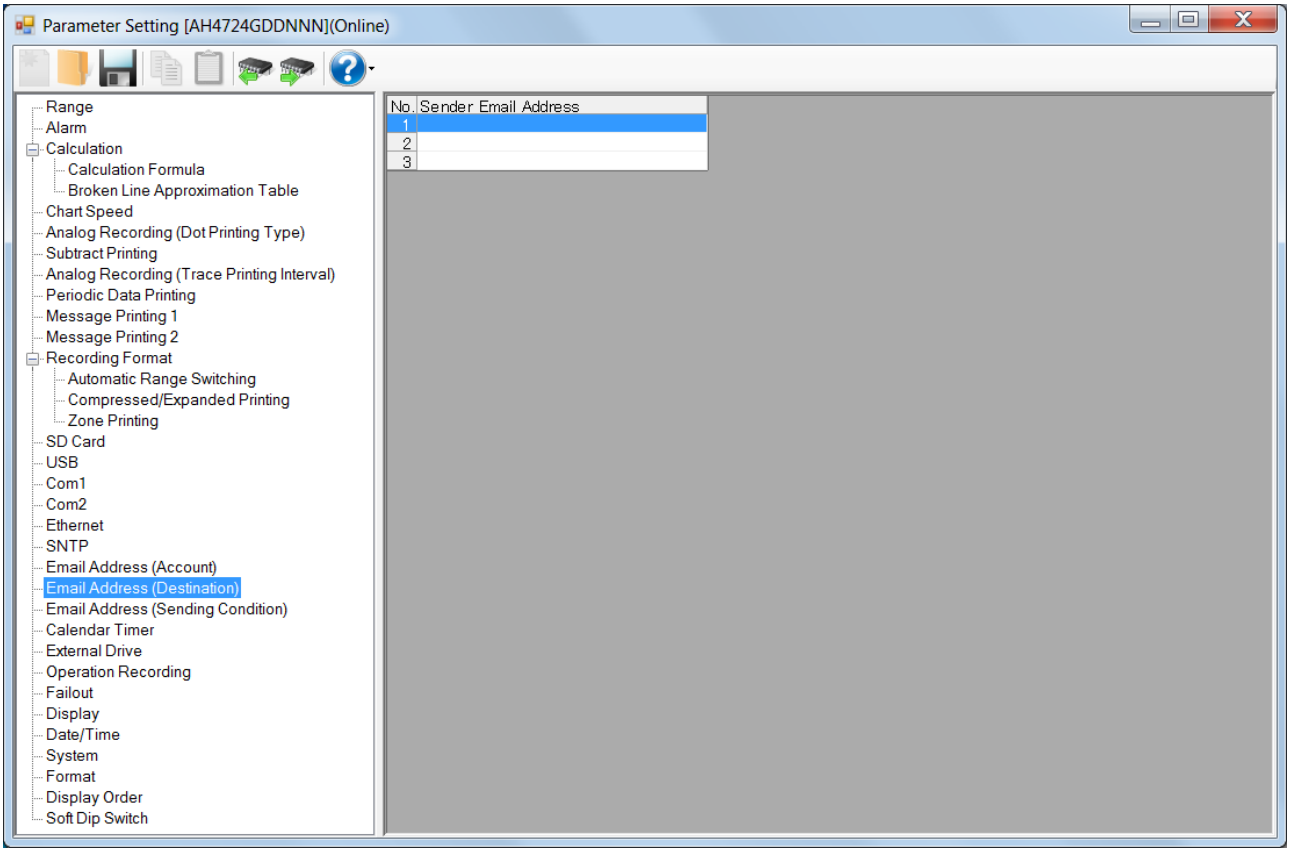
You can configure the following parameters in the email address (account) settings.

[Email Address (Account) Settings "E-mail Account" Parameter List]

Setting parameter	Function	Remarks
POP3 Server Name Or IP Address "POP3 Server"	Set the name or IP address of the server used for POP3 authentication using up to 32 characters (one byte)	When DNS is used, set the server name When DNS is not used, set the IP address of the server Available characters (one byte): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz0123456789 +-*/%^().,_:;<>=![]¥ (refer to section 6-1-2)
Port Number "POP3 Port" (POP3 server side)	Set the port number of the POP3 server Software screen: 0 to 65535 Instrument screen: 0 to 65535	110 for standard server
SMTP Server "SMTP Server"	Set the name or IP address of the SMTP server using up to 32 characters (one byte)	When DNS is used, set the server name When DNS is not used, set the IP address of the server The available characters are the same as those of the [POP3 Server Name Or IP Address] setting parameter
Port Number "SMTP Port" (SMTP server side)	Set the port number of the SMTP server Software screen: 0 to 65535 Instrument screen: 0 to 65535	25 for standard server
User ID "User ID"	Set the Email account using up to 32 characters (one byte)	Available characters (one byte): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz0123456789+-._@ (refer to section 6-1-2)
Password "Password"	Set the Email password using up to 32 characters (one byte)	The available characters are the same as those of the [POP3 Server Name Or IP Address] setting parameter
Authentication Type "Authentication"	Authentication type used for accessing the transmission server Software screen / Instrument screen: None / None POP / POP APOP / APOP	
Sender Email Address "Sender address"	Set the sender Email address using up to 32 characters (one byte)	The available characters are the same as those of the [User ID] setting parameter

6-6-25. Email Address (Destination) Settings "E-mail Address"

- The email address (destination) settings are displayed to enable you to edit them.
- The columns of the table represent the destination Email addresses, and the rows represent the Email address numbers.
- For AL4000/AH4000 with the communication method, you can edit these settings (refer to the table * 1 in section 6-1-5).
  * Refer to the instruction manual of the instrument and the manual for communication interface for more details on the settings.



1. Parameter setting

You can configure the following parameters in the email address (destination) settings.

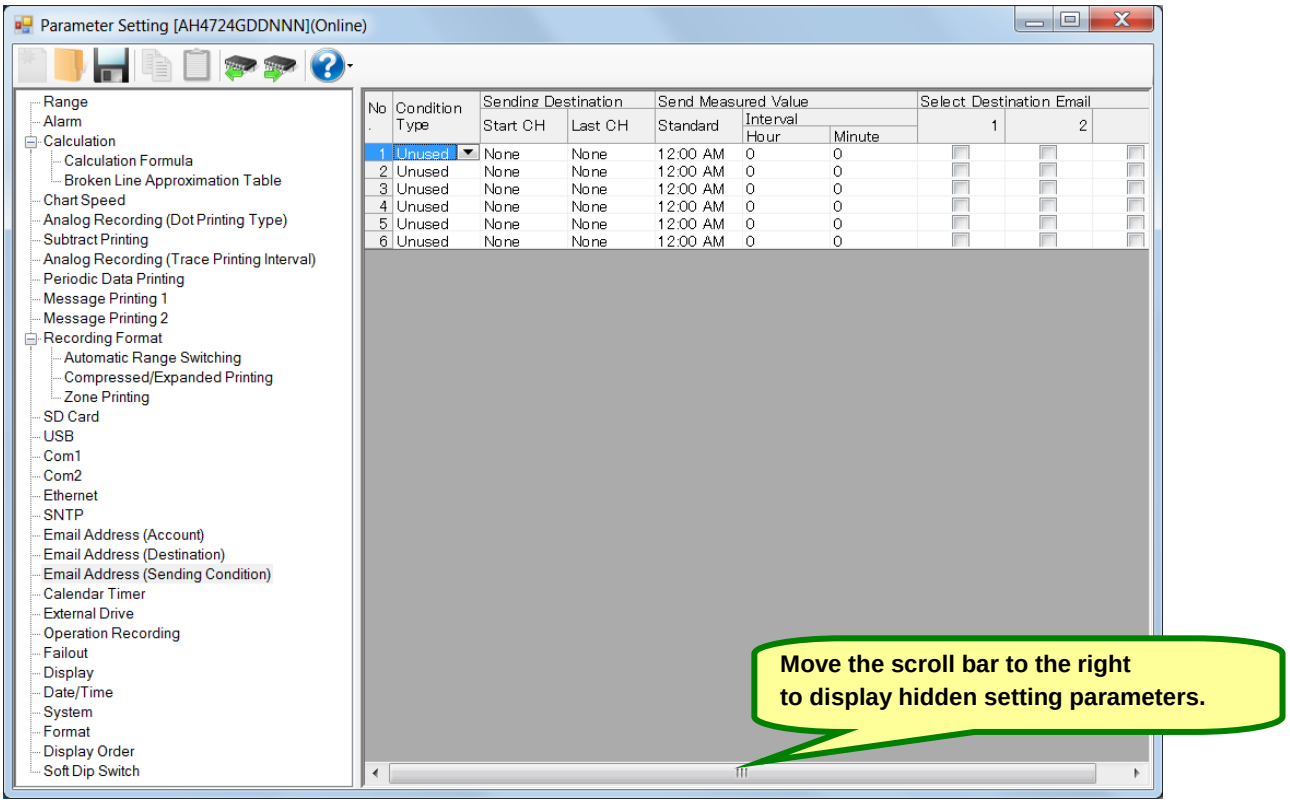
[Email Address (Destination) Settings "E-mail Address" Parameter List]

Setting parameter	Function	Remarks
Destination Email Address "Address"	Set the Email destination address using up to 32 characters (one byte)	Available characters (one byte): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz0123456789+- ._@ (refer to section 6-1-2)

6-6-26. Email Address (Sending Condition) Settings "E-mail Condition"

- The email address (sending condition) settings are displayed to enable you to edit them.
- For AL4000/AH4000 with the communication method, you can edit these settings (refer to the table * 1 in section 6-1-5).

  * Refer to the instruction manual of the instrument and the manual for communication interface for more details on the settings.



1. Parameter setting

You can configure the following parameters in the email address (sending condition) settings.

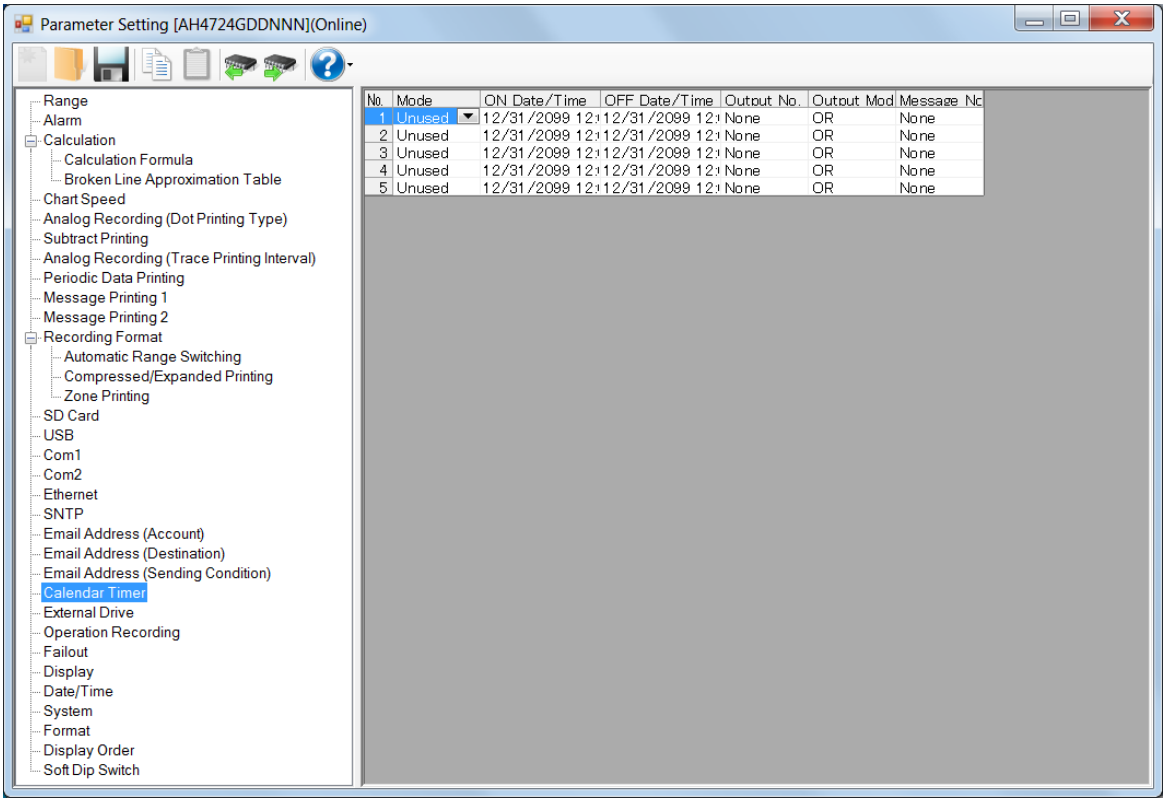
[Email Address (Sending Condition) Settings "E-mail Condition" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Condition Type
"Condition"</td><td>Select the condition type for sending Email
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Unused</td><td>None</td></tr><tr><td>When Alarm Occurred</td><td>Alarm</td></tr><tr><td>Set Time (Send Measured Value)</td><td>Interval</td></tr><tr><td>System Event</td><td>Fail</td></tr></table></td><td></td></tr>
<tr><td>Sending Destination Start CH, Last CH
"Target CH"</td><td>Set the start CH and last CH of the target CHs to send Email when an alarm for measured data or a specific CH occurs
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>(Start CH) None</td><td>From *</td></tr><tr><td>(Start CH) 1 to 24</td><td>From 1 to 24</td></tr><tr><td>(Last CH) None</td><td>To *</td></tr><tr><td>(Last CH) 1 to 24</td><td>To 1 to 24</td></tr></table></td><td>The number of the displayed channels vary depending on the instrument model.</td></tr>
<tr><td>Send Measured Value Standard Time
"Std.TIME"</td><td>Set the reference time for sending the measured data
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>00 to 23 (Hour)</td><td>00 to 23 Hour</td></tr><tr><td>00 to 59 (Minute)</td><td>00 to 59 Min</td></tr></table></td><td></td></tr>
<tr><td>Interval Hour, Minutes
"Interval"</td><td>Set the interval for sending the measured data
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 24 hours</td><td>00 to 24 Hour</td></tr><tr><td>0 to 59 minute</td><td>00 to 59 Min</td></tr></table></td><td></td></tr>
<tr><td>Select Destination Email Address
"Address No."</td><td>Select the destination to send Email based on conditions
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1</td><td>No.1</td></tr><tr><td>2</td><td>No.2</td></tr><tr><td>3</td><td>No.3</td></tr></table></td><td>Select up to three from the destination addresses set in the Email address (destination) by checking their address numbers (refer to section 6-6-25)</td></tr>
</table>

6-6-27. Calendar Timer Settings "Timer"

- The calendar timer settings are displayed to enable you to edit them.
- For AL4000/AH4000, you can edit these settings.

