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*Paperless Recorder*

***VGR-B100***

***EXTENDED SECURITY FUNCTION  
PAPERLESS RECORDER & EX.SEC VIEWER  
INSTRUCTION MANUAL***

Thank you for purchasing this RKC product. In order to achieve maximum performance and ensure proper operation of your new instrument, carefully read all the instructions in this manual. Please place the manual in a convenient location for easy reference.

## **NOTICE –Paperless Recorder–**

- This manual assumes that the reader has a fundamental knowledge of the principles of electricity, process control, computer technology and communications.
- The figures, diagrams and numeric values used in this manual are only for purpose of illustration.
- RKC is not responsible for any damage or injury that is caused as a result of using this instrument, instrument failure or indirect damage.
- RKC is not responsible for any damage and/or injury resulting from the use of instruments made by imitating this instrument.
- Periodic maintenance is required for safe and proper operation of this instrument. Some components have a limited service life, or characteristics that change over time.
- Every effort has been made to ensure accuracy of all information contained herein. RKC makes no warranty expressed or implied, with respect to the accuracy of the information. The information in this manual is subject to change without prior notice.
- No portion of this document may be reprinted, modified, copied, transmitted, digitized, stored, processed or retrieved through any mechanical, electronic, optical or other means without prior written approval from RKC.



### **WARNING**

- An external protection device must be installed if failure of this instrument could result in damage to the instrument, equipment or injury to personnel.
- All wiring must be completed before power is turned on to prevent electric shock, fire or damage to instrument and equipment.
- Don't use this product in any method not specification by manufacturer. The protective features of this product may be impaired if it is used in a method not specified in the operation manual.
- This instrument must be used in accordance with the specifications to prevent fire or damage to instrument and equipment.
- This instrument is not intended for use in locations subject to flammable or explosive gases.
- Do not touch high-voltage connections such as power supply terminals, etc. to avoid electric shock.
- Do not use in an environment where there is strong electromagnetic interference. May cause the operation to become unstable.
- RKC is not responsible if this instrument is repaired, modified or disassembled by other than factory-approved personnel. Malfunction can occur and warranty is void under these conditions.

## CAUTION

- This product is intended for use with industrial machines, test and measuring equipment. (It is not designed for use with medical equipment and nuclear energy.)
- This is a Class A instrument. In a domestic environment, this instrument may cause radio interference, in which case the user may be required to take additional measures.
- This instrument is protected from electric shock by reinforced insulation. Provide reinforced insulation between the wire for the input signal and the wires for instrument power supply, source of power and loads.
- Be sure to provide an appropriate surge control circuit respectively for the following:
  - If input/output or signal lines within the building are longer than 30 meters.
  - If input/output or signal lines leave the building, regardless the length.
- This instrument is designed for installation in an enclosed instrumentation panel. All high-voltage connections such as power supply terminals must be enclosed in the instrumentation panel to avoid electric shock by operating personnel.
- All precautions described in this manual should be taken to avoid damage to the instrument or equipment.
- All wiring must be in accordance with local codes and regulations.
- All wiring must be completed before power is turned on to prevent electric shock, instrument failure, or incorrect action.

The power must be turned off before repairing work for input break and output failure including replacement of sensor, contactor or SSR, and all wiring must be completed before power is turned on again.
- To prevent instrument damage or failure, protect the power line and the input/output lines from high currents with a protection device such as fuse, circuit breaker, etc.
- Prevent metal fragments or lead wire scraps from falling inside instrument case to avoid electric shock, fire or malfunction.
- Tighten each terminal screw to the specified torque found in the manual to avoid electric shock, fire or malfunction.
- For proper operation of this instrument, provide adequate ventilation for heat dispensation.
- Do not connect wires to unused terminals as this will interfere with proper operation of the instrument.
- Turn off the power supply before cleaning the instrument.
- Do not use a volatile solvent such as paint thinner to clean the instrument. Deformation or discoloration will occur. Use a soft, dry cloth to remove stains from the instrument.
- To avoid damage to instrument display, do not rub with an abrasive material or push front panel with a hard object.
- This instrument is intended to be used under the following environmental conditions.

Installation features:	Indoor
Altitude:	2000 m or less
Ambient temperature:	0-50 °C
Ambient humidity:	20-80 %RH (Non-condensing)
Overvoltage category:	Category II
Allowable pollution degree:	Pollution degree 2
- Power module that is used in the instruments conform to EN60950-1/A12: 2011.

- When installing this instrument, put on a protective gear such as safety shoes, helmet, etc. for your safety.
- Do not put your foot on the installed instrument or get on it, because it is dangerous.
- Only our serviceman or persons authorized by RKC are allowed to remove and take the inner module, the main unit and printed circuit boards apart.
- In case of damage or failure, contacting serviceman of our company, instruments should be against unintended operation.

## FOR PROPER DISPOSAL

When disposing of each part used for this instrument, always follows the procedure for disposing of industrial wastes stipulated by the respective local community.

## SYMBOLS USED ON THE INSTRUMENT

The symbols below are used on this instrument for the cautioning information.



This shows "Caution for handling".  
This symbol is used on the parts need to reference the instruction manual for saving human body and the instrument.



This shows "Protective grounding".  
Be sure to provide protective grounding prior to operate this instrument.



This shows "Risk of electric shock".  
This symbol is used on the parts, which has a risk of electric shock.

## **NOTICE –Ex.Sec Viewer–**

- This manual assumes that the reader has a fundamental knowledge of the principles of electricity, process control, computer technology and communications.
- The figures, diagrams and numeric values used in this manual are only for purpose of illustration.
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- RKC is not responsible for any damage and/or injury resulting from the use of the product made by imitating this product.
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- If the specifications of the software do not correspond with the contents of this document, the software specifications have priority.
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- Modbus is a registered trademark of Schneider Electric.
- Windows is registered trademarks of Microsoft Corporation.
- Company names and product names used in this manual are the trademarks or registered trademarks of the respective companies.

## <CONTENTS>

<b>1. INTRODUCTION .....</b>	<b>1-1</b>
1.1 Outline .....	1-1
1.2 Other operation manual .....	1-2
1.3 Accessory check .....	1-2
1.4 Handling SD card .....	1-3
<b>2. EXTENDED SECURITY FUNCTION.....</b>	<b>2-1</b>
2.1 Overview .....	2-1
2.2 Access restriction function .....	2-2
2.3 Audit trail .....	2-4
2.4 Electronic signature function .....	2-4
2.5 Signature data output function .....	2-5
2.6 Data falsification/corruption detection function.....	2-5
<b>3. Operation.....</b>	<b>3-1</b>
3.1 Operation procedure .....	3-1
3.1.1 Initial settings of recorder .....	3-1
3.1.2 Initial settings of Ex.Sec Viewer .....	3-2
3.1.3 Normal operation of recorder.....	3-3
3.1.4 Operation procedure in Ex.Sec Viewer .....	3-4
3.2 Operational precautions .....	3-5
3.2.1 Recorder.....	3-5
3.2.2 Ex.Sec Viewer .....	3-5
<b>4. Recorder .....</b>	<b>4-1</b>
4.1 Overview .....	4-1
4.2 Operation .....	4-3
4.2.1 Enabling the extended security function .....	4-3
4.2.2 Login (when logout).....	4-6
4.2.3 Logout .....	4-8
4.2.4 Register users with operation restrictions.....	4-9
4.2.5 Permit electronic signature of user account.....	4-11
4.2.6 Changing Settings (Example: Changing the Input Type).....	4-12
4.2.7 Start / stop recording (Output measured data to SD card) .....	4-13
4.2.8 Check the audit trail (security log) .....	4-14
4.2.9 Resetting the password (In the case of password expired) .....	4-15
4.2.10 Resetting the password (In the case of password forgot).....	4-16
4.3 Setting/Display .....	4-18
4.3.1 User registration .....	4-18
4.3.2 Security mode .....	4-20
4.3.3 Setting of each parameter .....	4-21
4.3.4 Security Log (Audit trail) .....	4-22
4.4 SD card folder structure .....	4-23
4.5 File .....	4-25
4.5.1 Measurement data file .....	4-25
4.5.2 User information file .....	4-26

4.5.3	Security log file.....	4-26
4.5.4	Parameter log file .....	4-27
4.6	Timing of data writing.....	4-28
<b>5.</b>	<b>Ex.Sec Viewer – OPERATION – .....</b>	<b>5-1</b>
5.1	Overview.....	5-1
5.1.1	Introduction.....	5-1
5.1.2	About Ex.Sec Viewer.....	5-1
5.1.3	Recommended operating environment .....	5-1
5.1.4	Installation .....	5-1
5.1.5	Uninstallation.....	5-3
5.1.6	About authentication-key .....	5-4
5.2	Operation.....	5-5
5.2.1	Start Ex.Sec Viewer .....	5-5
5.2.2	Get record data to PC .....	5-6
5.2.3	Check and sign the recorded data.....	5-9
5.2.4	Check and print the audit trail (security log) .....	5-13
5.2.5	Printing signed record data.....	5-15
5.2.6	Display and print the report (It supports since Ver.2.10) .....	5-19
5.2.7	Display and print the Max. /Min. /Ave. for a specified period (For Ver. 2.10 or later) .....	5-22
5.2.8	Register and edit batch information of recorded data.....	5-24
5.2.9	Migrate the signed record data to another PC.....	5-25
5.3	Setting/Display .....	5-27
5.3.1	Basic display .....	5-27
5.3.2	Extended security data list display .....	5-28
5.3.3	Login authentication .....	5-36
5.3.4	Trend display.....	5-37
5.3.5	Signature .....	5-38
5.3.6	Security log display .....	5-40
5.3.7	Display and operation in each state of the recorded data .....	5-41
5.4	Menu.....	5-43
5.4.1	File .....	5-44
5.4.2	View .....	5-44
5.4.3	Zoom.....	5-45
5.4.4	Event/Comment.....	5-45
5.4.5	Extended security.....	5-45
5.4.6	Language .....	5-46
5.4.7	Window .....	5-46
5.4.8	Help.....	5-46
5.5	Toolbar.....	5-47
<b>6.</b>	<b>Ex.Sec Viewer – CONTROL – .....</b>	<b>6-1</b>
6.1	Basic Layout of Trend Window .....	6-1
6.1.1	Screen Layout .....	6-1
6.1.2	Trend area .....	6-2
6.1.3	Instant Value area .....	6-7
6.1.4	Event Summary area .....	6-8
6.2	Operate the trend screen .....	6-9

6.2.1	View .....	6-9
6.2.2	Zoom.....	6-11
6.2.3	Event/Comment.....	6-13
6.2.4	Max./Min./Ave. (It supports since Ver.2.10).....	6-14
6.3	Print function .....	6-20
6.3.1	Trend print .....	6-20
6.3.2	Instant value print .....	6-24
6.3.3	Security log print .....	6-28
6.3.4	Report print (It supports since Ver.2.10).....	6-30
6.4	File-related Operation .....	6-34
6.4.1	Converting to CSV.....	6-34
6.4.2	Properties.....	6-35
6.5	Option.....	6-36
<b>7.</b>	<b>Troubleshooting.....</b>	<b>7-1</b>

## **Appendix .....Appendix-1**

Appendix 1	Selection List of Permitted Items .....	Appendix -1
Appendix 2	List of Security Logs.....	Appendix -3
Appendix 3	Record Format (ASCII).....	Appendix -6
Appendix 4	Extended security function list for 21 CFR Part 11.....	Appendix -8



# 1.INTRODUCTION

This manual describes the extended security function.