  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the calendar timer settings.

[Calendar Timer Settings "Timer" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Mode
"Mode"</td><td>Select the timer type
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Unused</td><td>None</td></tr><tr><td>ON Time</td><td>ON</td></tr><tr><td>ON/OFF Time</td><td>ON&OFF</td></tr></table></td><td></td></tr>
<tr><td>ON Date/Time
"Timer ON"</td><td>Set the date and time when turning ON the alarm output or printing message
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>2000 to 2099 (Year)</td><td>2000 to 2099 Year</td></tr><tr><td>1 to- 12 (Month)</td><td>1 to 12 Month</td></tr><tr><td>1 to 31 (Day)</td><td>1 to 31 Day</td></tr><tr><td>00 to 23 (Hour)</td><td>00 to 23 Hour</td></tr><tr><td>00 to 59 (Minute)</td><td>00 to 59 Min</td></tr></table></td><td></td></tr>
<tr><td>OFF Date/Time
"Timer OFF"</td><td>Set the date and time when turning OFF the alarm output
The displays on the software and instrument screens are the same as those of the [On Date/Time] setting parameter</td><td></td></tr>
<tr><td>Output No.
"Relay No."</td><td>Specify the output destination (relay No.) when the timer is ON
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 24</td><td>1 to 24</td></tr><tr><td>Dummy Output</td><td>99</td></tr></table></td><td>The number vary depending on the instrument model.</td></tr>
<tr><td>Output Mode
"And/Or"</td><td>Select the connection method to the output destination when the timer is ON
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>OR</td><td>Or</td></tr><tr><td>AND</td><td>And</td></tr></table></td><td></td></tr>
<tr><td>Message No.
"Message No."</td><td>Specify the message No. to be printed when the timer is turned on
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 20</td><td>1 to 20</td></tr></table></td><td></td></tr>
</table>

2. Copy and paste operations for calendar timer setting

For the calendar timer setting, you can copy and paste parameters per timer number (parameters belonging to one timer number).

<How to copy/paste>

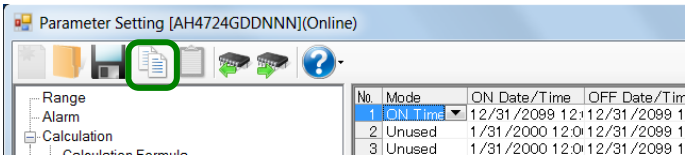
(1) Select the copy source

Click to select a timer number or any column to copy from.

* You can copy parameters per one timer number. That means, you cannot select multiple timer numbers to copy the parameters at a time.

(2) Click the [Copy] button

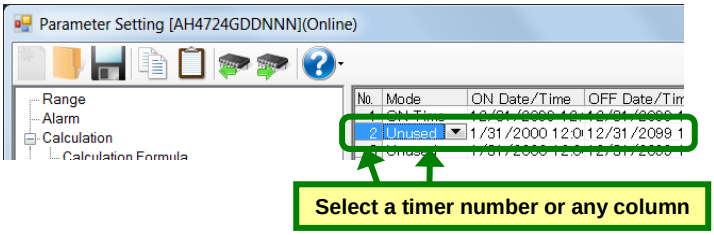
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

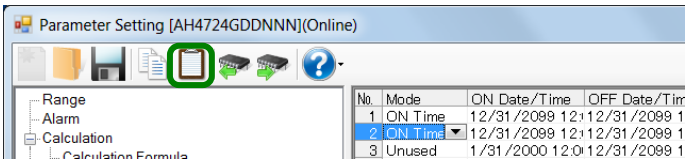
Click to select a timer number or any column to paste to.

* You can paste the parameters to one timer number. That means, you cannot select multiple timer numbers to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

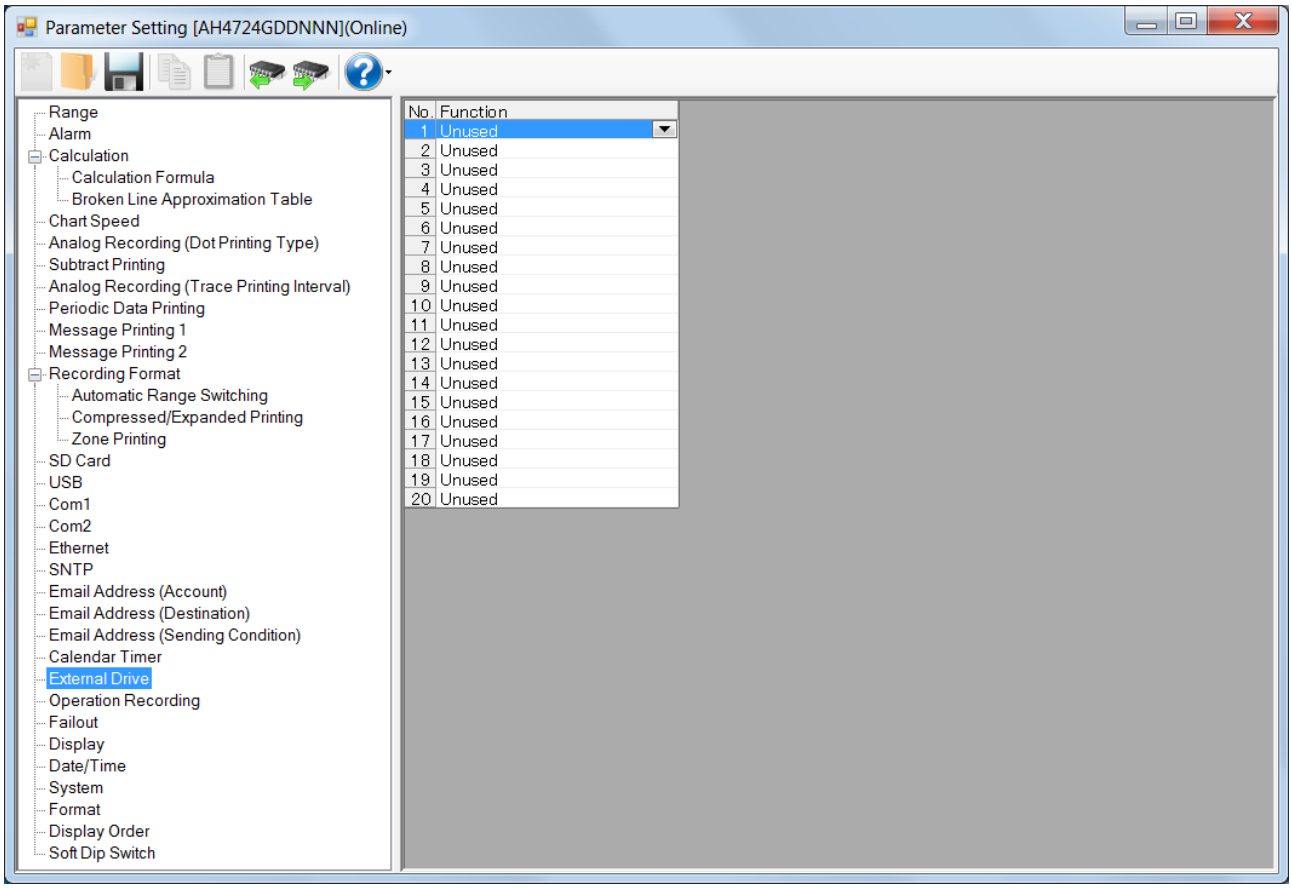


Remarks **"Keeping copied data" and "Copy/paste unit"**

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one timer number.

6-6-28. External Drive Settings "Dig Inp"

- The settings for the external drive are displayed in the table format to enable you to edit them.
- The columns of the table represent the functions, and the rows represent the external drive numbers.
- For AL4000/AH4000 or KL4000/KH4000 with the alarm output + external drive method, you can edit these settings (refer to the table * 1 in section 6-1-5).
- The number of the displayed external drive numbers vary depending on the instrument model.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

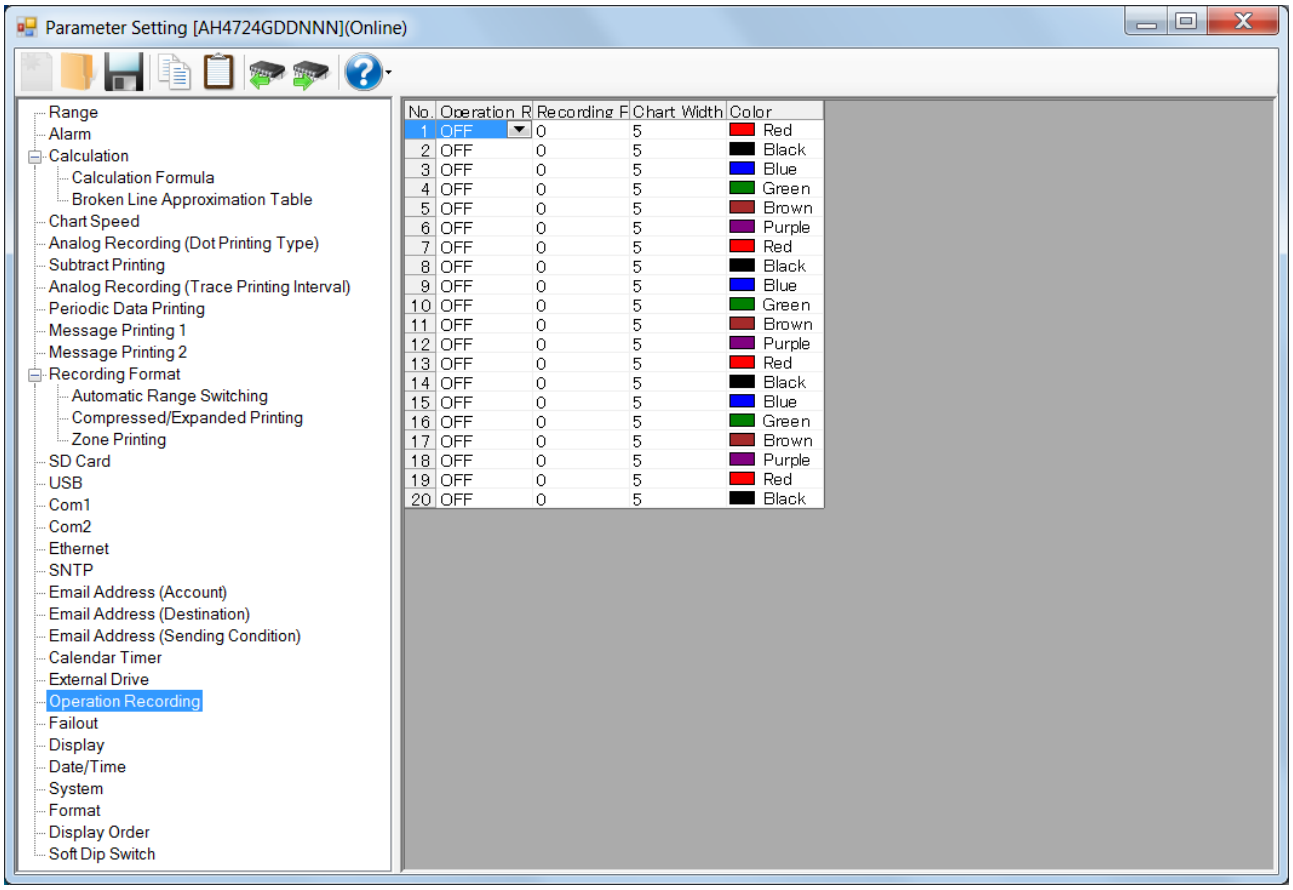
You can configure the following parameters in the external drive settings.

[External Drive Settings "Dig Inp" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Function
"Mode"</td><td>Allocate functions to the given external drive terminal numbers
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Unused</td><td>None</td></tr>
<tr><td>Chart Speed*</td><td>ChartSpeed</td></tr>
<tr><td>Message (1,2)*</td><td>Message 1, 2</td></tr>
<tr><td>Message (1,2,3,4,5)*</td><td>Message 1 to 5</td></tr>
<tr><td>Data Printing</td><td>DataPrint</td></tr>
<tr><td>List 1 Printing - List 3 Printing</td><td>ListPrint 1 to ListPrint 3</td></tr>
<tr><td>Integration Reset (Batch)</td><td>INT-Reset(All)</td></tr>
<tr><td>Message 1 Printing - Message 20s Printing</td><td>Message 1 to Message 20</td></tr>
</table></td><td><u>To select [Chart Speed]</u>
The external drive No. 1 and No. 2 must be set to "Chart Speed".
* If both the external drives No.1 and No.2 are not set, the chart speed selection does not work.
<u>To select [Message (1,2)]</u>
The external drive No. 1 and No. 2 must be set to "Message (1,2)".
* If both the external drives No.1 and No.2 are not set, the message (1,2) selection does not work.
<u>To select [Message (1,2,3,4,5)]</u>
The external drive No. 1 to No. 4 must be set to "Message (1,2,3,4,5)".
* If all of the external drives No.1 to No.4 are not set, the message (1,2,3,4,5) selection does not work.</td></tr>
</table>

6-6-29. Operation Recording Settings "Ope.Rec"

- The settings for the external drive are displayed in the table format to enable you to edit them.
- The columns of the table present the setting parameter types, and the rows present the external drive numbers.
- For AL4000/AH4000 with the alarm output + external drive method, you can edit these settings (refer to the table * 1 in section 6-1-5).
- The number of the displayed external drive numbers vary depending on the instrument model.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the operation recording settings.

[Operation Recording Settings "Ope.Rec" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Operation Recording
"ON/OFF"</td><td>Specify whether the operation recording is turned on or off<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>OFF</td><td>OFF</td></tr><tr><td>ON</td><td>ON</td></tr></table></td><td></td></tr>
<tr><td>Recording Position (%)
"Position"</td><td>Set the recording position for input OFF status in proportion to the chart zero span (%)<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>0 to 90</td><td>0 to 90</td></tr></table></td><td></td></tr>
<tr><td>Chart Width (Mm)
"Width"</td><td>Set the recording position for input ON status by the chart zero span (millimeters) from the input OFF recording position<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1 to 10</td><td>1 to 10</td></tr></table></td><td></td></tr>
<tr><td>Color
"Color"</td><td>Select the color for recording<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>Red</td><td>Red</td></tr><tr><td>Black</td><td>Black</td></tr><tr><td>Blue</td><td>Blue</td></tr><tr><td>Green</td><td>Green</td></tr><tr><td>Brown</td><td>Brown</td></tr><tr><td>Purple</td><td>Purple</td></tr></table></td><td></td></tr>
</table>

2. Copy and paste operations for operation recording setting

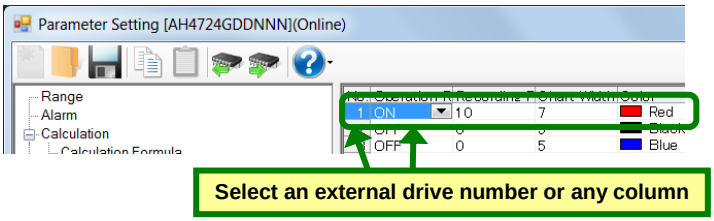
For the operation recording setting, you can copy and paste parameters per external drive number (parameters belonging to one external drive number).