For details about other functions of this device, refer to the manual of the recorder.

## 1.1 Outline

This extended security function achieves high-level security with the following functions added to the VGR-B100 paperless recorder.

In combination with dedicated support software, this function can be used in a variety of applications that require stringent security and electronic signature such as the medicine manufacturing process.

The extended security function has roughly the following five functions. For details, refer to Chapter 2.

- Access restriction function

This function enables user authentication using the password. You can select from two user levels. You can also restrict available functions or periodically prompt the user to change the password by configuring settings.

- Audit trail function

This function saves up to 1,000 records when the user performs each operation or change settings. Up to 50 setting information files (parameter files) can be also saved when settings are changed.

- Electronic signature function

This function supports the electronic signatures of up to three users using dedicated viewer software.

- Signature data output function

This function can be used to print and output signed electronic data.

- Falsification detection function

The function to detect falsification in measurement data prohibits viewing if falsification is found in measurement data or measurement data is corrupted.

### [Notes]

- The following operations cannot be performed when the extended security function is enabled.

1. Modification of each parameter, start/stop of recording, reset of accumulated data, recording of messages, and manual calibration of SNTP using the Modbus communication function.
2. Modification of parameters via network using the parameter loader.
3. Start/stop of recording using the data viewer.
4. Start/stop of recording using the DI function.

## 1.2 Other operation manual

The following manuals are also provided for this device:

Name	Description
<b>VGR-B100 PAPERLESS RECORDER OPERATION MANUAL</b>	Manual that describes other functions than the extended security function.
<b>VGR-B100 PAPERLESS RECORDER COMMUNICATION FUNCTION OPERATION MANUAL</b>	Manual that describes the Modbus communication function.
<b>DATA VIEWER INSTRUCTION MANUAL FOR VGR-B100 PAPERLESS RECORDER</b>	Manual that describes how to check data recorded with this device or support software that enables real-time observation of currently recorded data.
<b>PARAMETER LOADER INSTRUCTION MANUAL FOR VGR-B100 PAPERLESS RECORDER</b>	Manual that describes support software that can be used to check parameters currently set to this device or create and specify parameters.

## 1.3 Accessory check

The accessories shown here are used in relation to the extended security function option. For details about other accessories, refer to the manual of the recorder. In case that there are inappropriate parts, contact your dealer or our sales staff. The following accessories are attached to the extended security function option. Check that these accessories are included.



(1) Authentication-key



(2) CD-ROM  
(Manual and support software)

## 1.4 Handling SD card

Correspondence SD card is as follows.

- Panasonic corporation 1~32GB
- SanDisk corporation 1~32GB

There is no SD card in this equipment. Please buy it in the computer shop etc.



### Caution

- SD card on the market is sold having formatted it usually, therefore, it is not necessary to format it again. Please go with this Recorder when formatting it. When formatting it by the format feature of the personal computer standard, it is likely not to operate correctly.
- Please confirm it is a correct direction and the firm insertion when it installs it. The Recorder cannot recognize the SD card when forcibly inserting it in a wrong direction. Moreover, it causes the breakdown of the SD card and the main body of the Recorder. Please note that the damage of the equipment when it reversely inserts it becomes off the subject of the guarantee.
- Please do not turn off power in recording of the SD card, and do not detach the SD card. Data might damage, and delete it.
- When the SD card breaks, important recorded data is lost. The data preserved on the card recommends the backup to be booked once a month.
- MiniSD and the microSD card cannot be used. The use of miniSD and the microSD card adaptor has the possibility that the card doesn't come off, therefore, please do not use it.

#### ●About removing SD card

Removable operation with the **SD remove** key can't be executed during extended security mode.

During recording, please confirm that SD card writing is not in progress and remove the SD card.

When recording is stopped, you can remove the SD card at any time.

※ Please do not remove the SD card absolutely during the screen display below. The recorded data may be damaged.



- Standard of record

The standard of the record when the SD card of 2GB is used is as follows. Please note that the capacity that can be recorded by the situation of the occurrence of warning and the message is different.

[Condition]

- Number of inputs : 6 point
- Recorded data form : Binary
- Record type : Maximum/minimum value record
- There is no event of the alarm, message etc.

※ The record exceeding the product-life cycle is not guaranteed.

Capacity of SD card	2GB					
File preservation cycle	1 hour			1 day		
Data logging cycle	1 sec	2 sec	5 sec	1 sec	10 sec	1 min
Capacity that can be recorded	1.0 year	1.4 year	1.8 year	1.9 year	14.0 year	33.7 year

## 2.EXTENDED SECURITY FUNCTION

### 2.1 Overview

The extended security function has the following functions:

\* For the "21 CFR Part 11" correspondence list of the extended security function, refer to Appendix 4 "

Extended security function list for 21 CFR Part 11".

No.	Function	Description	Function in the recorder	Ex.Sec Viewer	Reference
1	Access restriction function	You can select from two levels, that is, the administrator account and the user (general) account. In addition, you can restrict operations, setting, and signature of user accounts.	✓	—	<p>To enable the extended security function: → Section 4.2.1, "Enabling the extended security function"</p> <p>To register a user account with operation restriction: → Section 4.2.4, "Registering a user with operation restriction"</p> <p>About the account registration screen → Section 4.3.1, "Registering a user"</p> <p>About the security mode setting screen → Section 4.3.2, "Security mode"</p>
2	Audit trail function	This function automatically stores records on operations such as modification of setting values or start/stop of recording. This function also saves parameters immediately after setting and records them in the parameter log file when you set parameters.	✓	✓ (check only)	<p>To check audit trails on the screen of this device: → Section 4.2.8, "Checking audit trails (security logs)"</p> <p>To check audit trails with support software: → Section 5.2.4, " Check and print the audit trail (security log)"</p> <p>About the security log screen → Section 4.3.4, "Security logs (audit trails)"</p> <p>About the parameter log file → Section 4.5.4, "Parameter log file"</p> <p>About the list of security logs → Appendix 2 "List of Security Logs"</p>

No.	Function	Description	Function in the recorder	Ex.Sec Viewer	Reference
3	Electronic signature function	This function can be used to check and sign data.	—	✓	To sign data: → Section 5.2.3, "Checking and signing record data"
4	Signature data output function	This function can be used to print trends, instantaneous values, and audit trail data which signature data is added to. This function can also output raw (binary) data.	—	✓	To print signed record data: → Section 5.2.5, "Printing signed record data" Section 5.2.6, " " To migrate record data to another PC: → Section 5.2.9, "Migrating signed record data to another PC"
5	Data falsification/corruption detection function	This function detects falsification and corruption in record data and restricts viewing of data.	—	✓	About data corruption indication →Section 5.3.7 " Display and operation in each state of the recorded data"

## 2.2 Access restriction function

### Access restriction function in this device

- This function only allows the accounts that have the operation right to access this device.
- The login operation is always required to perform operations and setting.
- Two account levels (administrator and user) are available.  
Administrator: Can use all the functions in this device.  
User: Can use permitted functions only.
- The total of up to 20 administrator and user accounts can be registered.
- The user name, password, and arbitrary text can be registered as account information.
- The password has an expiration period. You must set a new password at login after the expiration period. The initial expiration period is 365 days.

#### Administrator account



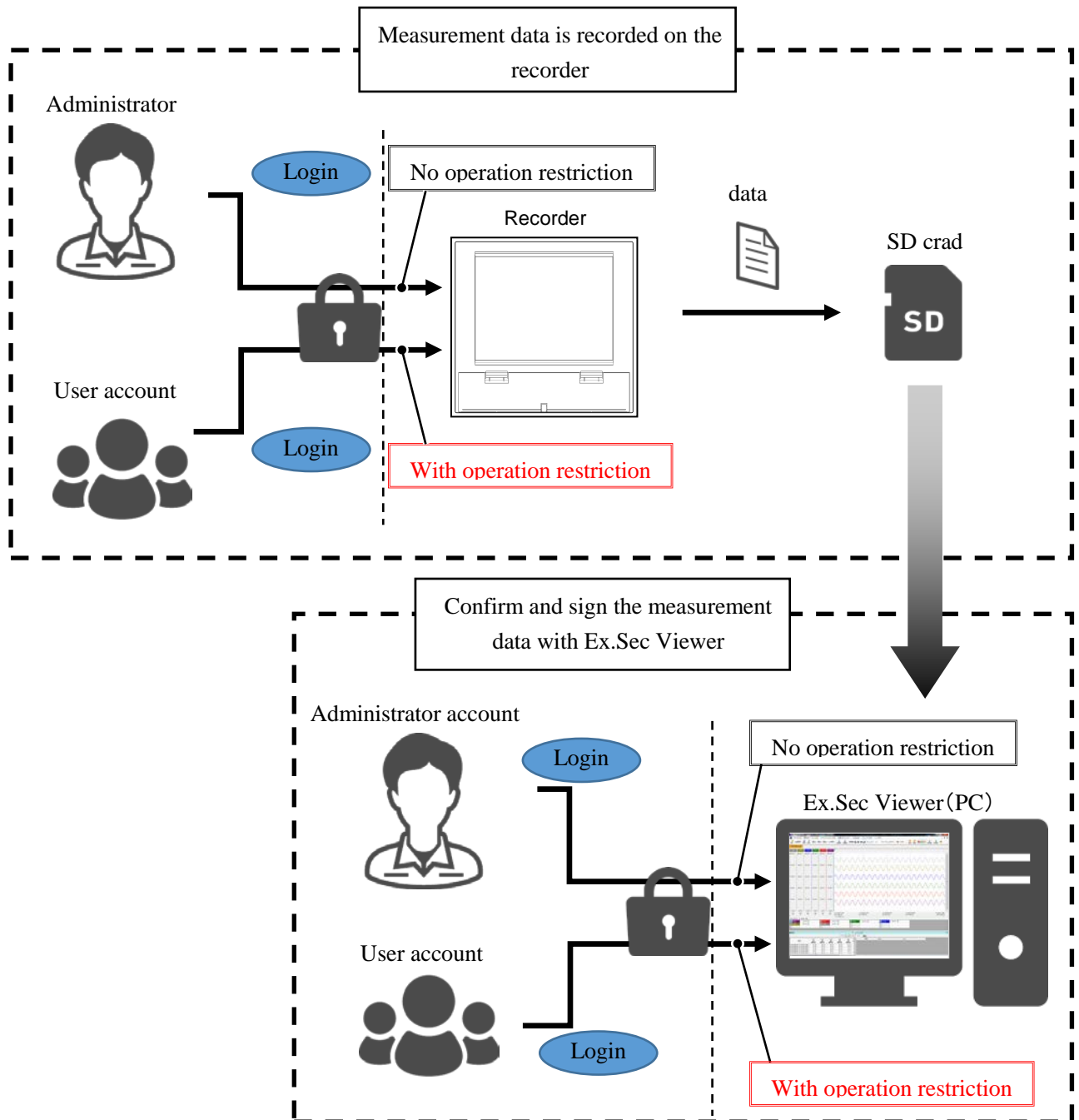
- Can perform all the operations and settings.
- Can arbitrarily set access restrictions to user accounts.
- Can make a signature.

#### User account



- Can only perform the operations and settings permitted by the administrator account.
- Can make a signature only when permitted by the administrator account.

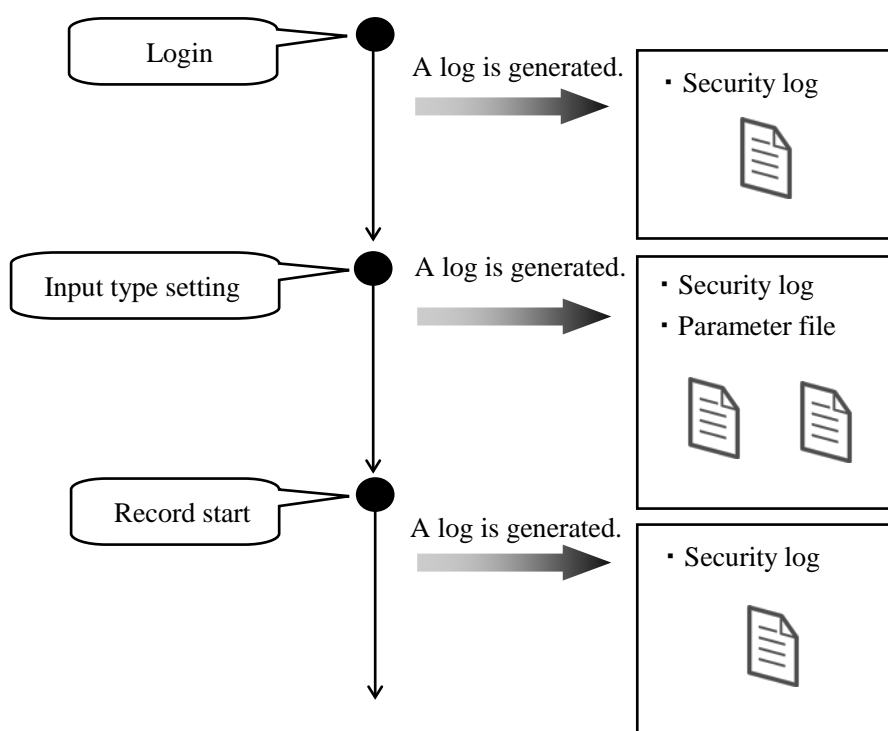
## Access restriction function image



## 2.3 Audit trail

### Audit trail function in this device

- This function automatically logs user operations such as modification of setting values or start/stop of recording as timestamped audit trails. Audit trails are called security logs in this device. Logs are displayed in security logs.
- The recorder records up to 1,000 log records. When the number of log records exceeds 1,000, the oldest log record is overwritten and updated.
- When you change a setting value, the parameter file immediately after change is saved under the file name synchronized with the log number. This allows you to check details of the parameter when the setting is changed. It is possible to check by the log output function. For log output function, refer to the recorder instruction manual.
- Security logs cannot be deleted.



## 2.4 Electronic signature function

### Electronic signature in this device

- This function is used to sign recorded measurement data.
- Up to three users can sign a measurement data item.  
(Arbitrarily assign meanings to signatures and use them.)
- You can sign a measurement data item multiple times with the same account.
- Signatures cannot be canceled.
- Use Ex.Sec Viewer to make a signature. (The recorder cannot be used to make a signature.)



## 2.5 Signature data output function

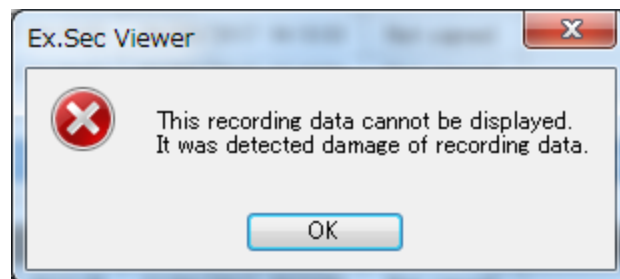
### Signature data output function in this device

- This function is used to print trends, instantaneous values, reports and audit trail data which signature data is added to.
- This function can also output raw (binary) data to migrate it to a new PC or other device. You need Ex.Sec Viewer to view raw data.

## 2.6 Data falsification/corruption detection function

### Data falsification/corruption detection function in this device

- This function prohibits viewing of recorded measurement data that is falsified or corrupted. Because such measurement data cannot be validated, it is not allowed to check or sign the data.

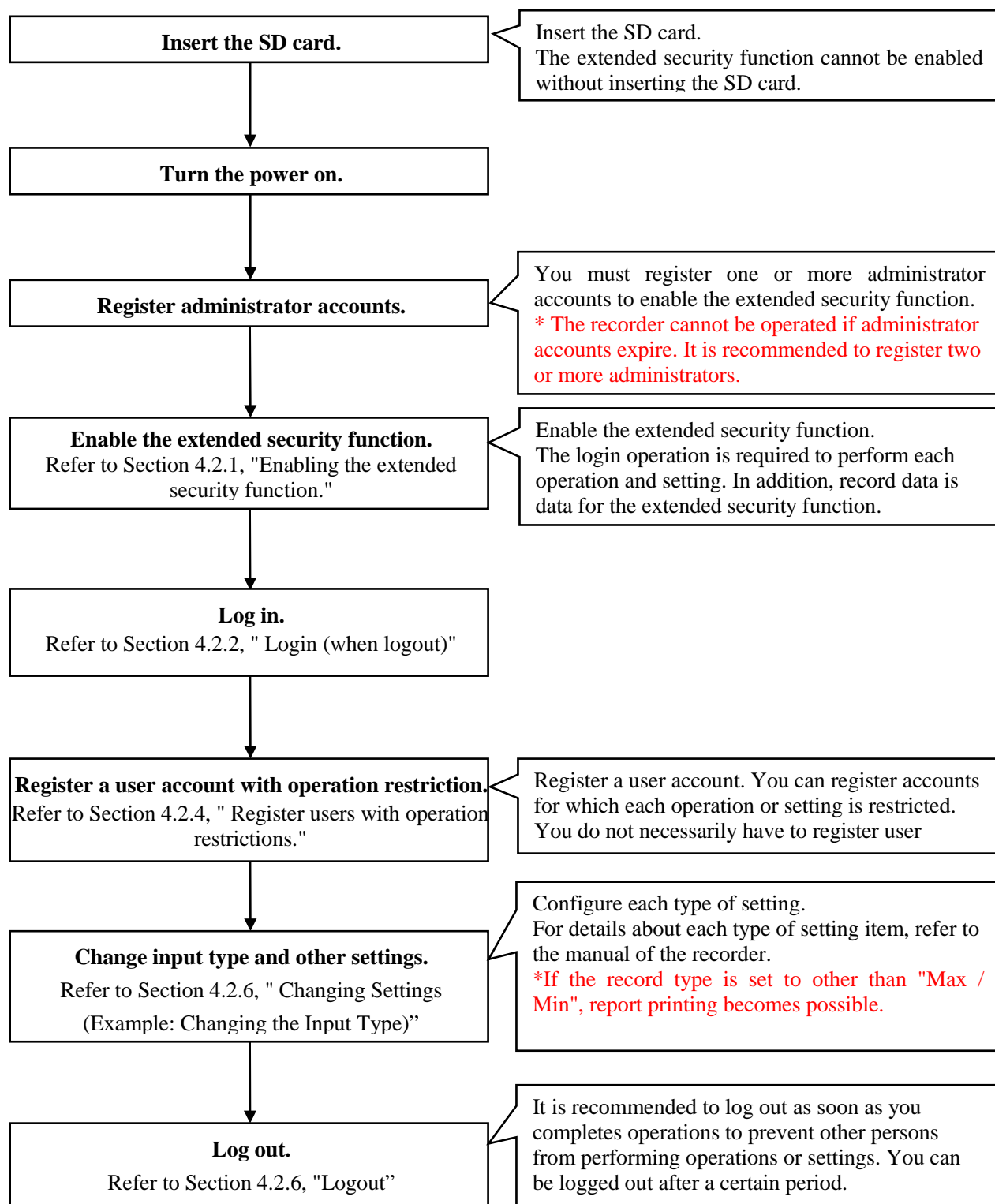


# 3.Operation

## 3.1 Operation procedure

### 3.1.1 Initial settings of recorder

This section describes how to configure initial settings of recorder.



### 3.1.2 Initial settings of Ex.Sec Viewer

This section describes how to configure initial settings of Ex.Sec Viewer.

#### - Installation of support software

You must install support software before using Ex.Sec Viewer.

When you install support software, Data Viewer and Parameter Loader are installed at the same time as Ex.Sec Viewer. For details about installation of support software, refer to Section 5.1.4, "Installation."

\* Note restrictions such as the operating environment of your PC. For details about the operating environment, refer to Section 5.1.3, "Recommended operating environment."

#### - About the authentication-key

You must insert the authentication-key into a USB port to start Ex.sec Viewer. Insert the authentication-key attached as an accessory before starting Ex.sec Viewer.

The authentication-key is recognized in an environment shown in Section 5.1.3, "Recommended operating environment." The LED is always on while the authentication-key is operating. For details about the authentication-key, refer to Section 5.1.6, "About the authentication-key."

#### - Preparation of SD card reader

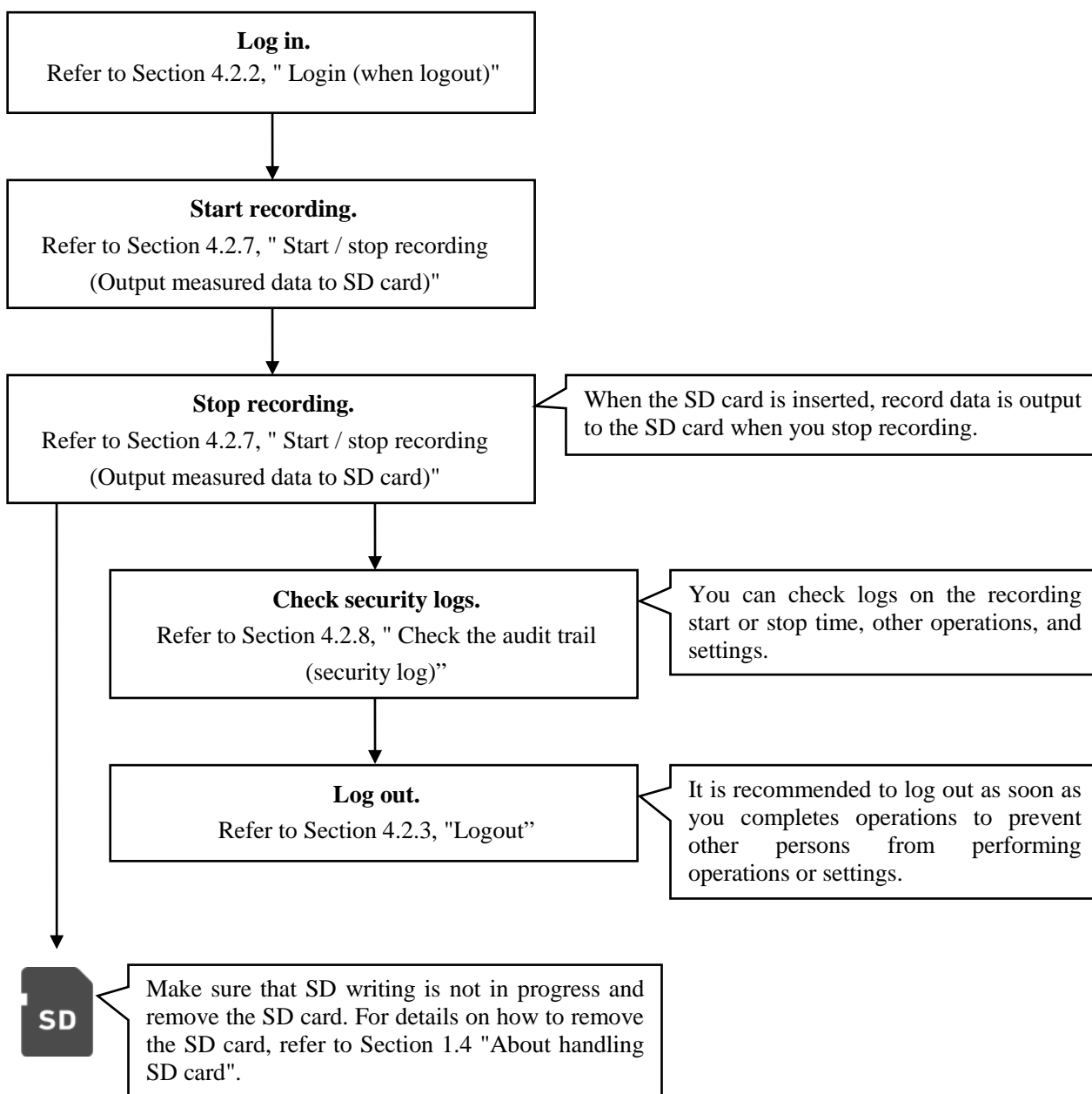
Ex.Sec Viewer can import record data into PCs only from the SD card reader. Therefore, use the PC equipped with an SD card reader or connect an external SD card reader to the PC.