<How to copy/paste>

(1) Select the copy source

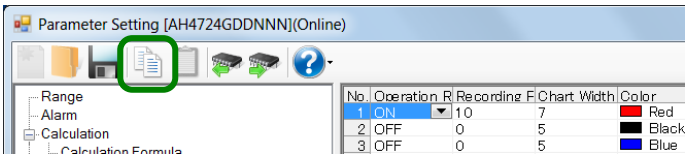
Click to select an external drive number or any column to copy from.

* You can copy parameters per one external drive number. That means, you cannot select multiple external drive numbers to copy the parameters at a time.



(2) Click the [Copy] button

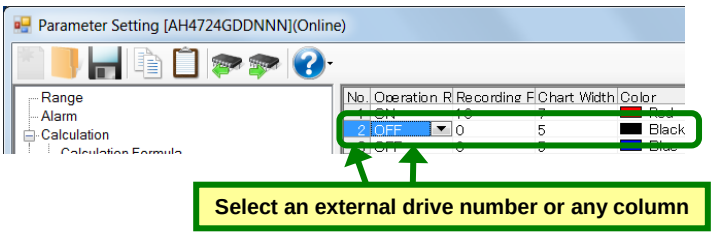
Click the [Copy] button from the tool bar to copy the selected parameters.



(3) Select the paste destination

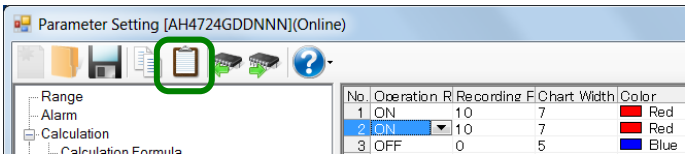
Click to select an external drive number or any column to paste to.

* You can paste the parameters to one external drive number. That means, you cannot select multiple external drive numbers to paste the parameters at a time.



(4) Click the [Paste] button

Click the [Paste] button from the tool bar to paste the parameters to the selected location.

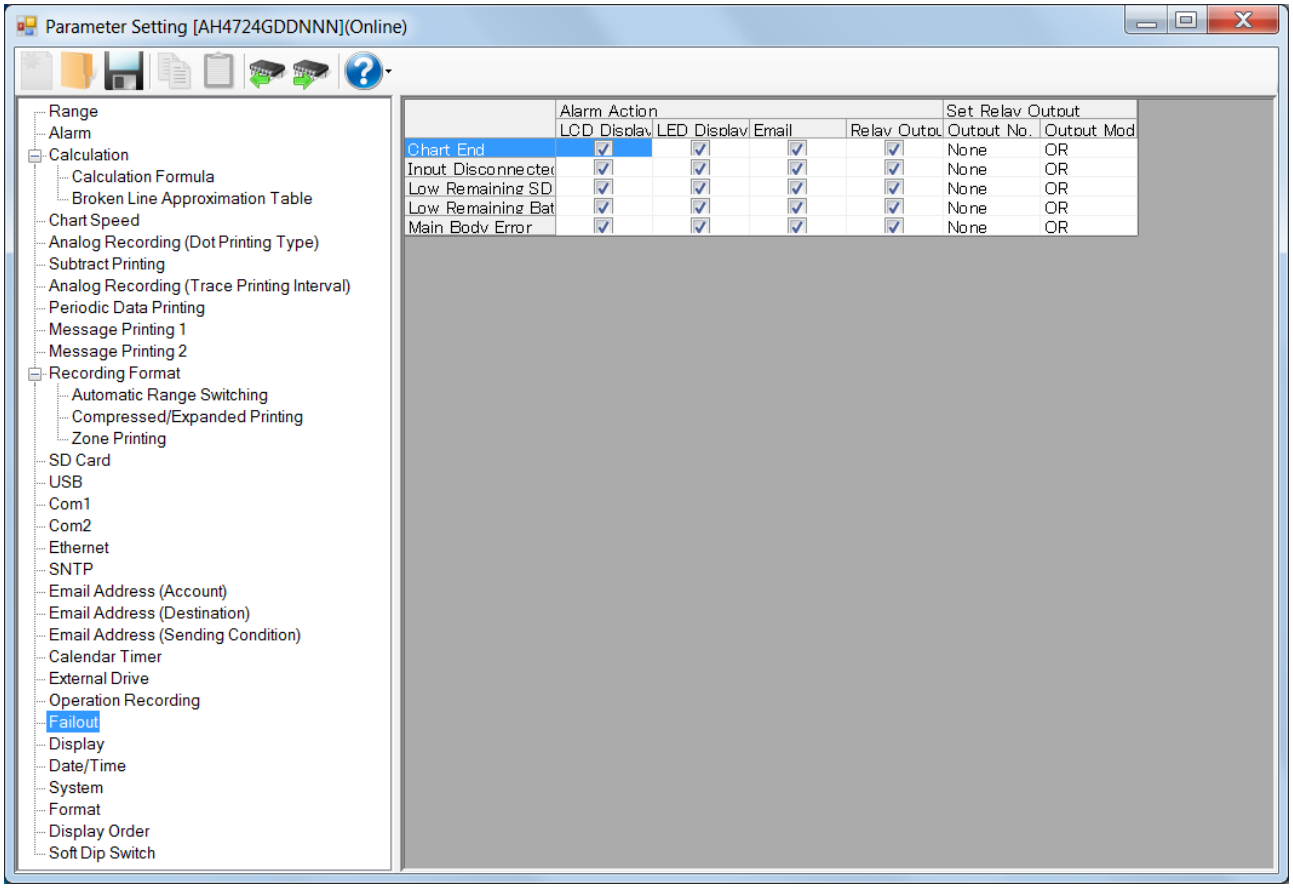


Remarks "Keeping copied data" and "Copy/paste unit"

- The copied parameters are kept after a paste operation until the [Copy] button is clicked the next time. Note that, if you move to another setting item in the edit panel after a copy operation, the copied parameters are lost.
- You cannot copy or paste per setting parameter. The copy or paste operation can be used by one external drive number.

6-6-30. Failout Settings "FailOut"

- The settings for the failout are displayed in the table format to enable you to edit them.
- The columns of the table represent the setting parameter types, and the rows represent the event types for failout.
- For AL4000/AH4000 or KL4000/KH4000, you can edit these settings (for KL4000/KH4000, the settings of "Low Remaining SD", "LCD Display", and "Email" cannot be changed).
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the failout settings.

[Failout Settings "FailOut" Parameter List]

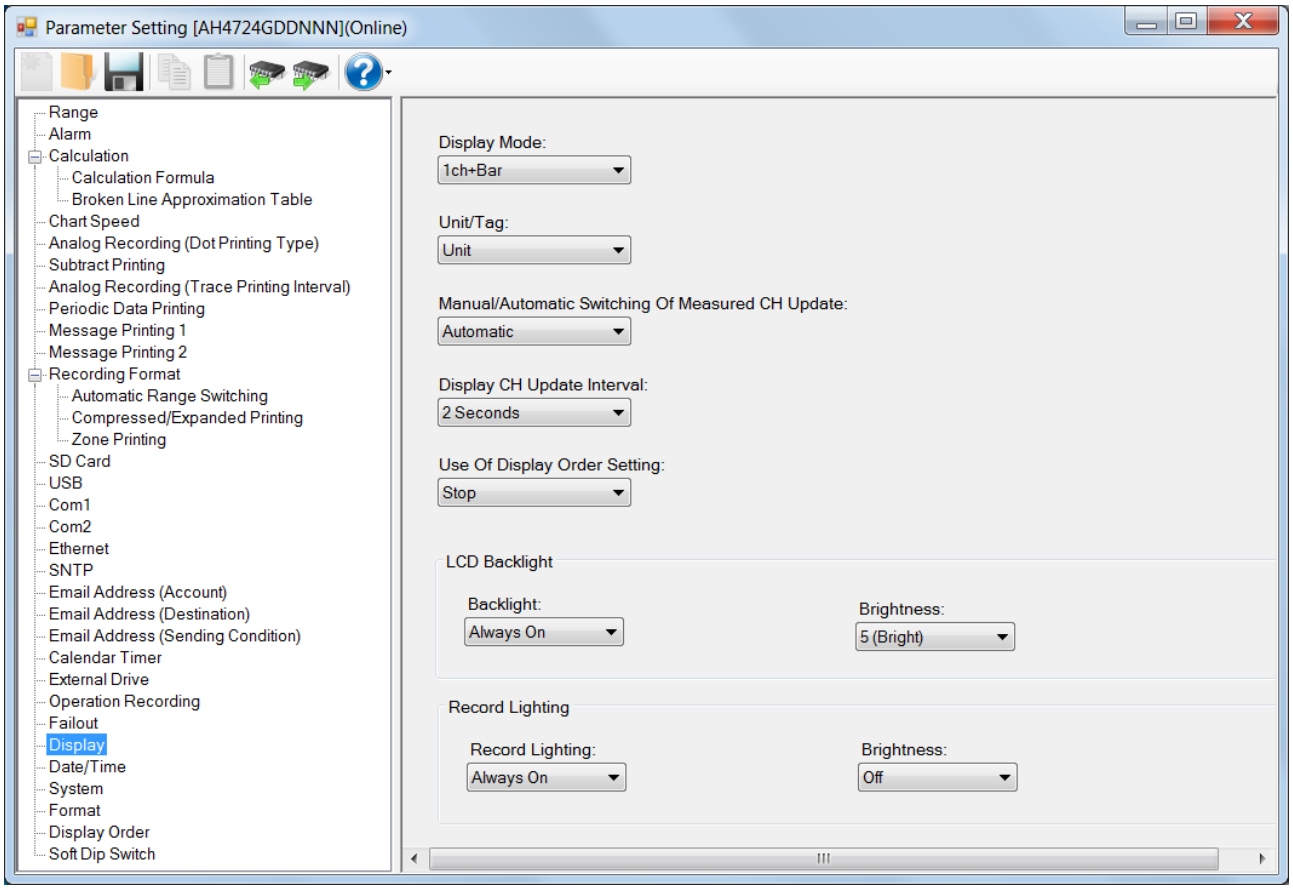
Setting parameter	Function	Remarks
Chart End "Chart End"	Set the alarm action at detection of chart end Use the check boxes for selection Software screen / Instrument screen: LCD Display / LCD LED Display * / LED * Email * / E-mail * Relay output / Relay	Check box operation: ☑ Checked...Display ☐ Unchecked...Do not display * For KL4000/KH4000, the settings cannot be changed.
Input Disconnected "Burn"	Set the alarm action at detection of input disconnection Use the check boxes for selection Software screen / Instrument screen: LCD Display / LCD LED Display * / LED * Email * / E-mail * Relay output / Relay	
Low Remaining SD Card Memory "SD Card"*	Set the alarm action at detection of SD card low capacity Use the check boxes for selection Software screen / Instrument screen: LCD Display * / LCD * LED Display * / LED * Email * / E-mail * Relay output * / Relay *	

<table>
<tr>
<td>Low Remaining Battery Power For Backup
"Battery"</td>
<td>Set the alarm action at detection of backup battery low level
Use the check boxes for selection
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>LCD Display</td><td>LCD</td></tr>
<tr><td>LED Display *</td><td>LED *</td></tr>
<tr><td>Email *</td><td>E-mail *</td></tr>
<tr><td>Relay output</td><td>Relay</td></tr>
</table>
</td>
<td rowspan="2">Check box operation:
☑ Checked...Display
☐ Unchecked...Do not display

* For KL4000/KH4000, the settings cannot be changed.</td>
</tr>
<tr>
<td>Main Body Error
"System Error"</td>
<td>Set the alarm action at detection of main body error
Use the check boxes for selection
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>LCD Display</td><td>LCD</td></tr>
<tr><td>LED Display *</td><td>LED *</td></tr>
<tr><td>Email *</td><td>E-mail *</td></tr>
<tr><td>Relay output</td><td>Relay</td></tr>
</table>
</td>
</tr>
<tr>
<td>Set Relay Output Output No.
"Relay No."</td>
<td>• Set the alarm output destination No. at detection of chart end
• Set the alarm output destination No. at detection of input disconnection
• Set the alarm output destination No. at detection of SD card low capacity
• Set the alarm output destination No. at detection of backup battery low level
• Set the alarm output destination No. at detection of main body error
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>None</td><td>-</td></tr>
<tr><td>1 to 24</td><td>1 to 24</td></tr>
<tr><td>Dummy Output</td><td>99</td></tr>
</table>
</td>
<td>The number vary depending on the instrument model.</td>
</tr>
<tr>
<td>Set Relay Output Output Mode
"And/Or"</td>
<td>• Select the connection method of the alarm output destination at detection of chart end
• Select the connection method of the alarm output destination at detection of input disconnection
• Select the connection method of the alarm output destination at detection of SD card low capacity
• Select the connection method of the alarm output destination at detection of backup battery low level
• Select the connection method of the alarm output destination at detection of main body error
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>OR</td><td>Or</td></tr>
<tr><td>AND</td><td>And</td></tr>
</table>
</td>
<td></td>
</tr>
</table>

6-6-31. Display Settings "Display"

- The display settings are displayed to enable you to edit them.
- For AL4000/AH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the display settings.

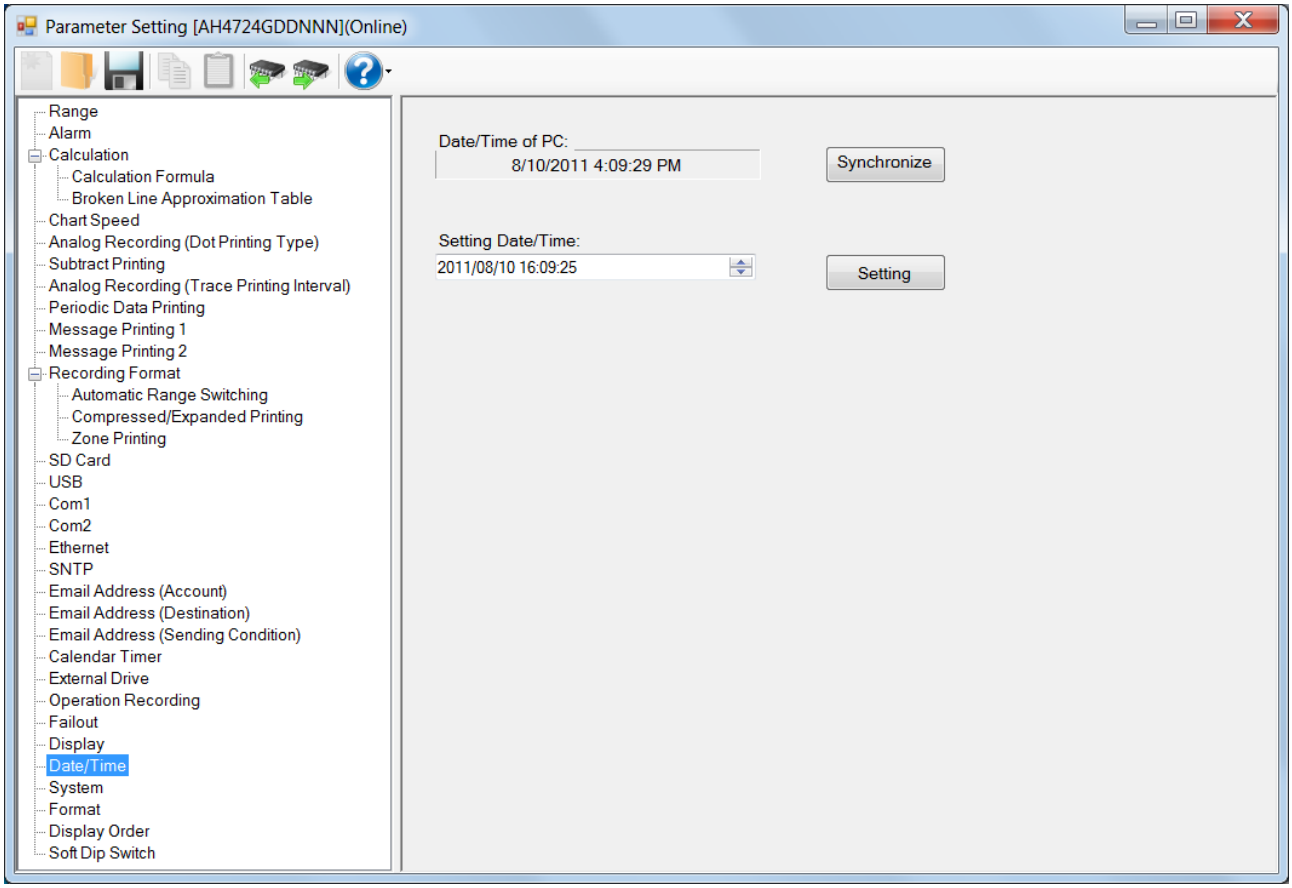
[Display Settings "Display" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>Display Mode
"Display Mode"</td><td>Select the number of CHs and the information displayed simultaneously on a single screen
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>1ch Expand</td><td>01CH</td></tr>
<tr><td>1ch + Bar</td><td>01CH + Bar</td></tr>
<tr><td>6ch Batch</td><td>06CH</td></tr>
<tr><td>12ch Batch *</td><td>12CH *</td></tr>
<tr><td>24ch Batch *</td><td>24CH *</td></tr>
</table></td><td>* Available display modes vary depending on the instrument model.</td></tr>
<tr><td>Unit/Tag
"Unit/Tag"</td><td>Select whether unit or tag you want to display
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Unit</td><td>Unit</td></tr>
<tr><td>Tag</td><td>Tag</td></tr>
</table></td><td></td></tr>
<tr><td>Manual/Automatic Switching Of Measured CH Update
"Auto/Const"</td><td>Select either manual (with keys) or automatic (with update interval) for displayed CH update
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Manual</td><td>Const</td></tr>
<tr><td>Automatic</td><td>Auto</td></tr>
</table></td><td></td></tr>
<tr><td>Display CH Update Interval
"CH-Update Interval"</td><td>Set the update interval of the displayed CHs
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Synchronized With Dots</td><td>Synchro</td></tr>
<tr><td>1 Second</td><td>1sec</td></tr>
<tr><td>2 Seconds</td><td>2sec</td></tr>
<tr><td>3 Seconds</td><td>3sec</td></tr>
<tr><td>5 Seconds</td><td>5sec</td></tr>
<tr><td>10 Seconds</td><td>10sec</td></tr>
<tr><td>30 Seconds</td><td>30sec</td></tr>
</table></td><td></td></tr>
</table>

<table>
<tr>
<td>Use Of Display Order Setting
"Display-order"</td>
<td>Select whether to display the measured values in the CH No. order (OFF) or in an arbitrary order (ON)
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Stop</td><td>OFF</td></tr>
<tr><td>Do</td><td>ON</td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td>Backlight
"Display Backlight"</td>
<td>Select ON or AUTO for the LCD backlight
With AUTO selected, the LCD backlight is turned off after no operations for three minutes
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Always On</td><td>ON</td></tr>
<tr><td>Automatic</td><td>AUTO</td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td>Brightness
"Display Backlight Level"</td>
<td>Select the brightness of the backlight
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>1 (Dark)</td><td>1</td></tr>
<tr><td>2</td><td>2</td></tr>
<tr><td>3</td><td>3</td></tr>
<tr><td>4</td><td>4</td></tr>
<tr><td>5 (Bright)</td><td>5</td></tr>
</table>
</td>
<td>Degree of brightness:
1 < 5
(Dark) (Bright)</td>
</tr>
<tr>
<td>Record Lighting
"Chart Illumination"</td>
<td>Select ON, OFF, or AUTO for the chart illumination
With AUTO selected, the record lighting is turned off after no operations for three minutes
<table>
<tr><th>Software screen</th><th>Instrument screen</th></tr>
<tr><td>Always On</td><td>ON</td></tr>
<tr><td>OFF</td><td>OFF</td></tr>
<tr><td>Automatic</td><td>AUTO</td></tr>
</table>
</td>
<td></td>
</tr>
</table>

6-6-32. Date/Time Settings "Date"

- The date/time settings are displayed to enable you to edit them.
- For AL4000/AH4000 or KL4000/KH4000 and online, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

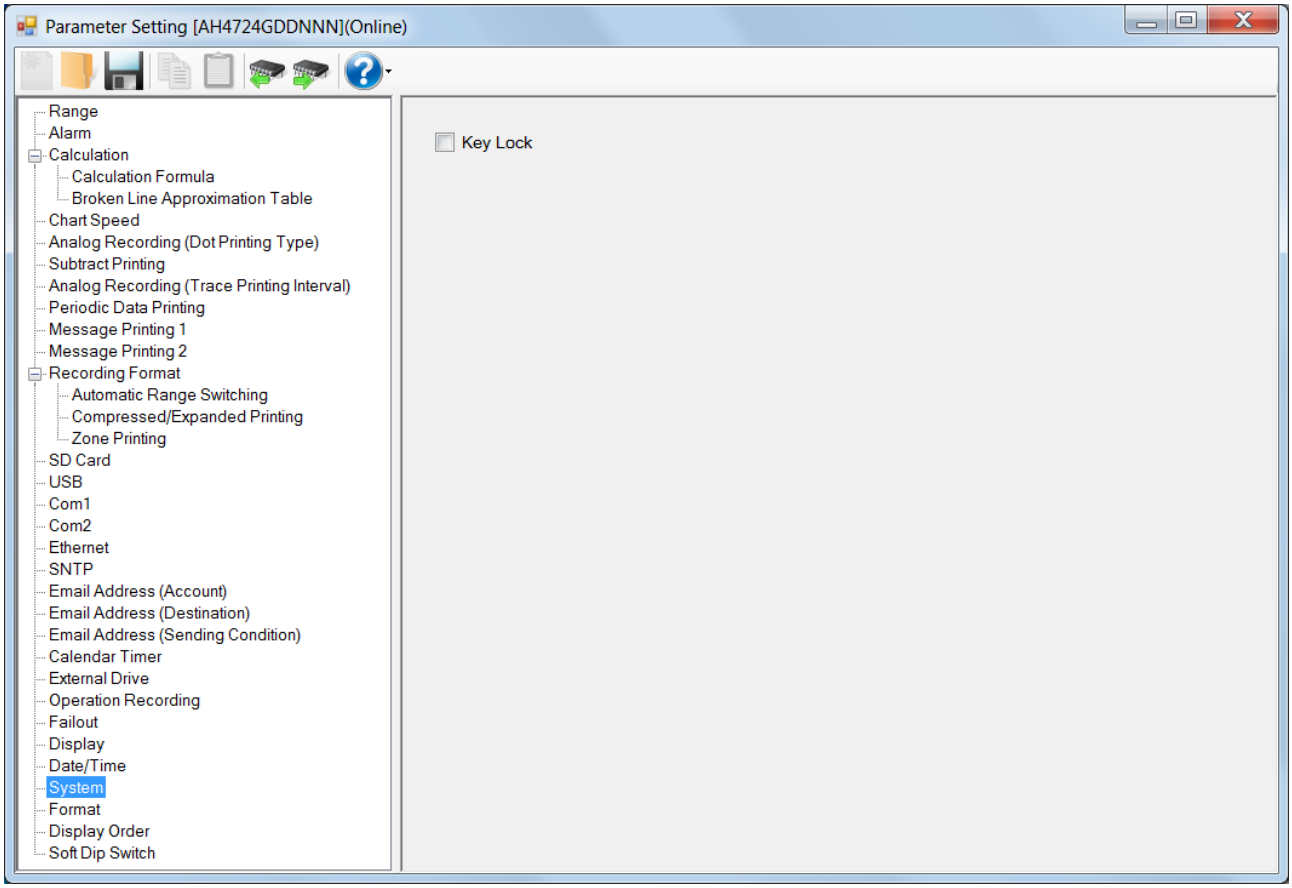
You can configure the following parameters in the date/time settings.

[Date/Time Settings "Date" Parameter List]

<table>
<tr><th colspan="2">Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td colspan="2">Date/Time of PC</td><td>Display the date/time of the PC</td><td>Click the [Synchronize With PC] button to set the date/time of PC at that time to the connected instrument.</td></tr>
<tr><td rowspan="6">Setting Date/Time</td><td>"Year"</td><td>Set the year
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>2000 to 2099</td><td>2000 to 2099</td></tr></table></td><td rowspan="6">After entering the date/time, click the [Setting] button to set the specified date/time to the connected instrument.</td></tr>
<tr><td>"Month"</td><td>Set the month
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1 to 12</td><td>1 to 12</td></tr></table></td></tr>
<tr><td>"Day"</td><td>Set the day
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>1 to 31</td><td>1 to 31</td></tr></table></td></tr>
<tr><td>"Hour"</td><td>Set the hour
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>00 to 23</td><td>00 to 23</td></tr></table></td></tr>
<tr><td>"Min"</td><td>Set the minute
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>00 to 59</td><td>00 to 59</td></tr></table></td></tr>
<tr><td>"Sec"</td><td>Set the second
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>00 to 59</td><td>00 to 59</td></tr></table></td></tr>
</table>

6-6-33. System Settings "System"

- The system settings are displayed to enable you to edit them.
- For AL4000/AH4000 and KL4000/KH4000, you can edit these settings.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the system settings.

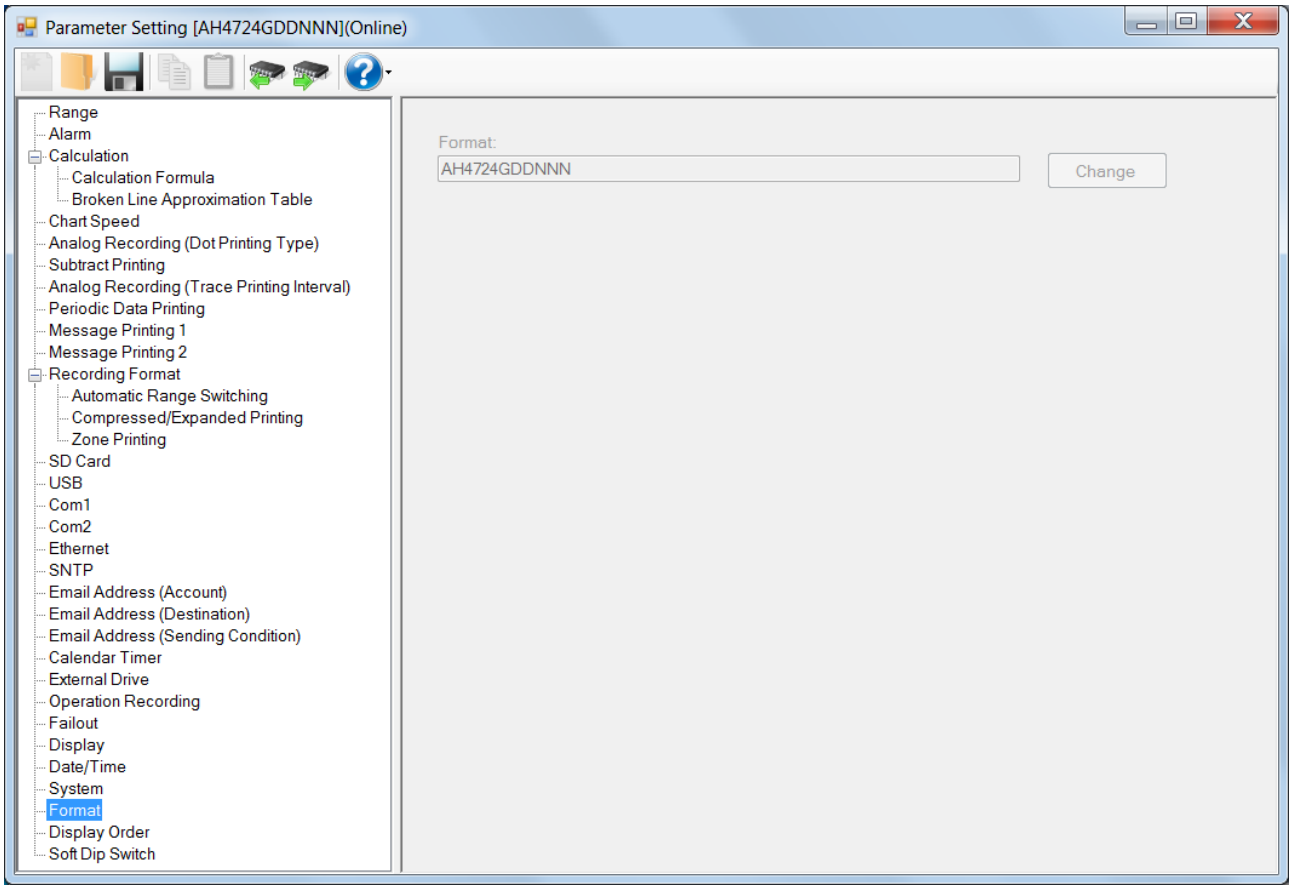
[System Settings "System" Parameter List]

Setting parameter	Function	Remarks
Key Lock "Key Lock"	Disable the keys to change settings Use the check boxes for selection * If you enable [Key Lock], the settings of all items cannot be changed on the instrument. However, you can see the settings.	Check box operation: ☑ Checked...Enable key lock ☐ Unchecked...Disable key lock When in online, the setting is sent to the instrument when the check box ☑ is checked.