Record data cannot be imported via network.

### 3.1.3 Normal operation of recorder

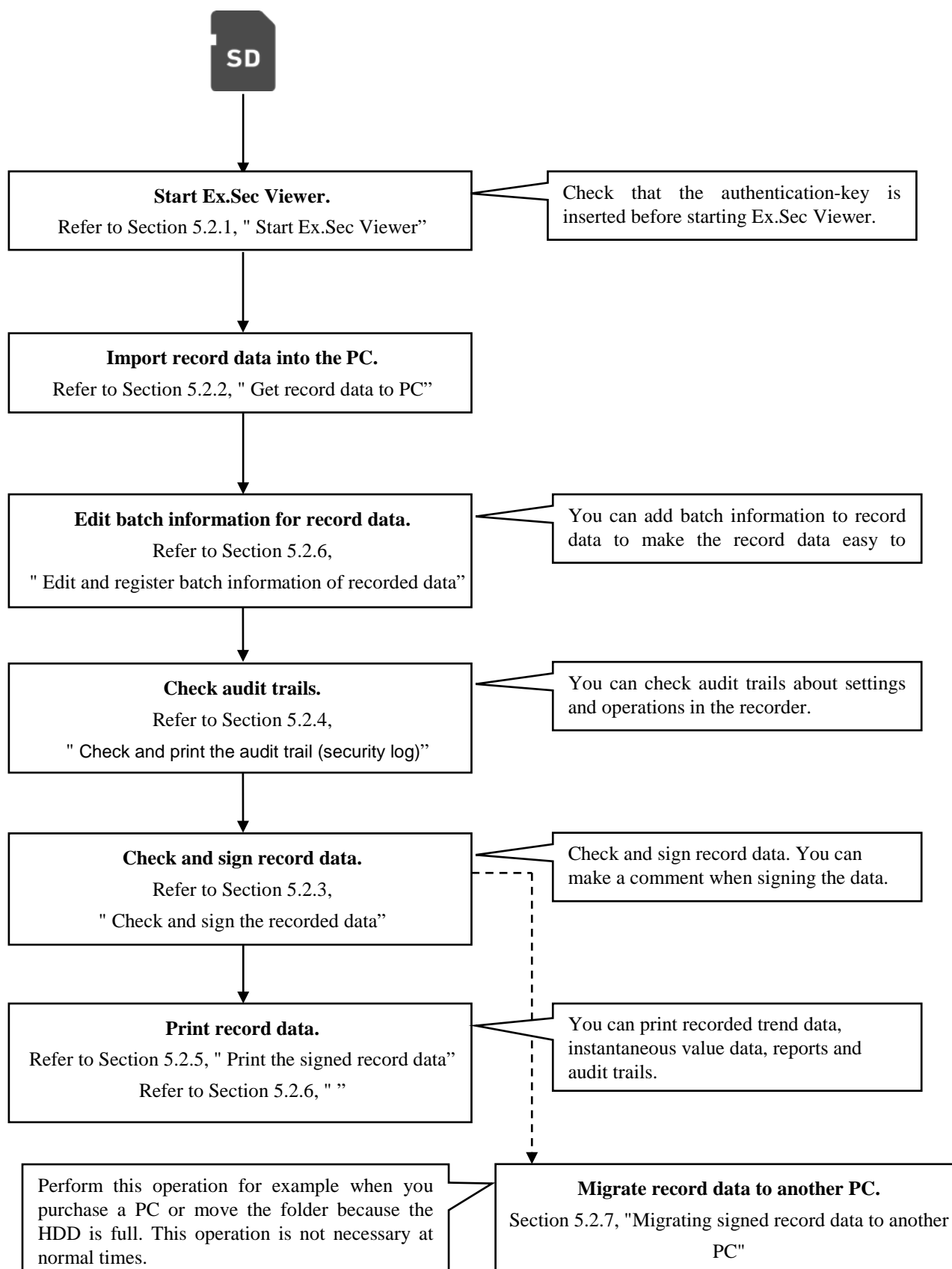
An operation example of setting or operation in the recorder is shown below.

For the timing of data output to the SD card, refer to Section 4.6 "Timing of data writing".



### 3.1.4 Operation procedure in Ex.Sec Viewer

An operation example of setting or operation in Ex.Sec Viewer (support software) is shown below.



## 3.2 Operational precautions

Note the following points during operation.

### 3.2.1 Recorder

- You can start and stop recording only with the "REC" button.
- When the administrator account is expired, the recorder can not be operated. We recommend that you register 2 or more accounts.
- If you set the record type to other than "Max/Min" and record, it is possible to print reports such as daily reports and monthly reports.
  - Please note that the report printing can not be performed for channels with the record type "Max/Min" .
- Please insert the SD card and start recording. Since the overwrite function is turned off in the extended security mode, if recording is performed without inserting an SD card, recording stops when the internal memory capacity becomes full.
- Each parameter in the recorder can be only changed in the recorder.
- Even if it is set to "Binary + CSV" in the recording data format, the CSV file is not output.  
Please use Ex.Sec Viewer when you want to make CSV file
- The following operations cannot be performed when the extended security function is enabled.
  1. Modification of each parameter, start/stop of recording, reset of accumulated data, recording of messages, and manual calibration of SNTP using the Modbus communication function.
  2. Modification of parameters via network using the parameter loader.
  3. Start/stop of recording using the data viewer.
  4. Start/stop of recording using the DI function.
- Safely keep the password used when registering a user. If you lose the password, you can no longer log in.
- Measurement data can be checked only with Ex.Sec Viewer when the extended security function is enabled.
- Measurement data can be checked only with Data Viewer when the extended security function is disabled.

### 3.2.2 Ex.Sec Viewer

- Be sure to export record data before starting migrating it for example when changing the folder or rebuilding the environment (replacing the PC).  
For details about how to export data, refer to Section 5.2.7, "Migrating signed record data to another PC."
- The function to add comments to measurement data in Data Viewer is not provided. (You can make a comment when signing the data.)
- When recording is incomplete (recording in progress or dmt, dst files are less than 50), importing recorded data may affect signature data and so on. For this reason, we recommend that you only import files that have been completely recorded.
- Operation on virtual PC (Hyper-V, VMware etc.) is not guaranteed.

# 4.Recorder

## 4.1 Overview

### - Initial settings

Operation examples related to initial settings are shown below.

No.	Operation	Description	Reference
1	Enabling the extended security function	Setting the extended security function. <b>*You must set up the extended security function before use.</b>	Section 4.2.1, "Enabling the extended security function"
2	Register users with operation restrictions	Register a user account with operation restriction. You can permit or prohibit each setting or operation for user accounts.	Section 4.2.4, "Register users with operation restrictions"
3	Permit electronic signature of user account	You can permit the user account's electronic signature. Note that electronic signatures can be made only in Ex.Sec Viewer (support software).	Section 4.2.5, "Permit electronic signature of user account"
4	Changing Settings (Example: Changing the Input Type)	Change settings. <b>* Report output is possible by setting the record type to other than "Max/Min".</b>	Section 4.2.6, "Changing Settings (Example: Changing the Input Type)"

### - Normal operation

Operation examples during normal operation are shown below.

No.	Operation	Description	Reference
1	Login (when logout)	Perform the login operation.	Section 4.2.2, "Login (when logout)"
2	Logout	Manually perform the logout operation.	Section 4.2.3, "Logout"
3	Start / stop recording (Output measured data to SD card)	Start/stop recording.	Section 4.2.7, "Start / stop recording (Output measured data to SD card)"
4	Check the audit trail (security log)	Check 1 to 1,000 past security logs.	Section 4.2.8, "Check the audit trail (security log)"
5	Resetting the password (In the case of password expired)	Set a new password if the password has expired.	Section 4.2.9, "Resetting the password (In the case of password expired)"
6	Resetting the password (In the case of password forgot)	Action if you forget the password.	Section 4.2.10, "Resetting the password (In the case of password forgot)"

### - Settings and display

You must set the following items in this device to use the extended security function.

No.	Settings and display	Description	Reference
1	User registration	Register an administrator or user account.	Section 4.3.1, "User registration"
2	Security mode	Specify the security mode, how to log out, expiration date of a password, and other items.	Section 4.3.2, "Security mode"
3	Setting of each parameter	Specify the input type as well as display, record, communication, and other settings.	Recorder operation manual
4	Security Log (Audit trail)	Check the display of security logs.	Section 4.3.4, "Security Log (Audit trail)"

## - Files

The following files are recorded and output when extended security is enabled.

\* For the timing of data writing, see Section 4.6 "Timing of data writing".

No.	File	Description	Reference
1	Measurement data file	Main and sub record measurement files.	Section 4.5.1, "Measurement data file"
2	User information file	File that contains registered user information.	Section 4.5.2, "User information file"
3	Security log file	Operation log automatically recorded when you perform some setting or operation. 1,000 past security logs are internally recorded.	Section 4.5.3, "Security log file"
4	Parameter log file	Parameter file automatically recorded when you set parameters. 50 past parameter files are internally recorded.	Section 4.5.4, "Parameter log file"



## 4.2 Operation

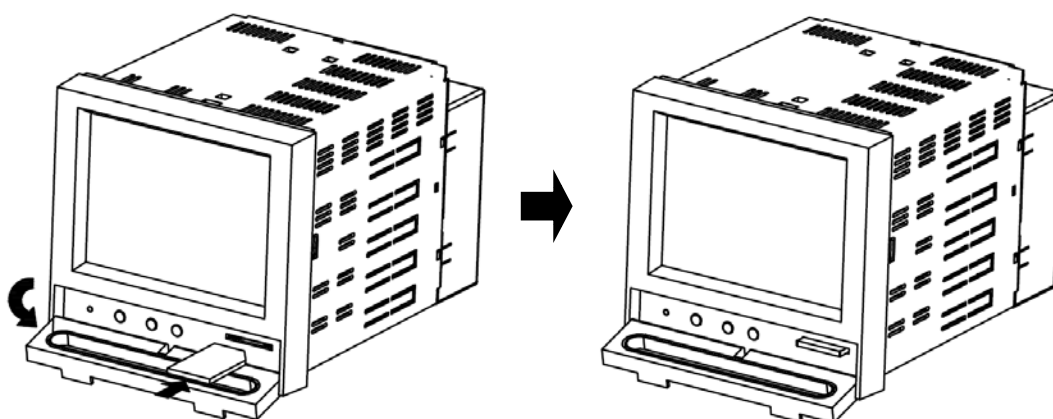
### 4.2.1 Enabling the extended security function

This setting is only required for the first time.