* On the instrument screen, the following setting parameters are displayed in addition to the "Key Lock" parameter: "Initialize" for clearing the memory, "Adjust of Rec position" for disabling/enabling the zero or span adjustment for dot printing position, and "Input Correction" for disabling/enabling the input correction setting. On the software screen, only "Key Lock" is displayed.

6-6-34. Format Display

- The [Format] settings are displayed.
- For AL4000/AH4000 and KL4000/KH4000, you can display these settings.



1. Parameter setting

The Format parameter displays the following.

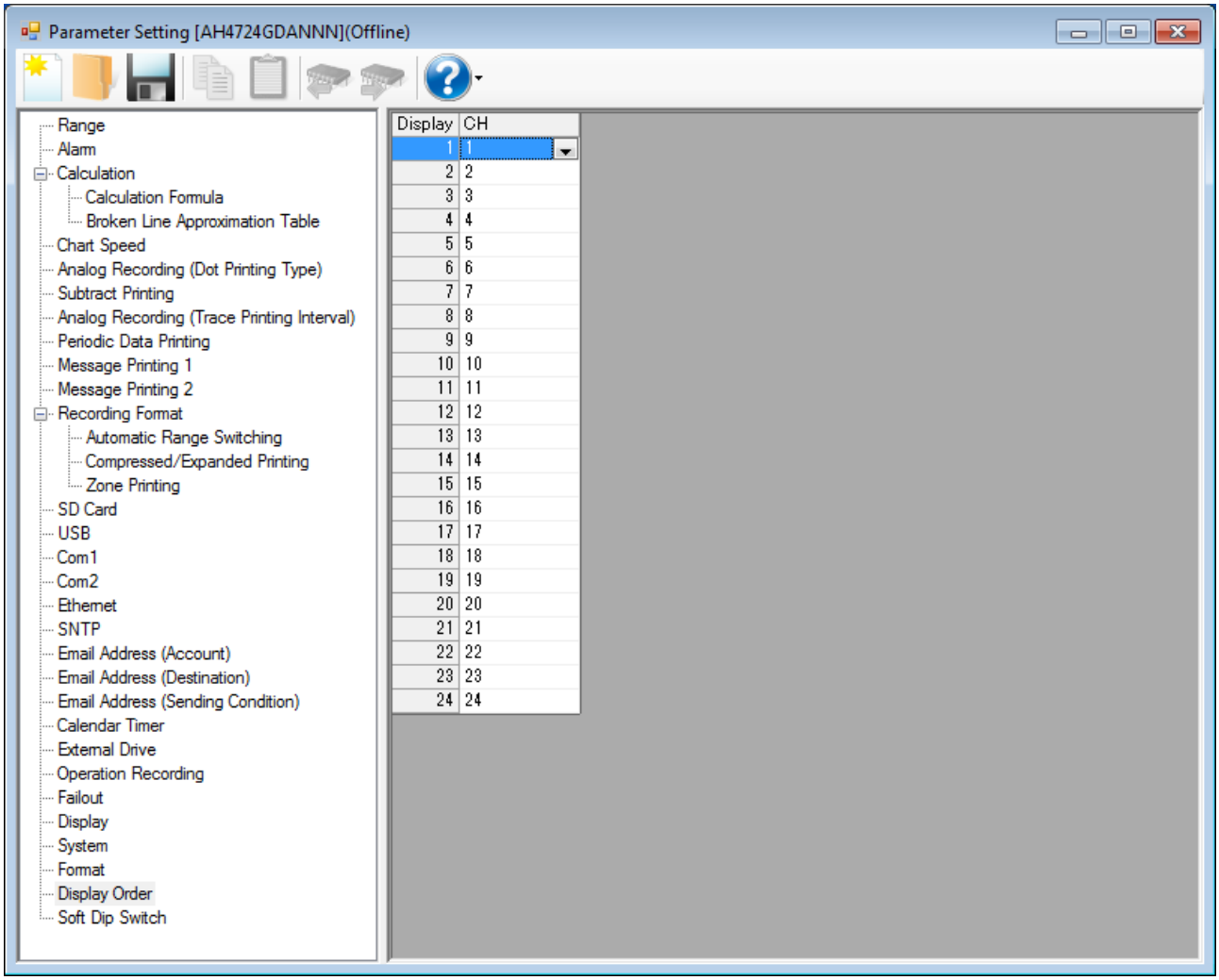
[Format Display Parameter List]

Setting parameter	Function	Remarks
Format "TYPE"	Display the model code of the instrument * "-" (hyphen) is excluded	* You can check the model code in "SysInfo" on the instrument.

* On the instrument screen, the system information display "SysInfo" shows the model code "TYPE" as well as the following setting parameters: the serial number of the instrument "No.", the MAC address of the instrument with Ethernet option "MAC Adr.", the additional information "SP", the status information of other system error "System Value", the printer software version "P", the application software version "A" and "E", the preamplifier 1 software version "I1", and the preamplifier 2 software version "I2". On the software screen, only "Format" is displayed.

6-6-35. Display Order Settings "D.Order"

- The settings for the display order are displayed in the table format to enable you to edit them.
- The columns of the table represent the channel numbers, and the rows represent the display order numbers.
- For AL4000/AH4000, you can edit these settings.
- The number of the displayed channels vary depending on the instrument model.
  * Refer to the instruction manual of the instrument for more details on the settings.



1. Parameter setting

You can configure the following parameters in the display order settings.

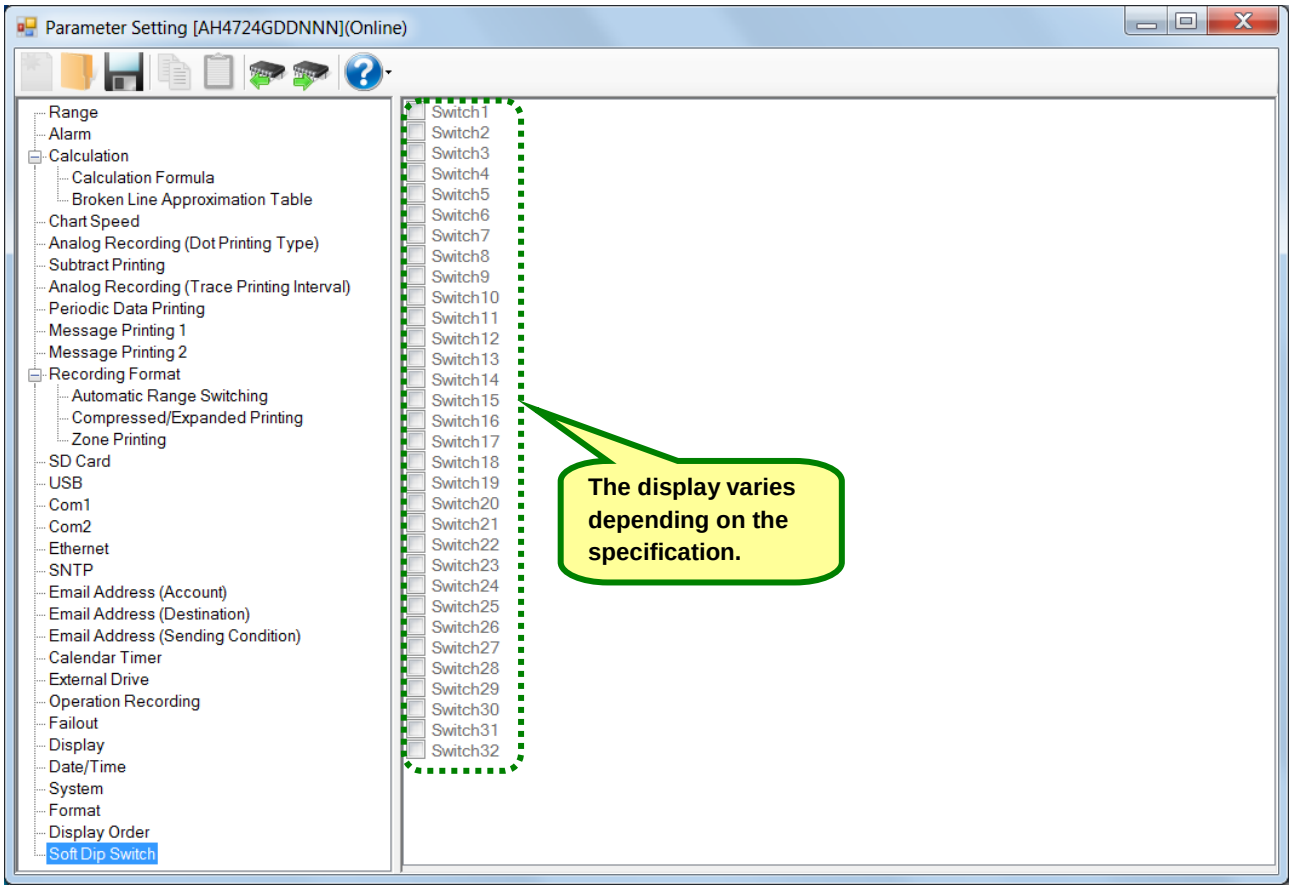
[Display Order Settings "D.Order" Parameter List]

<table>
<tr><th>Setting parameter</th><th>Function</th><th>Remarks</th></tr>
<tr><td>CH
"CH No."</td><td>Set the CH No. to be updated (displayed)
<table><tr><th>Software screen</th><th>Instrument screen</th></tr><tr><td>None</td><td>-</td></tr><tr><td>1 to 24</td><td>1 to 24</td></tr></table></td><td>None: Skipped when the 1CH display is set on the instrument, or blank when the multiple CH display is set

The number of the displayed channels varies depending on the instrument model.</td></tr>
</table>

6-6-36. Soft Dip Switch Settings

- The [Soft Dip Switch] settings are displayed.
- For AL4000/AH4000 and KL4000/KH4000, you can display these settings.



6-7. Operation of Help Screen

On any screen, click the [Help] button to show the instruction manual. Refer to it as requirement.

<Procedure>

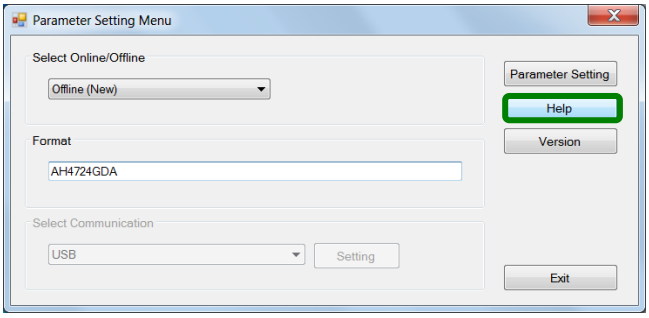
(1) Open the Parameter Setting Menu screen or the Parameter Setting screen

Open the Parameter Setting Menu screen (refer to section 6-2) or the Parameter Setting screen (refer to section 6-6).

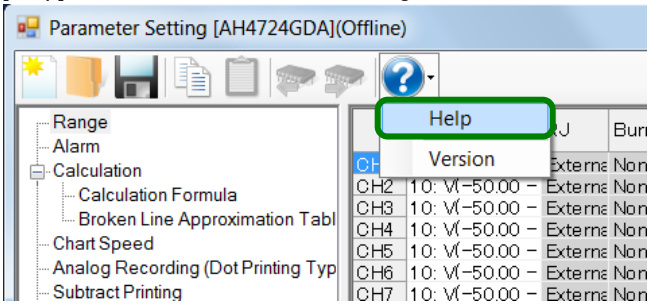
(2) Click the [Help] button

Click the [Help] button on the Parameter Setting Menu screen or the Parameter Setting screen.

- [Help] button on the Parameter Setting Menu screen



- [Help] button on the Parameter Setting screen



(3) Display the instruction manual

The instruction manual is displayed in Internet Explorer.

6-8. Operation of Version Check Screen

On any screen, click the [Version] button to show the version of this software.
When contacting us about the software, please provide this version number.

<Procedure>

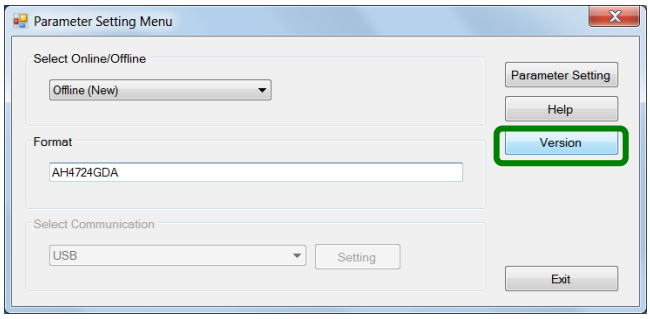
(1) Open the Parameter Setting Menu screen or the Parameter Setting screen

Open the Parameter Setting Menu screen (refer to section 6-2) or the Parameter Setting screen (refer to section 6-6).

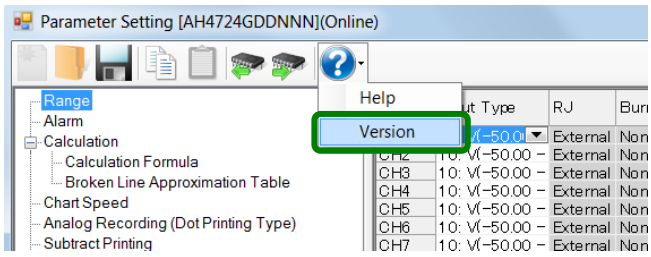
(2) Click the [Version] button

Click the [Version] button on the Parameter Setting Menu screen or the Parameter Setting screen.

- [Version] button on the Parameter Setting Menu screen



- [Version] button on the Parameter Setting screen



(3) Display the version information of the setting software

The Version Information Of Setting Software screen is displayed. When contacting us, please provide the version number.

7. Parameter Switching Tool

With the parameter switching tool, you can connect an old model hybrid recorder[*1] to your PC via engineering cable to create a setting file for new model hybrid recorder[*2] (multi-point type only).

[*1]: Multi-point type AL3000/AH3000 or old BL/old BH ("old model instrument" for short).

[*2]: Multi-point type AL4000/AH4000 or KL4000/KH4000 ("new model instrument" for short).

The table below shows the possible combinations for the parameter switching tool.

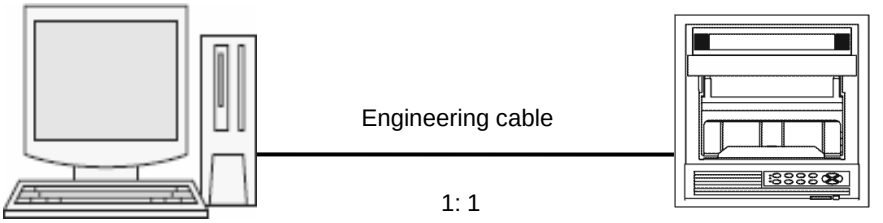
[Switchable Combinations]

Old model instrument	Switching	New model instrument
AL3000 (multi-point type)	→	AL4000 (multi-point type)
AH3000 (multi-point type)	→	AH4000 (multi-point type)
Old BL (multi-point type)	→	KL4000 (multi-point type)
Old BH (multi-point type)	→	KH4000 (multi-point type)

* The contents of "Attention", "Notices", "Trademark", "Request", and "Before use" are the same as those of the parameter setting software (refer to section 1).
  Please read them carefully before using the tool.

7-1. System Configuration

To use the software, the PC and the instrument should be connected one-to-one with an engineering cable.
Connect a new model instrument to the PC before writing the read parameters to the new model instrument (refer to section 2-1).



7-2. Operating Condition of Software

This is the same as for the parameter setting software (refer to section 2-2).
Besides, to use the parameter switching tool, the parameter setting software must have been installed.
Install the parameter setting software before using the parameter switching tool (refer to section 3-1).

7-3. Installation

7-3-1. New Installation

Install the software from the CD-ROM to the PC before using it.
Use the following procedure for installation.

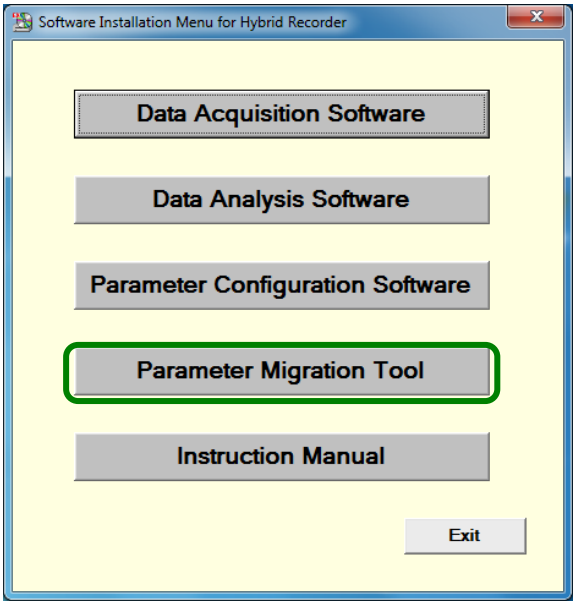
<Procedure>

(1) Insert the CD-ROM

Start Windows, and then insert the CD-ROM into the CD-ROM drive. The menu screen is started automatically.
* It the menu screen is not started automatically, start "asmenux.exe" in the CD-ROM.

(2) Click the [Parameter Migration Tool] button

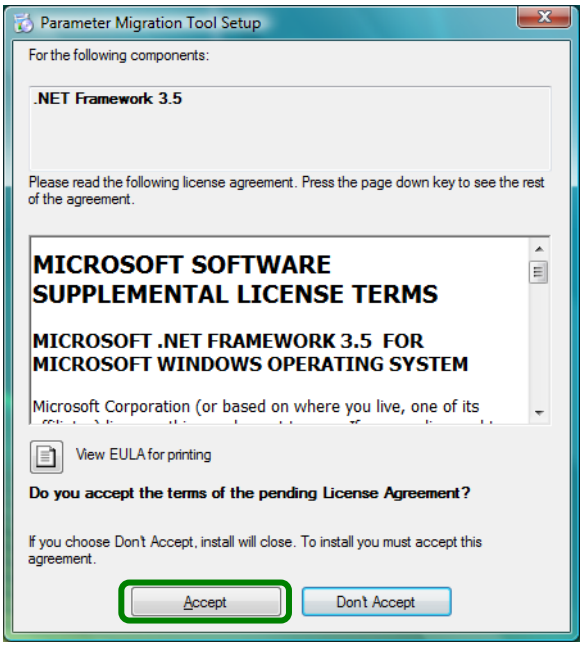
Click the [Parameter Migration Tool] button on the Hybrid Recorder Software Install Menu screen.



(3) Accept the license terms (If .NET Framework 3.5 is already installed, go to step (4))

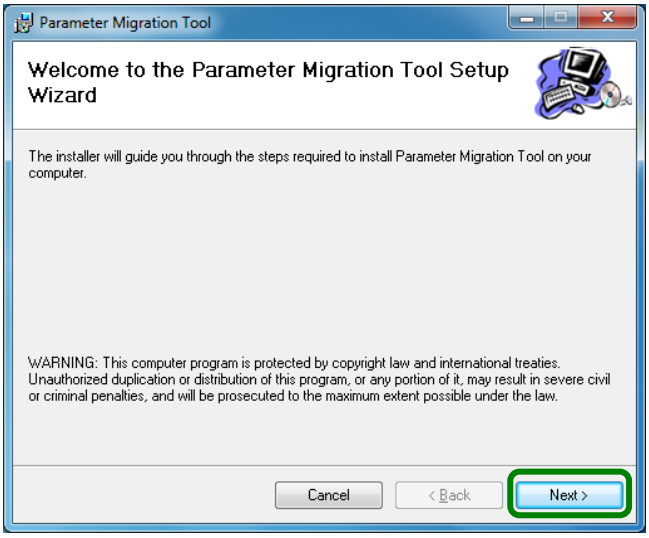
When the Microsoft Software Supplemental License Terms (.NET Framework 3.5) is displayed, read the contents carefully.
If you accept them, click the [Accept] button. This will start the installation of .NET Framework 3.5 (this process may take several minutes).
If you click the [Don't Accept] button, you cannot use this software.

* The license terms may not be displayed when .NET Framework 3.5 is already installed.



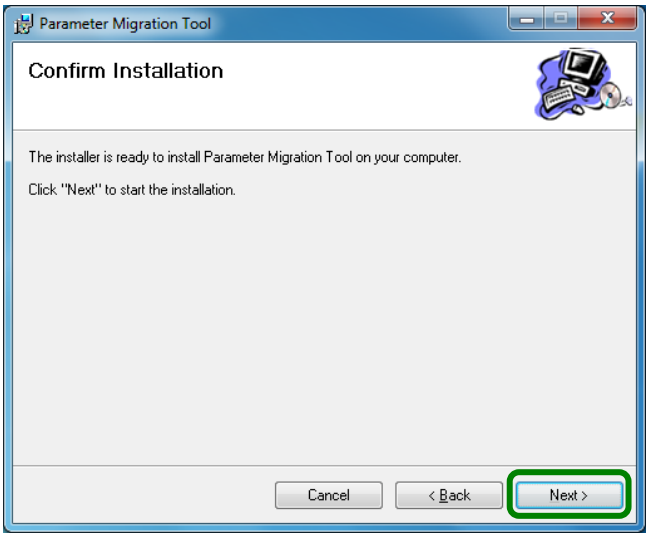
(4) Click the [Next] button

The Parameter Migration Tool Setup Wizard screen appears. Click the [Next] button.



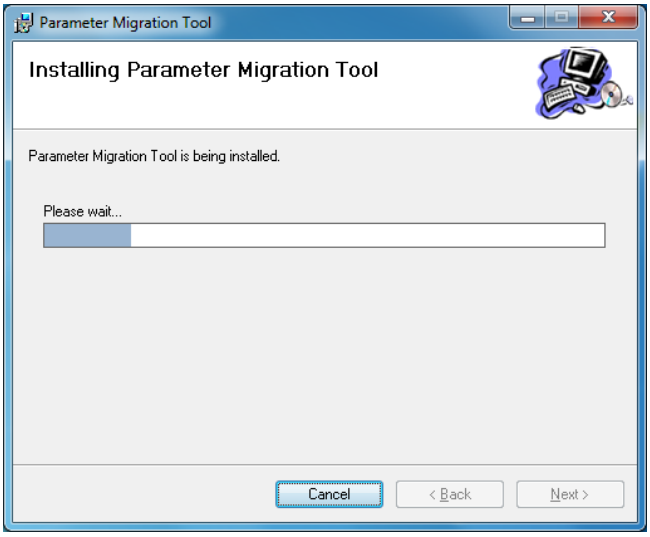
(5) Click the [Next] button

On the Confirm Installation screen, click the [Next] button.



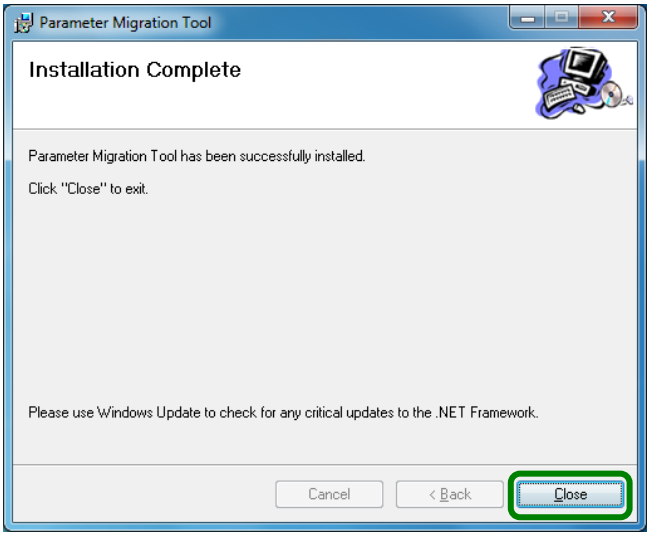
(6) Start the installation

The installation is started. The screen indicating the progress of installation appears. Wait until the installation is completed.



(7) Complete the installation

The installation complete screen appears. Click the [Close] button to finish.



7-3-2. Installation at Upgrade

The parameter switching tool is sometimes upgraded to add newly supported instruments or to fix issues. Use the following procedure for version upgrade.

<Procedure>

(1) Uninstall the current version (refer to section 7-4).

(2) Install the new version (refer to section 7-3-1).

Remarks **About uninstallation for version upgrade**

- The uninstallation should be done from the [Program and Features] dialog box in Windows as described in "7-4. Uninstallation".
  You cannot complete the uninstallation by simply deleting the files (moving them to the "Recycle Bin").
- Do not delete the folder during an uninstallation for version upgrade.

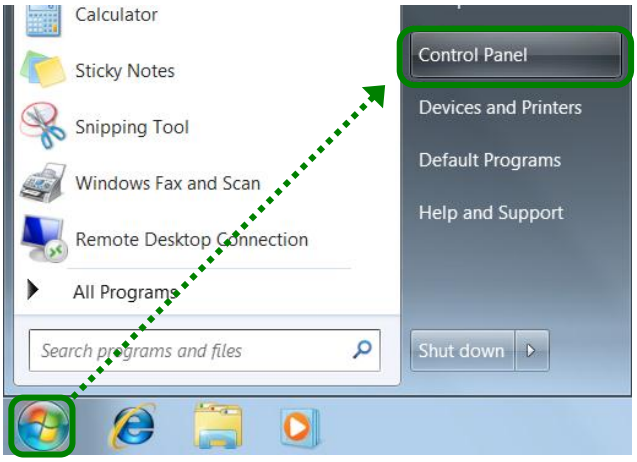
7-4. Uninstallation

This section describes how to delete the parameter switching tool from the hard disk.
Exit all programs related to the parameter switching tool before starting the uninstallation.

<Procedure>

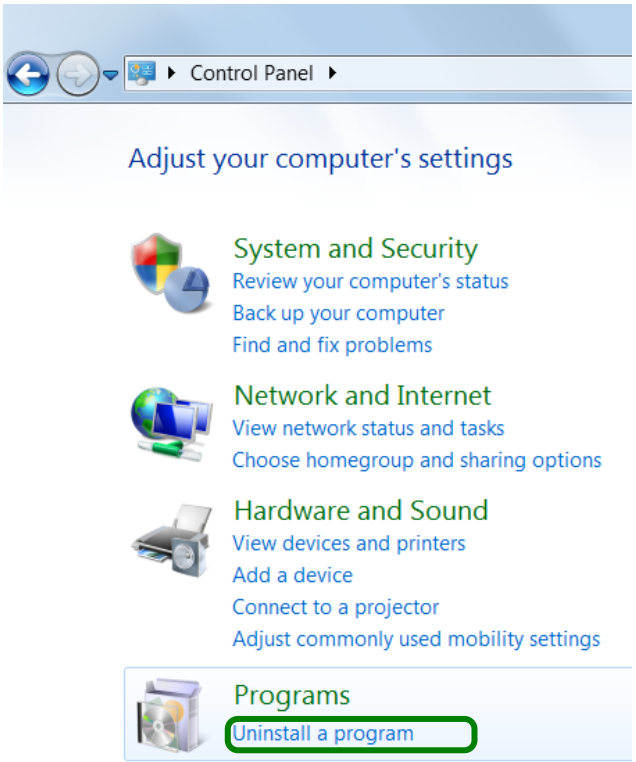
(1) Open the Control Panel

Click [Start] → [Control Panel].



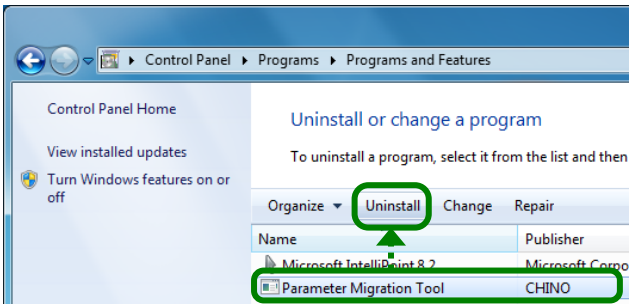
(2) Click [Uninstall a program]

When the Control Panel is displayed, click [Uninstall a program].



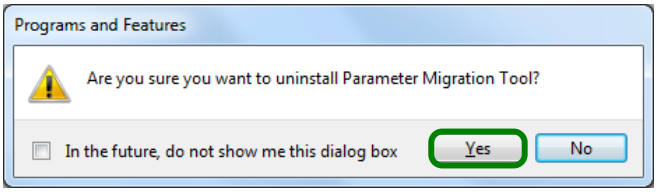
(3) Delete [Parameter Migration Tool]

Select [Parameter Migration Tool] from the list displayed in [Uninstall or change a program], and then click [Uninstall].