It is recommended to register two or more administrator accounts. When two administrator accounts are registered, you can reset the password in case you lose it.

#### Step 1: Inserting the SD card

Open the cover of the button operation section. Press the SD card into the SD card insertion slot with the front side of SD card faced upward until it clicks as shown in the figure below.



#### Caution

Always check the orientation of SD card. Inserting the SD card in the incorrect orientation may damage the SD card or recorder.

#### Step 2: Turning the power on

Connect the device to the power supply. There is no power switch. When you connect the device to the power supply, the device immediately starts up. Startup takes about 30 seconds.

### Step 3: Registering users

Create administrator accounts.

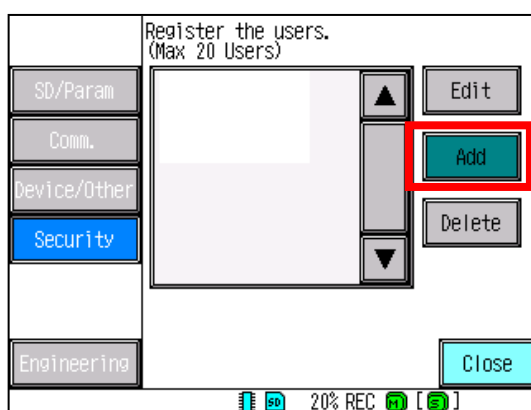
For details about user registration settings, refer to Section 4.3.1, "User registration."

\* You must create at least one administrator account. You cannot use the extended security function without creating an administrator account. It is recommended to create two administrator accounts.

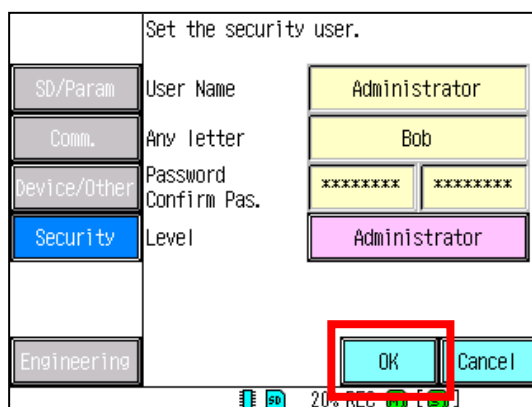
#### - Operations to open the user registration screen

MENU button → **System** key → **Security** key → **User Regist.** key

#### - To register a user



Touch the **Add** key.



Specify account information you want to register and touch the **OK** key.

Setting example:

User name : Administrator  
Arbitrary text : Bob (such as user name or title)  
Password : 1234  
Entry for confirmation: 1234  
Level : administrator



#### Caution

Safely keep the password used when registering a user. If you lose the password, you can no longer log in.

## Step 4: Enabling the extended security function

Enable the extended security function.

Enable the extended security function in the security mode.

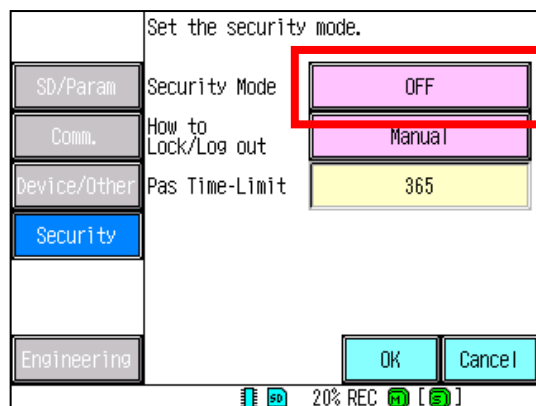
For details about setting of security mode, refer to Section 4.3.2, "Security mode."

**\*The extended security function cannot be enabled without inserting the SD card.**

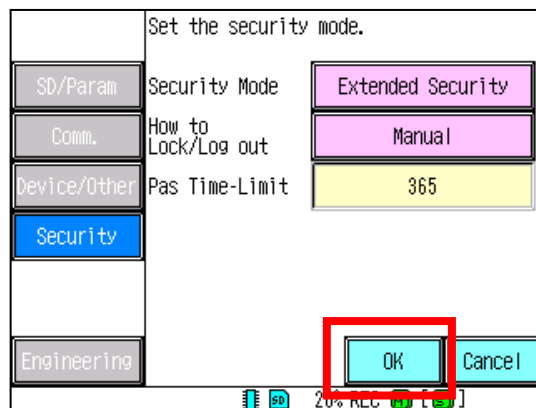
### - Operations to open the security mode screen

MENU button → **System** key → **Security** key → **Security Mode** key

### - To enable the extended security function



Touch Security Mode on the security mode setting screen several times.



Setting is completed when you confirm that Security Mode becomes Extended Security and touch the **OK** key.

Setting example:

Security Mode: Extended Security

How to Lock/Log out: Auto + Manual

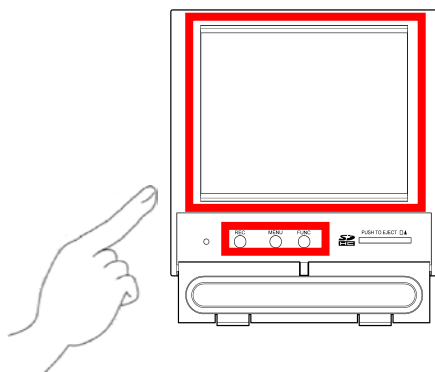
Password Time-Limit: 365 (days)

## 4.2.2 Login (when logout)

This procedure is required when you change parameters, start recording or perform other operations.

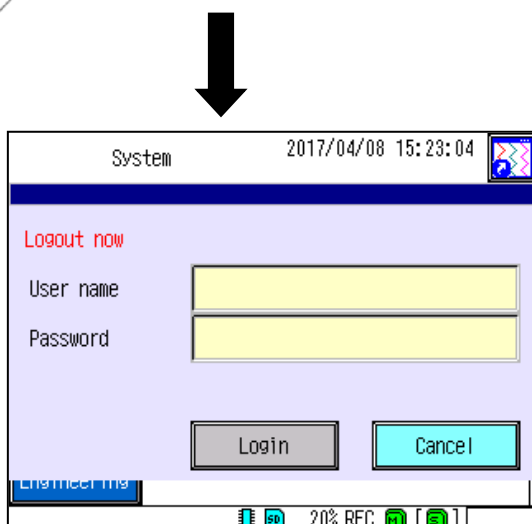
### Step 1: Opening the login screen

Open the login screen.



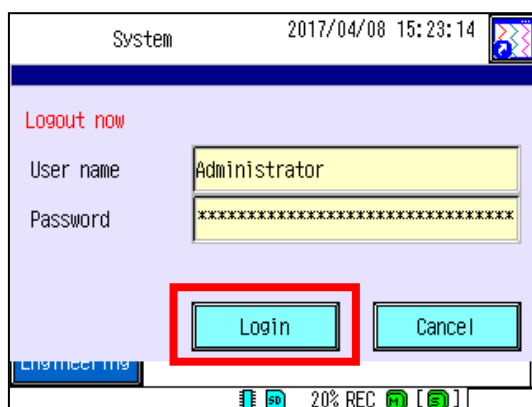
Touch the screen or press the REC, MENU, or FUNC hard button.

\* While the extended security function is enabled, this screen is opened whenever you touch the screen or operate a hard button.



### Step 2: Logging in

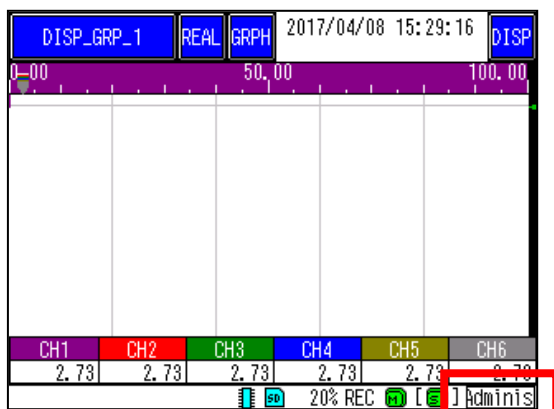
Log in using the account you set up.



Enter the user name and password and touch the Login key.

When the login session is completed, the name of the current login user appears as shown at the right bottom of the figure below.

If the user name is long, the display is scrolled.



### Warning

If you input mistake passwords in 10 times consecutive, your account will be locked and you will not be able to log in for 24 hours. In order to use the account again, you need to log in again after 24 hours, or reset the password with the administrator user.

### 4.2.3 Logout

When **Auto + Manual** is set to How to Lock/Log out, the user is automatically logged out if no operations are performed for five minutes.

For details about how to lock or log out, refer to Section 4.3.2, "Security mode."

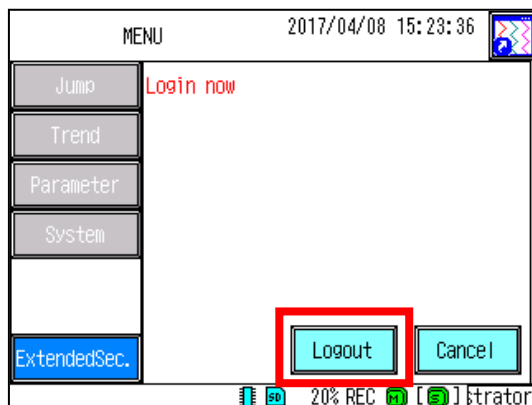
#### Step 1: Manual logging out

Manually log out.

##### - Operations to open the manual logout screen

MENU button → **ExtendedSec.** key

##### - To manually log out



Touch the **Logout** key.

This completes the manual logout operation.

## 4.2.4 Register users with operation restrictions

### Step 1: Logging in as the administrator (at logout)

Log in as the administrator (at logout). Only the administrator can edit, add, or delete user accounts.

For details about login, refer to Section 4.2.2, "Login (when logout)."

### Step 2: Registering a user account with operation restriction

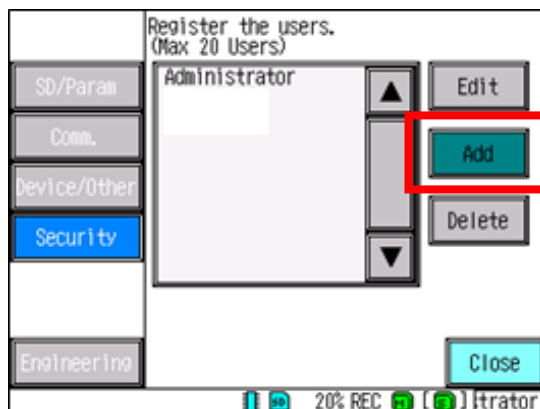
For details about user registration settings, refer to Section 4.3.1, "User registration."

**\* By default, it is prohibited to change all the setting values with a user account.**

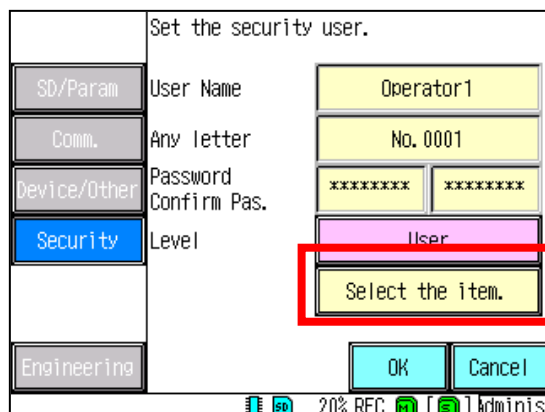
#### - Operations to open the user registration screen

MENU button → System key → Security key → User Regist. key

#### - Procedure for registering a user account with operation restriction

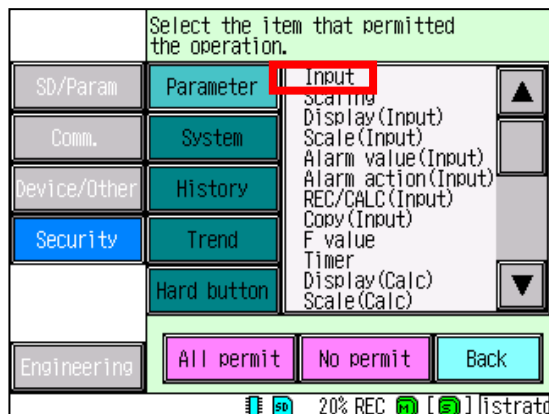


Touch the Add key.



Set User to Level and touch the Select the item key.

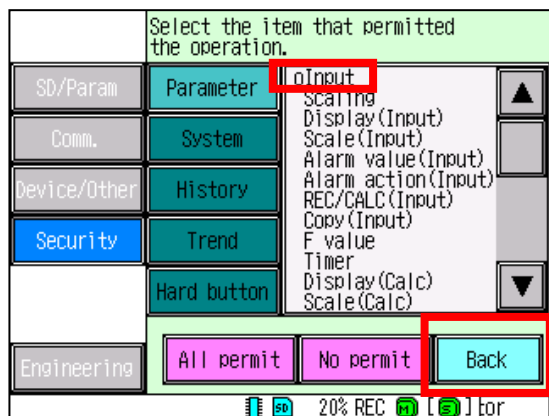




When you touch the **Select the item** key, the screen shown on the left appears. Touch the item you want to permit.

Example:

Permit the parameter input setting.



A circle appears next to Input.

Then, touch the **Back** key to return to the security user screen.

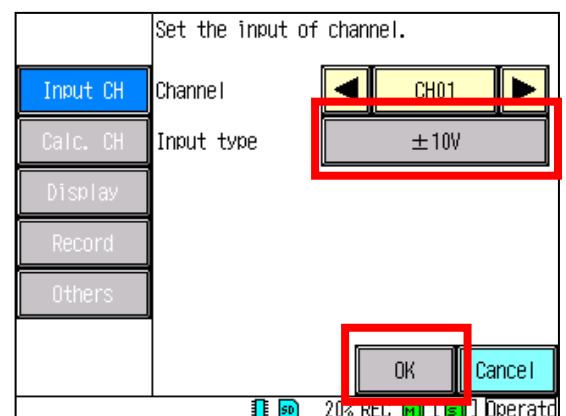
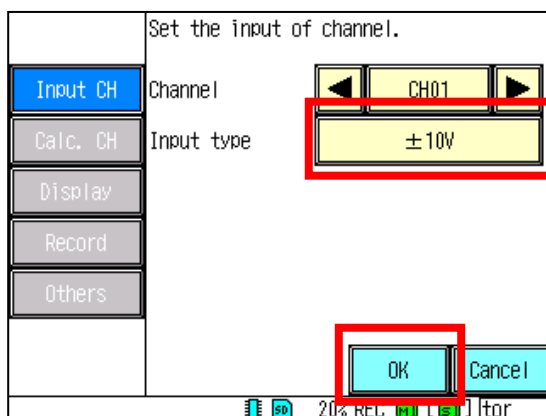
**\* Touching the Back key does not complete selecting the item.**

When the security user setting screen appears, touch the **OK** key to complete setting.

Log out from the current login account, log in using the account you registered (Operator1 in the above case) and check the item you permit.

Because you permit the input setting, the setting can be now changed as shown in the (left) figure below.

If you prohibit the setting, the setting cannot be changed as shown in the (right) figure below.





## 4.2.5 Permit electronic signature of user account

\* By default, it is prohibited to sign data with a user account.

Perform the following operation when selecting the item you permit in Section 4.2.4, "Register users with operation restrictions."

Set the security user.

User Name: Operator1

No. 0001

Password: \*\*\*\*\*

Confirm Pas.: \*\*\*\*\*

Level: User

Select the item.

OK Cancel

Touch the **Select the item** key.

Select the item that permitted the operation.

Parameter: Signature

System

History

Trend

Hard button

All permit No permit Back

Touch the **Trend** key → Signature.

Select the item that permitted the operation.

Parameter: oSignature

System

History

Trend

Hard button

All permit No permit Back

A circle appears next to Signature.

Then, touch the **Back** key to return to the security user screen.

\* Touching the **Back** key does not complete selecting the item.

When the security user setting screen appears, touch the **OK** key to complete setting.

## 4.2.6 Changing Settings (Example: Changing the Input Type)

Here, changing the input type is used as an example for description purposes.

For details about setting the input type or other item, refer to the manual of the recorder.

\* Report output is possible by setting the record type to other than "Max/Min".

### Step 1: Logging in (at logout)

Refer to Section 4.2.2, "Login (when logout)."

### Step 2: Changing the input type

Change the input type of each input channel.

\* When you touch the **OK** key, the security log and parameter log are recorded.

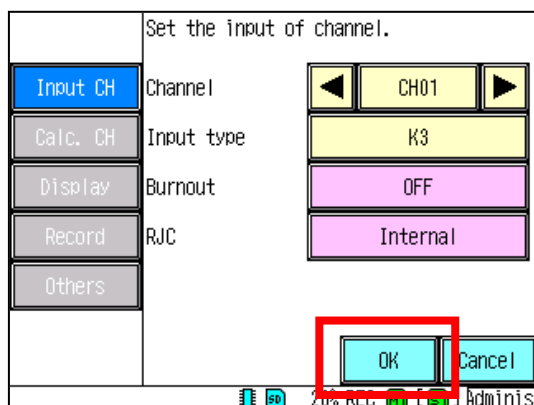
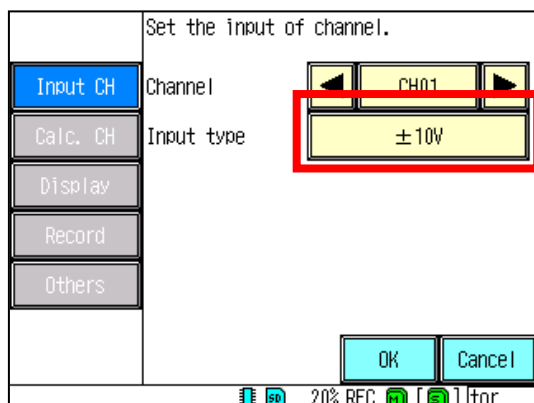
For details about the security log, refer to Section 4.3.4, "Security Log (Audit trail)."

For details about the parameter log, refer to Section 4.5.4, "Parameter log file."

#### - Operations to open the input screen

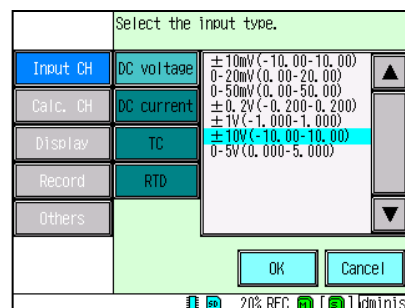
MENU button → **Parameter** key → **Input** key

#### - To change the input type



Touch the **Input type** key.

When the following input type selection screen appears, select an arbitrary input.



After completing setting the input type, touch the **OK** key.

Setting example:

Input type: K3

(The burnout and RJC settings are enabled only when the input type is thermocouple.)

## 4.2.7 Start / stop recording (Output measured data to SD card)

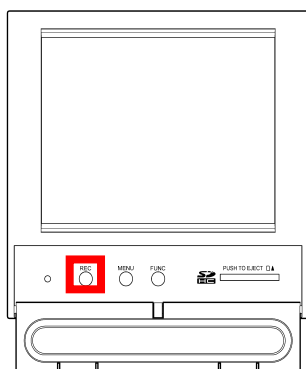
Check the following items before starting recording.

Setting item	Reference
Recording cycle	Recorder User's Manual
File recording cycle	
Each input or operation channel settings	
Record group or other display settings	
User registration	Section 4.3.1, "User registration"
Security mode	Section 4.3.2, "Security mode"
Signature function of user account	Section 4.2.5, "Permit electronic signature of user account"

### Step 1: Logging in (at logout)

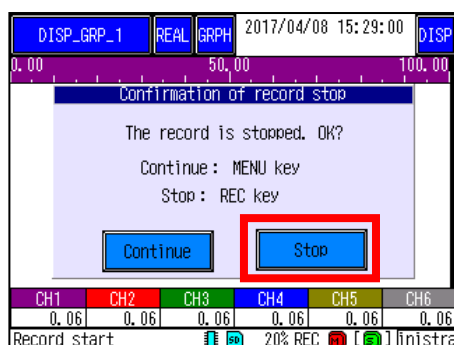
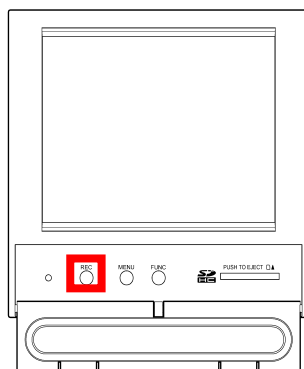
Refer to Section 4.2.2, "Login (when logout)."

### Step 2: Starting recording



Press the REC button to start recording.

### Step 3: Stopping recording (outputting measurement data to the SD card)



Press the REC button.

When you are prompted to confirm stopping recording, touch the **Stop** key or press the REC button again to stop recording.

After recording stops, measured data is output to the SD card.

\* If the SD card is not inserted:

Measurement data is automatically output after the SD card is inserted.

## 4.2.8 Check the audit trail (security log)

### Step 1: Logging in (at logout)

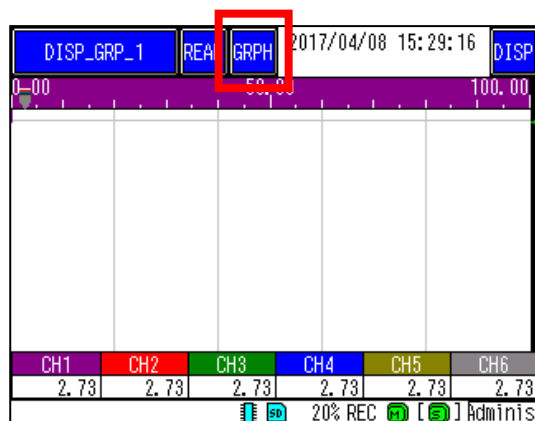
Refer to Section 4.2.2, "Login (when logout)."

### Step 2: Checking audit trails (security logs)

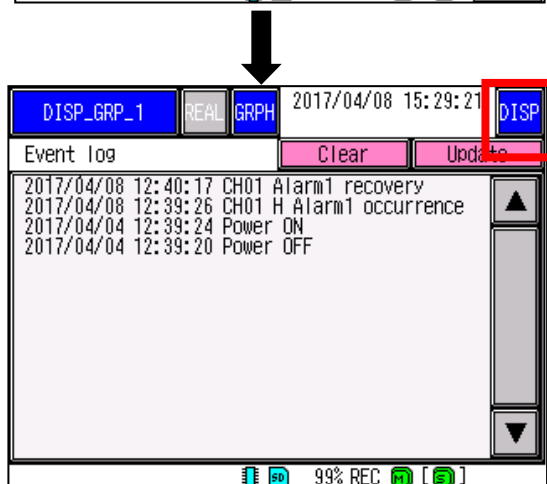
Check recorded audit trails (security logs).