(4) Click [Yes]

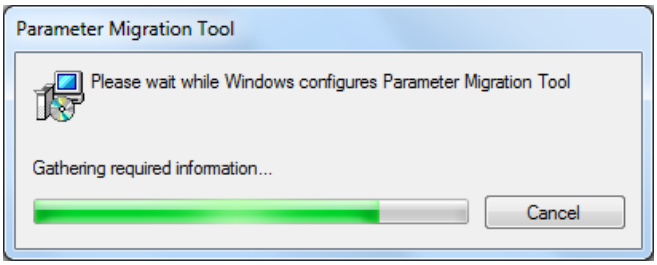
On the Program and Feature screen, click [Yes].



(5) Start uninstallation

The uninstallation is started. The screen indicating the progress of uninstallation appears. Wait until the uninstallation is completed. When the uninstallation is completed, the screen shown right is closed automatically.

* At this point, the folder related to the software still remains. To completely delete the software, delete the installation folder "ParameterMigration" using the Windows Explorer. The location of the folder is shown in the table below.



[Location of the folder related to the software]

OS	Location of folder
Windows XP	C:¥Documents and Settings¥[user name]¥Application Data¥CHINO¥ParameterMigration¥
Windows Vista, Windows 7	C:¥Users¥[user name]¥AppData¥Roaming¥CHINO¥ParameterMigration¥

Remarks **About uninstallation for version upgrade**

- You cannot complete the uninstallation by simply deleting the files (moving them to the "Recycle Bin").
- Do not delete the folder during an uninstallation for version upgrade.

7-5. Startup and Exit of Switching Tool

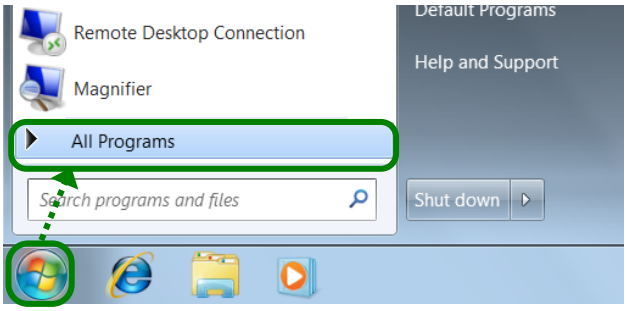
7-5-1. Startup

This section describes how to start the parameter switching tool.

<Procedure>

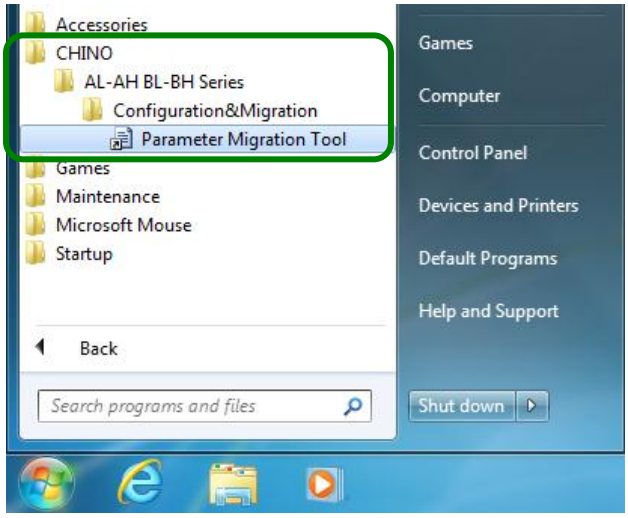
(1) Display all programs

Click [Start] → [All Programs].



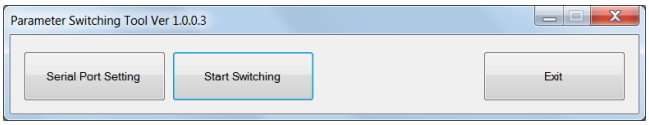
(2) Click [Parameter Migration Tool]

Next, click [CHINO] → [Configuration&Migration] → [Parameter Migration Tool] to start the software.



(3) Open the Parameter Switching Tool screen

The Parameter Switching Tool screen appears. Perform the switching operation (refer to section 7-6).



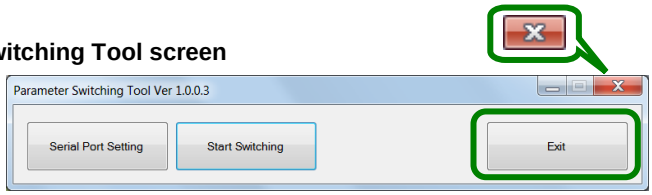
7-5-2. Exit

This section describes how to exit the parameter switching tool.

<Procedure>

(1) Click the [Exit] or [×] button on the Parameter Switching Tool screen

Click the [Exit] or [×] button on the Parameter Switching Tool screen to exit the parameter switching tool.



7-6. How to Operate

7-6-1. Parameter Reading from Old Model Instrument

<Procedure>

(1) Match the communication setting in PC and old model instrument

Confirm that the PC is connected to the old model instrument with engineering cable, and then check the communication setting of the old model instrument.

- **For AL3000/AH3000**
  Switch the communication setting of the instrument to COM.

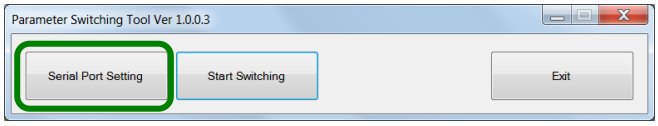
- **For old BL/old BH**
  Skip this operation.

(2) Start the parameter switching tool

When you start the parameter switching tool, the Parameter Switching Tool screen appears (refer to section 7-5-1).

(3) Click the [Serial Port Setting] button

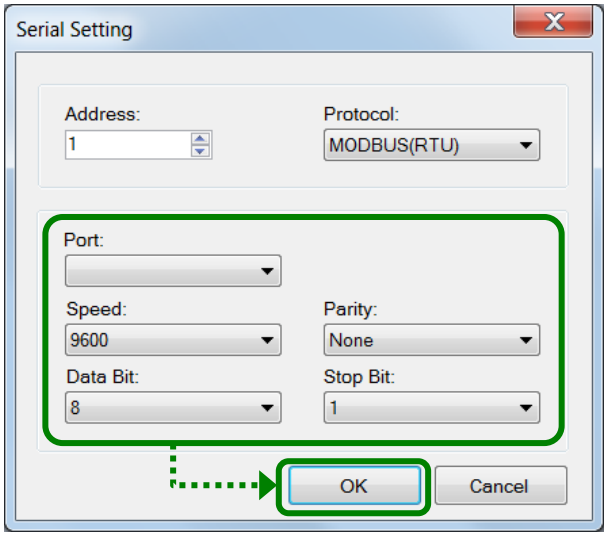
Click the [Serial Port Setting] button on the Parameter Switching Tool screen.



(4) Configure the serial port setting

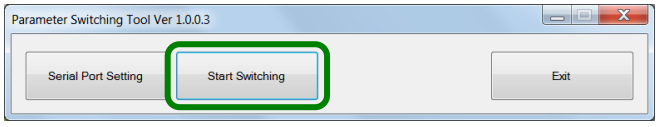
When the Serial Port Setting screen appears, select the port of the connected old model instrument in [Port].
Confirm that [Speed], [Data Bit], [Parity], and [Stop Bit] are set as shown in the table below, and then click the [OK] button.

Programming parameter	Setting value
Speed	9600
Data bit	8
Parity	None
Stop Bit	1



(5) Click the [Start Switching] button

Click the [Start Switching] button on the Parameter Switching Tool screen.

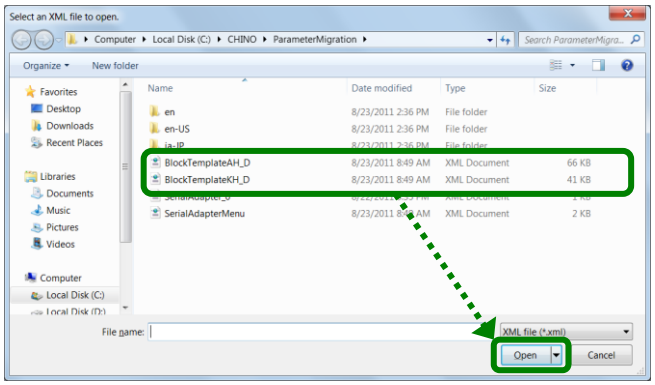


(6) Specify the files

When the message "Select an XML file to open" is displayed, select a file below depending on the connected instrument, and then click the [Open] button.

- **When the connected instrument is AL3000/AH3000**
  File name: BlockTemplateAH_D.xml

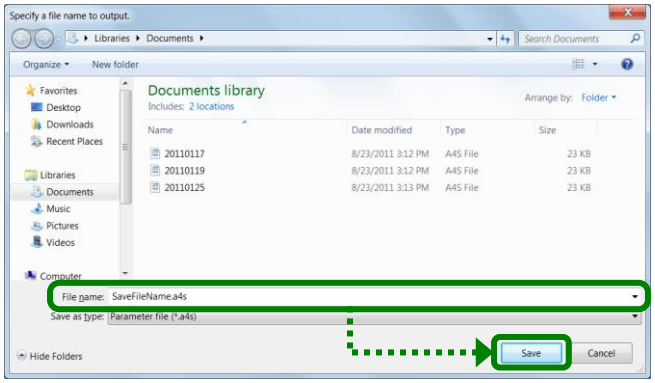
- **When the connected instrument is old BL/old BH**
  File name: BlockTemplateKH_D.xml



(7) Save with a name

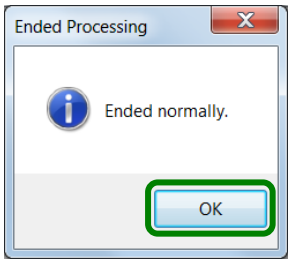
When the message "Specify a file name to output" is displayed, enter the file name in [File Name], and then click the [Save] button.

* The destination is set to "My Documents" by default when the screen shown on the right figure is displayed.



(8) Click the [OK] button

The Ended Processing screen is displayed, click the [OK] button.



(9) Exit the switching tool

Click the [Exit] or [×] button on the Parameter Switching Tool screen to exit the parameter switching tool (refer to section 7-5-2).

7-6-2. Parameter Writing to New Model Instrument

<Procedure>

(1) Start the parameter setting software

When you start the parameter setting software, the Parameter Setting Menu screen is displayed (refer to section 5-1).

(2) Select online or offline (new)

Specify whether to write the read parameters online or offline (new) after confirming and editing them in the parameter setting software.

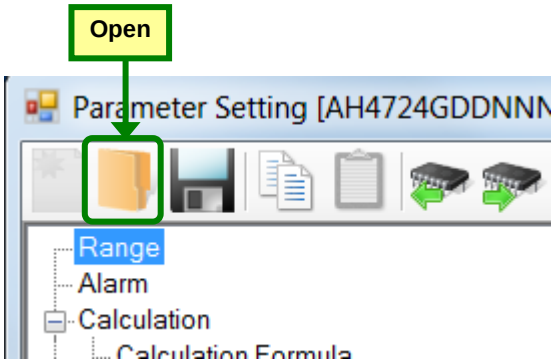
* Select [Online] or [Offline (New)], considering the range of values that can be handled by the parameter setting software (refer to section 4).

- **To write online after confirmation**
  Confirm that the PC is connected to the new model instrument with engineering cable, and then select [Online] (refer to section 6-2-1).
- **To save as a new file after confirmation to write using SD card**
  Select [Offline (New)] (refer to section 6-2-3).
  * Do not use the [Offline (File)] option.

(3) Get the parameters to switch

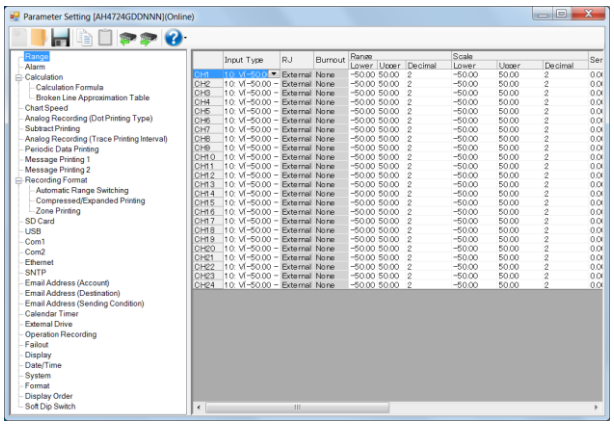
Display the parameters read from the old model instrument. Click the [Open] button from the tool bar on the Parameter Setting screen to open the file containing the read parameters (refer to section 6-6).

* If you forget the destination file, check the [My Documents] folder.



(4) Confirm/Edit in the Parameter Setting screen

On the Parameter Setting screen, the switched parameters are displayed. Confirm and edit the switched parameters (refer to section 6).

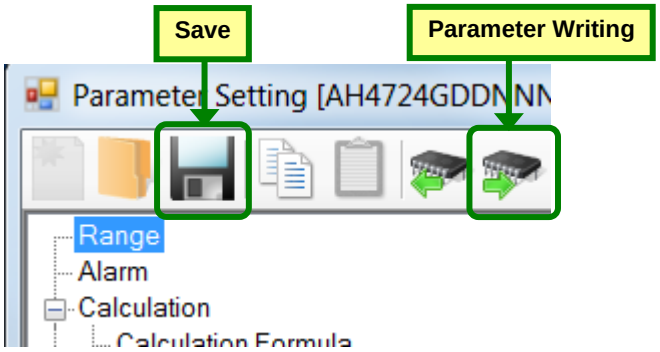


Remarks **Confirmation of the switched file**

The switching tool cannot convert some parameters (refer to section 7-7). After switching the parameters, be sure to open the switched file in the setting software to confirm and edit the parameters.

(5) Store and write setting parameters

Store the parameter setting parameters that you confirmed and edited to a file or write them to the new instrument (refer to section 6-6).
From the tool bar of the Parameter Setting screen, click the [Save] button to save the parameters to a file, or the [Parameter Writing] button to write to a new instrument (refer to section 4).



(6) Exit the setting software

Close the Parameter Setting screen, then close the Parameter Setting Menu screen (refer to section 5-2).

7-7. Parameter Switching

This section presents the parameters that can be switched from an old model to a new model instrument.

7-7-1. Switchable Parameter Types

The table below shows the switchable parameter types.