For details about the security log, refer to Section 4.3.4, "Security Log (Audit trail)"

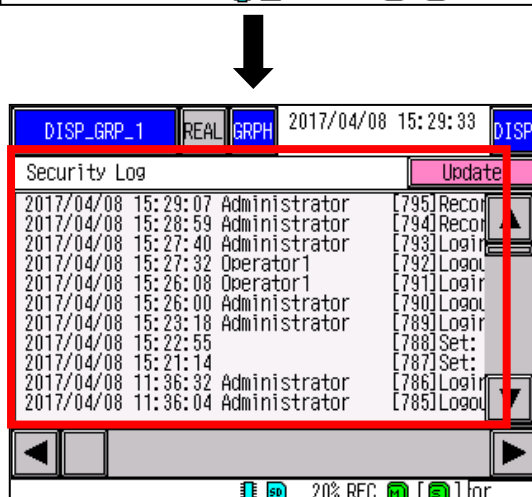
\*Security logs cannot be checked while historical trends are displayed.



Touch the **GRPH** key on the trend screen multiple times.



When event records are displayed, touch the **DISP** key twice.



Security logs are displayed.

Check the details of logs horizontally or vertically scrolling them.

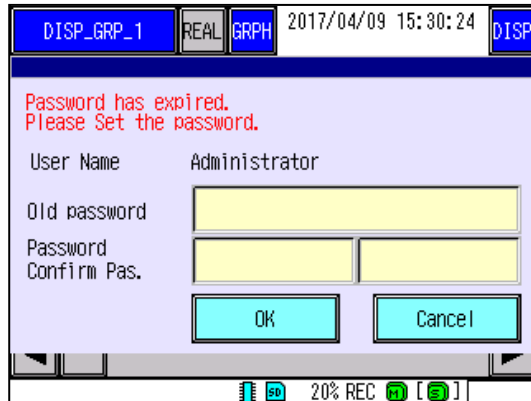
Touch the **Update** key to refresh the display with the latest record information.

## 4.2.9 Resetting the password (In the case of password expired)

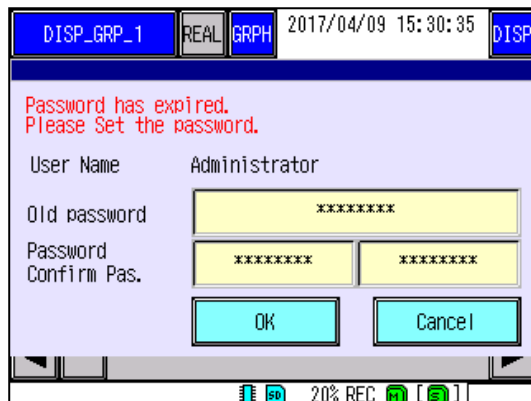
### Step 1: Logging in (at logout)

Refer to Section 4.2.2, "Login (when logout)."

When you select a login user on the login screen, the following password reset screen appears.



### Step 2: Resetting the password



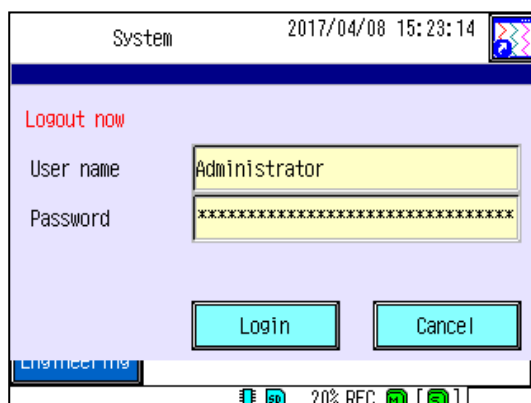
Enter the old password and a new password.  
You must enter the new password twice for confirmation.

Note that the following character string cannot be set as a new password.

1. Same password as the old one
2. Same password as the user name
3. Password consisting of less than 4 letters

### Step 3: Logging in using the new password

Log in using the password you registered at Step 2.



## 4.2.10 Resetting the password (In the case of password forgot)

If you lose your user account password, you can reset your password by logging in as an administrator user.  
If you lose the password for the administrator account, you can perform the operation described in this section only when two or more administrator accounts are registered. If only one administrator account is registered, contact your dealer or our sales staff.

### Step 1: Logging in using the administrator account

Refer to Section 4.2.2, "Login (when logout)."

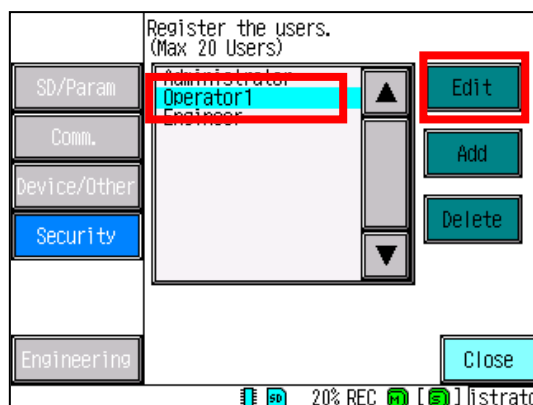
### Step 2: Resetting the password for the account for which password you lost

Reset or clear the password.

Perform the setting on the user registration screen.

#### - Operations to open the user registration screen

MENU button → **System** key → **Security** key → **User Regist.** key

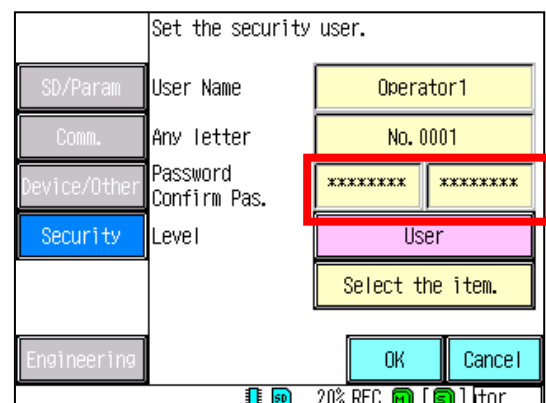
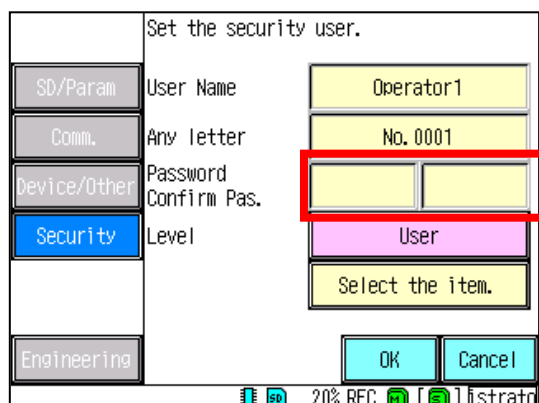


Select the account for which password you want to reset and touch the **Edit** key.



- To reset the password: Specify a new password in the red frame. (left figure)

- To clear the password: Clear data from the red frame. (right figure)



- You can use the new password at the next login after resetting the password. (left figure)
- The password setting screen appears at the next login after you clear the password. Specify an arbitrary password. (right figure)

DISP_GRP_1	REAL	GRPH	2017/04/10 14:05:55		DISP
Logout now					
User name	Operator1				
Password	*****				
Login			Cancel		
6.56	6.56	6.56	6.56	6.56	6.56
SD 20% REC [S]					

DISP_GRP_1	REAL	GRPH	2017/04/10 13:50:35		DISP
Password has not been set. Please Set the password.					
User Name	Operator1				
Old password					
Password					
Confirm Pas.					
OK			Cancel		
7.94	7.94	7.94	7.94	7.94	7.94
SD 20% REC [S]					

## 4.3 Setting/Display

### 4.3.1 User registration

This section describes how to create, edit or delete users used at login. You also use the user name and password specified here in the support software (Ex.Sec Viewer). Up to 20 users can be registered.

[Notes] - No settings may be changed while the process of recording is in progress.

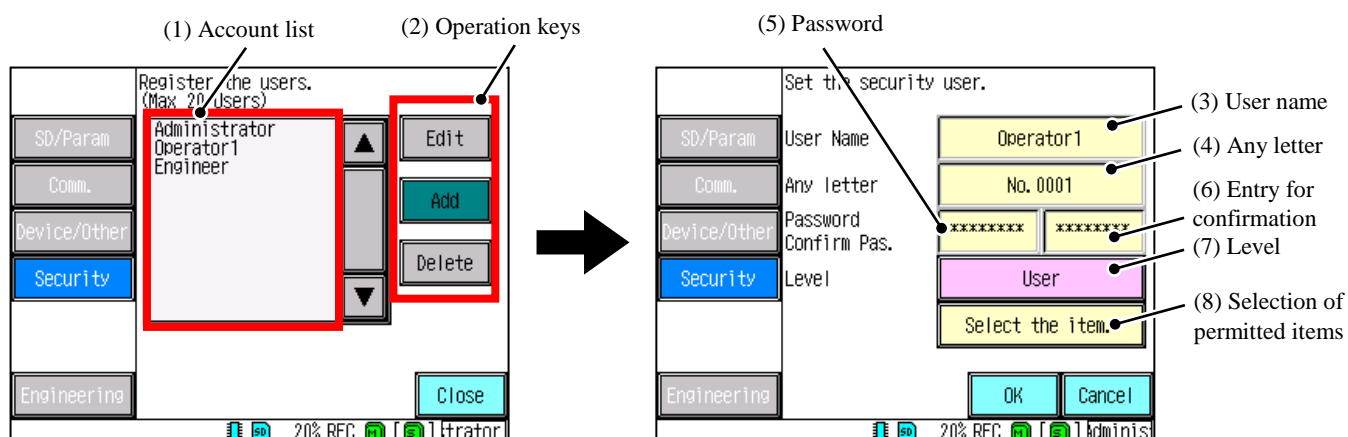
- Safely keep the password used when registering a user. If you lose the password, you can no longer log in.

**Table 4.1 List of Setting Items and Setting Values**

No.	Item name	Setting value	Remarks
(3)	User name	Specify an arbitrary character string. (up to 16 one-byte characters)	—
(4)	Any letter	Specify an arbitrary character string. (up to 16 one-byte characters)	Can be omitted.
(5)	Password	Specify an arbitrary character string. (up to 32 one-byte characters)	—
(6)	Entry for confirmation	Enter the same character string as that you entered as the password.  (up to 32 one-byte characters)	—
(7)	Level	Administrator or user	—
(8)	Selection the item	Select parameter settings, system settings, and other operation items you permit.	This item is displayed only when User is set to Level. <b>* By default, it is prohibited to change all the setting values.</b>

[How to set]

Select the MENU button → **System** key → **Security** key → **User Regist.** key to open the setting screen.





(1) Account list

Lists created users. Up to 20 users can be registered.

(2) Operation keys

To edit or delete a user, touch and select the user in [①Account list] and

touch and select the **Edit** or **Delete** key. (The selected item is indicated in light blue.)

To add a user, touch the **Add** key. When you touch the **Edit** or **Add** key, the security user setting screen (right figure above) appears.

(3) Specifying the user name (up to 16 one-byte characters)

Enter an arbitrary user name on the text entry screen and set it with the OK key.