[Switchable Parameter List]

Old model instrument (AL3000/AH3000, old BL/old BH)		Switching	New model instrument (AL4000/AH4000, KL4000/KH4000)	
Category	Parameter		Category	Parameter
Range setting	Range number, Range setting ON/OFF		Range	Input Type
Range setting	Range setting ON/OFF		Range	RJ
Range setting	Range setting value MIN		Range	Scale Minimum
Range setting	Range setting value MAX		Range	Scale Maximum
Range setting	Range setting value MIN, Range setting value MAX		Range	Range Decimal Location
Burnout	Burnout setting data		Range	Burnout
Scale setting	Scale setting value MIN		Range	Scale Lower Limit
Scale setting	Scale setting value MAX		Range	Scale Upper Limit
Scale setting	Scale setting value MIN, Scale setting value MAX		Range	Scale Decimal Location
Unit setting	Unit setting value		Range	Unit
Tag setting	Tag setting value		Range	Tag
(None)	(None) * 1		Range	Chart Recording Lower Limit * 1
(None)	(None) * 1		Range	Chart Recording Upper Limit * 1
(None)	(None) * 1		Range	Chart Recording Decimal Location * 1
Alarm settings	alarm type		Alarm (each CH)	Type
Alarm settings	Alarm judgment value		Alarm (each CH)	Alarm Value
Alarm settings	For optional alarm		Alarm (each CH)	Comparison CH
Alarm settings	For optional alarm		Alarm (each CH)	Rate-of-Change Standard Time (sec.)
Alarm settings	Alarm output relay number		Alarm (each CH)	Output No.
Alarm settings	Alarm output type		Alarm (each CH)	Output Mode
Chart setting	Speed setting value		Chart Speed	Chart Speed 1
Chart setting	Speed setting value		Chart Speed	Chart Speed 2
Chart setting	Speed setting value		Chart Speed	Chart Speed 3

* 1: The upper/lower limit values and decimal point position of chart recording will be converted to appropriate scale setting values depending on the input type.

7-7-2. Input Type Switching

Input types are handled as follows because they are different between new and old model instruments:

- If the input type number and input range* are the same between the new and old model instruments, the input type is switched without any change.
- If the input type is the same but the input range* is different between the new and old model instruments, the input type is converted to an input type that fits to that input range* (marked as "* 1" in the table below). However, the input range* of the old model instrument is switched without any change.
- Input types that exist in the old model instrument but not in the new model instrument are converted to "Unused" (marked as "* 2" in the table below). Set these input types in the parameter setting software.

*Input range: The upper/lower limit values and decimal point position of the scale and range.

Remarks **Confirmation of the switched file**

After switching the parameters, be sure to open the switched file in the setting software to confirm and edit the parameters.

The following tables show the mapping between input types.

[Input Type Mapping List for AL/AH]

Old model instrument (AL3000/AH3000) Input Type	Switching	Input Type (AL4000/AH4000) Input Type
-		Unused
1.mV:-13.80 to 13.80mV		01:mV (-13.80 to 13.80)
2.mV:-27.60 to 27.60mV		02:mV (-27.60 to 27.60)
3.mV:-69.00 to 69.00mV		03:mV (-69.00 to 69.00)
4.mV:-200.0 to 200.0mV		04:mV (-200.0 to 200.0)
5.mV:-500.0 to 500.mV		05:mV (-500.0 to 500.0)
6.V:-2.00 to 2.00V		06:V (-2.00 to 2.00)
7.V:-5.00 to 5.00V		07:V (-5.00 to 5.00)
8.V:-10.00 to 10.00V		08:V (-10.00 to 10.00)
9.V:-20.00 to 20.00V		09:V (-20.00 to 20.00)
10.V:-50.00 to 50.00V		10:V (-50.00 to 50.00)
13.mV:-6.90 to 6.90mV		13:mV (-6.900 to 6.900) *** 1**
14.mV:-55.00 to 55.00mV		03:mV (-69.00 to 69.00) *** 1**
21.K:-200.0 to 300.0°C		21:K (-200.0 to 300.0)
22.K:-200.0 to 600.0°C		22:K (-200.0 to 600.0)
23.K:-200 to 1370°C		23:K (-200 to 1370)
24.E:-200.0 to 200.0°C		24:E (-200.0 to 200.0)
25.E:-200.0 to 350.0°C		25:E (-200.0 to 350.0)
26.E:-200 to 900°C		26:E (-200 to 900)
27.J:-200.0 to 250.0°C		27:J (-200.0 to 250.0)
28.J:-200.0 to 500.0°C		28:J (-200.0 to 500.0)
29.J:-200 to 1200°C		29:J (-200 to 1200)
30.T:-200.0 to 250.0°C		30:T (-200.0 to 250.0)
31.T:-200.0 to 400.0°C		31:T (-200.0 to 400.0)
32.R:0 to 1200°C		32:R (0 to 1200)
33.R:0 to 1760°C		33:R (0 to 1760)
34.S:0 to 1300°C		34:S (0 to 1300)
35.S:0 to 1760°C		35:S (0 to 1760)
36.B:0 to 1820°C		36:B (0 to 1820)
37.N:-200.0 to 400.0°C		37:N (-200.0 to 400.0)
38.N:-200.0 to 750.0°C		38:N (-200.0 to 750.0)
39.N:-200 to 1300°C		39:N (-200 to 1300)
40.W-WRe0-26:0 to 2315°C		40:W-WRe26 (0 to 2315)
41.WRe5-WRe26:0 to 2315°C		41:WRe5-WRe26 (0 to 2315)
42.PR5-20:0 to 2315°C		Unused *** 2**
43.PtRh40-20:0 to 1880°C		43: PtRh40-20 (0 to 1880)

Old model instrument (AL3000/AH3000) Input Type	Switching	Input Type (AL4000/AH4000) Input Type
44.NiMo-Ni:0.0 to 290.0°C		44:NiMo-Ni (0.0 to 290.0)
45.NiMo-Ni:0.0 to 600.0°C		45:NiMo-Ni (0.0 to 600.0)
46.NiMo-Ni:0 to 1310°C		46:NiMo-Ni (0 to 1310)
47.CR-AuFe:0 to 280.0K		47:CR-AuFe (0.0 to 280.0)
48.Platinel2:-100.0 to 350.0°C		Unused *** 2**
49.Platinel2:-100.0 to 650.0°C		Unused *** 2**
50.Platinel2:-100 to 1390°C		Unused *** 2**
51.U:-200.0 to 250.0°C		51:U (-200.0 to 250.0)
52.U:-200.0 to 500.0°C		52:U (-200.0 to 500.0)
53.U:-200.0 to 600.0°C		53:U (-200.0 to 600.0)
54.L:-200.0 to 250.0°C		54:L (-200.0 to 250.0)
55.L:-200.0 to 500.0°C		55:L (-200.0 to 500.0)
56.L:-200 to 900°C		56:L (-200 to 900)
60.K:-140.0 to 160.0°C		21:K (-200.0 to 300.0) *** 1**
61.E:-60.0 to 100.0°C		24:E (-200.0 to 200.0) *** 1**
62.J:-90.0 to 120.0°C		27:J (-200.0 to 250.0) *** 1**
63.T:-150.0 to 150.0°C		63:T (-150.0 to 150.0)
64.N:-200.0 to 200.0°C		64:N (-200.0 to 200.0)
70.Pt100:-140.0 to 150.0°C		70:Pt100 (-140.0 to 150.0)
71.Pt100:-200.0 to 300.0°C		71:Pt100 (-200.0 to 300.0)
72.Pt100:-200.0 to 850.0°C		72:Pt100 (-200.0 to 850.0)
73.oPt100:-140.0 to 150.0°C		73:oPt100 (-140.0 to 150.0)
74.oPt100:-200.0 to 300.0°C		74:oPt100 (-200.0 to 300.0)
75.oPt100:-200.0 to 649.0°C		75:oPt100 (-200.0 to 649.0)
76.JPt100:-140.0 to 150.0°C		76:JPt100 (-140.0 to 150.0)
77.JPt100:-200.0 to 300.0°C		77:JPt100 (-200.0 to 300.0)
78.JPt100:-200.0 to 649.0°C		78:JPt100 (-200.0 to 649.0)
79.Pt50:-200.0 to 649.0°C		79:Pt50 (-200.0 to 649.0)
80.Pt-Co:4.0 to 374.0K		80:Pt-Co (4.0 to 374.0)
83.Pt100:-50.0 to 60.0°C		70:Pt100 (-140.0 to 150.0) *** 1**
84.Pt100:-200.0 to 650.0°C		72:Pt100 (-200.0 to 850.0) *** 1**
85.oPt100:-50.0 to 60.0°C		73:oPt100 (-140.0 to 150.0) *** 1**
86.JPt100:-50.0 to 60.0°C		76:JPt100 (-140.0 to 150.0) *** 1**
89.Cu53:0.0 to 200.0°C		Unused *** 2**
90.VIRTIS:1000 to 0MT		Unused *** 2**

[Input Type Mapping List for BL/BH]

Old model instrument (Old BL/old BH) Input Type	Switching	Input Type (KL4000/KH4000) Input Type	
1.mV:-7 to 7mV		01:mV (-13.80 to 13.80)	
2.mV:-14 to 14mV		02:mV (-27.60 to 27.60)	
3.mV:-25 to 25mV		02:mV (-27.60 to 27.60)	
4.mV:-70 to 70mV		Unused	*** 2**
5.V:-5 to 5V		Unused	*** 2**
10.K:-200 to 150°C		21:K (-200.0 to 300.0)	*** 1**
11.K:-200 to 300°C		21:K (-200.0 to 300.0)	*** 1**
12.K:-200 to 600°C		22:K (-200.0 to 600.0)	*** 1**
13.K:-200 to 1370°C		23:K (-200 to 1370)	*** 1**
14.E:-200 to 350°C		25:E (-200.0 to 350.0)	*** 1**
15.E:-200 to 900°C		26:E (-200 to 900)	*** 1**
16.J:-200 to 400°C		28:J (-200.0 to 500.0)	*** 1**
17.J:-200 to 1200°C		29:J (-200 to 1200)	*** 1**
18.T:-200 to 150°C		30:T (-200.0 to 250.0)	*** 1**
19.T:-200 to 250°C		30:T (-200.0 to 250.0)	*** 1**
20.T:-200 to 400°C		31:T (-200.0 to 400.0)	*** 1**
21.R:0 to 1760°C		33:R (0 to 1760)	*** 1**
22.S:0 to 1760°C		35:S (0 to 1760)	*** 1**
23.B:0 to 1820°C		36:B (0 to 1820)	*** 1**
24.N:0 to 200°C		64:N (-200.0 to 200.0)	*** 1**
25.N:0 to 350°C		37:N (-200.0 to 400.0)	*** 1**
26.N:0 to 700°C		38:N (-200.0 to 750.0)	*** 1**
27.N:0 to 1300°C		39:N (-200 to 1300)	*** 1**
28.W5:0 to 2320°C		Unused	*** 2**
29.W0:0 to 2320°C		Unused	*** 2**
30.PR20-40:0 to 1880°C		43:PtRh40-20 (0 to 1880)	*** 2**

Old model instrument (Old BL/old BH) Input Type	Switching	Input Type (KL4000/KH4000) Input Type	
31.PR5-20:0 to 1800°C		Unused	*** 2**
32.NiNiMo:0 to 1310°C		46:NiMo-Ni (0 to 1310)	*** 1**
33.CR-AuFe:0 to 300K		Unused	*** 2**
34.P:-100 to 150°C		Unused	*** 2**
35.P:-100 to 300°C		Unused	*** 2**
36.P:-100 to 600°C		Unused	*** 2**
37.P:-100 to 1390°C		Unused	*** 2**
38.U:-200 to 150°C		51:U (-200.0 to 250.0)	*** 1**
39.U:-200 to 250°C		51:U (-200.0 to 250.0)	*** 1**
40.U:-200 to 450°C		52:U (-200.0 to 500.0)	*** 1**
41.U:-200 to 600°C		53:U (-200.0 to 600.0)	*** 1**
42.L:-200 to 450°C		55:L (-200.0 to 500.0)	*** 1**
43.L:-200 to 900°C		56:L (-200 to 900)	*** 1**
50.Pt100:-50 to 50°C		69:Pt100 (-50.0 to 50.0)	*** 1**
51.Pt100:-100 to 100°C		81:Pt100 (-100.0 to 100.0)	*** 1**
52.Pt100:-140 to 150°C		70:Pt100 (-140.0 to 150.0)	*** 1**
53.Pt100:-200 to 300°C		71:Pt100 (-200.0 to 300.0)	*** 1**
54.Pt100:-200 to 649°C		84:Pt100 (-200.0 to 649)	*** 1**
55.JPt100:-50 to 50°C		92:JPt100 (-50.0 to 50.0)	*** 1**
56.JPt100:-100 to 100°C		93:JPt100 (-100.0 to 100.0)	*** 1**
57.JPt100:-140 to 150°C		76:JPt100 (-140.0 to 150.0)	*** 1**
58.JPt100:-200 to 300°C		77:JPt100 (-200.0 to 300.0)	*** 1**
59.JPt100:-200 to 649°C		78:JPt100 (-200.0 to 649.0)	*** 1**
60.Pt50:-200 to 649°C		79:Pt50 (-200.0 to 649.0)	*** 1**
61.Pt-Co:4 to 374K		80:Pt-Co (4.0 to 374.0)	*** 1**

8. Glossary

This section describes some terms used in this instruction manual.

No.	Terms	Description
1	parameter	Setting parameter.
2	format	Code representing the instrument model. Example: AH4724GDANNN
3	overflow value	Value indicating that the upper limit of the range is exceeded. It is 32767.
4	communication adapter	Software component used for data transmission and reception.
5	USB driver	Tool, which is installed to a PC in advance, allowing you to perform data communication with an instrument connected to the PC with a USB cable.

9. Troubleshooting

This section describes problems with operations or functions of the software and their possible causes and remedies.

No.	Symptom	Cause/Remedy
1	Installation does not complete correctly.	Confirm that there is enough free hard disk space (refer to section 2-2).
2	The software does not start.	The installation might not be completed correctly. Uninstall and then reinstall the software, and check if the software can be started.
3	Parameters cannot be set.	Check if the format is correct.
4	The parameters of the connected instrument cannot be read.	(1) Check if [Online] is selected in [Select Online/Offline] (refer to section 6-2-3). (2) Check if the wiring is correct (refer to the instruction manual of the instrument). (3) Check if the connection cable breaks. (4) Check if the communication setting is correct (refer to section 6-3, 6-4, and 6-5).
5	Edited parameters cannot be written to the instrument.	(1) Check if the wiring is correct (refer to the instruction manual of the instrument). (2) Check if the connection cable breaks.
6	The software has been operating correctly, but suddenly a malfunction occurs.	Exit the software, and then start it again. * If the software exits due to an unexpected error, unsaved data would not be backed up. Please set it again.
7	A communication error occurs when connecting via USB.	Disconnect the USB cable and then re-connect it.

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