(4) Specifying arbitrary text (up to 16 one-byte characters)

Enter an arbitrary user name on the text entry screen and set it with the OK key. (This setting can be omitted.)

This is the description of each user and displayed in support software (Ex.Sec Viewer) as well. For details about where this item is displayed, refer to Section 5.2.3, "Checking and signing record data."

(5) Password (up to 32 one-byte characters)

Set the account password.

(6) Entry for confirmation (up to 32 one-byte characters)

Confirm the password. Enter the same character sting as that in [⑤Password].

(7) Level

Set the account level and restrict each setting and operation.

Administrator : Can perform all the settings and operations. Only the administrator can edit, add, or delete **User Regist.** The administrator can also reset the password for the administrator or user account for example if the user forgets the password. For details about how to reset the password, refer to Section 4.2.10“ Resetting the password (In the case of password forgot)."

User : Settings and operations can be restricted. Restrictions can be set in [⑧Selection of permitted items].

(8) Selection of permitted items

Specify settings and operations available to the user account.

When you touch the item you permit, a circle appears next to that setting item.

You can use the **All permit** or **No permit** key to specify the setting for **Parameter**, **Systems**, **Records**, **Trends**, or **Hard button**, respectively. When you touch the **All permit** key with **Parameter** touched, all the settings and operations in **Parameter** are permitted. The permission status of other items is not changed.

For the list of items you can permit, refer to Appendix 1, "List of Items You Can Permit."

**\* By default, it is prohibited to change all the setting values.**

For details about a user setting example, refer to Section 4.2.4, "Register users with operation restrictions."

## [Notes]

The following password cannot be set.

1. Same password as the old one (only when resetting the expired password)
2. Same password as the user name
3. Password consisting of four or less than letters

## 4.3.2 Security mode

This section describes how to set the security mode. You can use the extended security mode performing this setting. For details about how to set, refer to Section 4.2.1, "Enabling the extended security function."

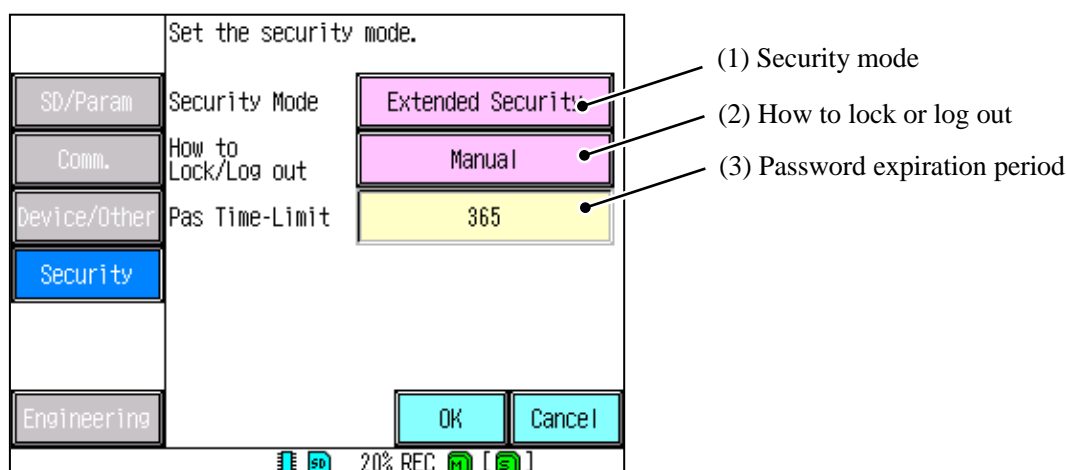
[Notes] No settings may be changed while the process of recording is in progress.

**Table 4.2 List of Setting Items and Setting Values**

No.	Item name	Setting value	Remarks
(1)	Security mode	OFF, key lock, extended security	—
(2)	How to lock or log out	Manual or Auto + Manual	—
(3)	Password expiration period	1 to 365 (days)	—

[How to set]

Select the MENU button → **System** key → **Security** key → **Security Mode** key to open the setting screen.



### (1) Security mode

Set the security mode.

OFF : The security function is not used.

Key Lock : The key lock function is used.

For details about the key lock function, refer to the manual of the recorder.

Extended Security : The extended security function is used.

For details about the extended security function, refer to Chapter 2, "Extended Security Function."

\* When the extended security is set, measurement data is output for the extended security function. The data cannot be checked in the standard support software (Data Viewer). Use the support software dedicated to the extended security function (Ex.Sec Viewer).

## (2) How to lock or log out

Select how to lock or log out.

Manual : The user can only manually lock or log out the device.

Auto + Manual : The device is locked or logged out if not operated for five minutes.

The user can also manually lock or log out the device.

## (3) Password expiration period

Specify the password expiration period. You must set a new password at login after the specified expiration period. The password reset screen is displayed as shown below. For details about resetting the password, refer to Section 4.2.9, "Resetting the password (In the case of password expired)."

DISP\_GRP\_1 REAL GRPH 2017/04/09 15:30:24 DISP

Password has expired.  
Please Set the password.

User Name Administrator

Old password

Password

Confirm Pas.

OK Cancel

50 20% REC [ ]

## 4.3.3 Setting of each parameter

You can set each type of parameter after login.

For details about setting each type of parameter, refer to the manual of the recorder.

\* Report output is possible by setting the record type to other than "Max/Min".

### 4.3.4 Security Log (Audit trail)

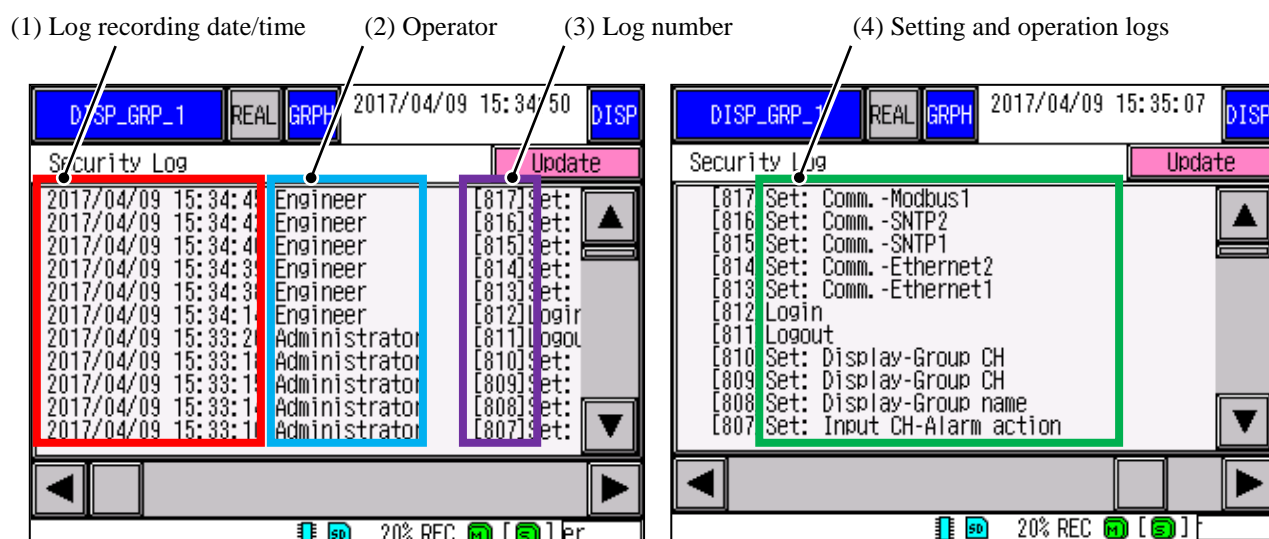
This section describes how to display the logs for each setting or operation. You can record up to 1,000 user operations such as modification of setting values or start/stop of recording as timestamped logs. When the number of log records exceeds 1,000, the oldest log record is overwritten and updated. Note that security logs cannot be deleted.

When you change a setting value, the parameter file immediately after change is saved under the file name synchronized with the log number.

[How to display]

Touch the **GRPH** key on the real-time trend screen multiple times and touch the **DISP** key on the event record screen several times.

Touch the Update key to refresh the display with the latest record information. You can check the whole log by using the vertical and horizontal scroll bars.



#### (1) Log recording date/time

Displays the date/time when the setting or operation is performed.

#### (2) Operator

Displays the account name used to perform the setting or operation.

#### (3) Log number

Displays the number for each setting or operation log ([000] to [999]).

The parameter log file corresponding to the log number is generated during setting.

For details about the parameter log file, refer to Section 4.5.4, "Parameter log."

#### (4) Setting and operation logs

Displays the performed setting or operation.

For the list of logs, refer to Appendix 2, "List of Security Logs."

## 4.4 SD card folder structure

This section describes folder configuration when the extended security function is enabled.

The folder dedicated to extended security is created when you start or stop recording.

The folder configuration is shown below.

[Folder configuration example]

[Recorder] --+-- (1) [Data]

+-- (2) [Cap] ---- Capture\_0000.bmp

+-- (3) [Etc] ---- String\_List.txt

+-- (4) [Prm] ---- Setup.dps

+-- (5) [EXSEC\_XXXXXXXXXX (manufacturing number)]

[EXSEC\_XXXXXXXXXX (manufacturing number)]

|

+-- (6) [YYMMDDHHmmss] --+-- xxxx\_YYMMDDHHmm.secm

|

+-- xxxx\_YYMMDDHHmm.dmt

|

+-- xxxx\_YYMMDDHHmm.dme

|

+-- xxxx\_YYMMDDHHmm.dmc

|

+-- xxxx\_YYMMDDHHmm.secs

|

+-- xxxx\_YYMMDDHHmm.dst

|

+-- user.dat

|

+-- security\_log.dat

|

+-- (7) [Prm] --+-- nnn\_YYMMDD.dps

+-- nnn\_YYMMDD.dps

### (1) [Data]

Measurement data is stored only when the extended security function is disabled.

For details about folder configuration when the extended security is disabled, refer to the manual of the recorder.

### (2) [Cap]

Images captured with the screen capture function are saved in the bitmap format (.bmp). Up to 100 images can be saved.

For details about screen capture, refer to the manual of the recorder.

### (3) [Etc]

The character string table that can be used with the List key on the text entry screen (.txt) or other data is saved.

### (4) [Prm]

The parameter settings file (.dps) set with this device is saved. When you save parameters with the **Prma Save** key, the data is saved in this folder. For details about saving setting values, refer to the manual of the recorder.

The dps file saved in this folder can be read or written with this device.

Store the file generated with the parameter loader in this folder.

(5)[EXSEC\_XXXXXXXXXX (manufacturing number)]

Folder dedicated to the extended security.

The folder is created in the format that allows the user to identify the recorder. That is, a manufacturing number is added to the folder name.

The record data folder and parameter log folder are created in this folder.

(6)[YYMMDDHHmmss]

Record data folder. The measurement data folder contains measurement data files, user information files, and security log files. For details about each file, refer to Section 4.5.1, "Measurement data file," Section 4.5.2, "User information file," and Section 4.5.3, "Security log file."

The folder is named using the recording start date/time. The folder name conventions are as shown below.

**Naming conventions of record data folder**

Folder name: YYMMDDHHmmss (record starting date/time)

YY: Two-digit year (00 to 99)

MM: Two-digit month (01 to 12)

DD: Two-digit day (01 to 31)

HH: Two-digit hour (00 to 23)

mm: Two-digit minute (00 to 59)

ss: Two-digit second (00 to 59)

(7)[Prm]

Parameter log folder.

The parameter log file is created in this folder.

For details about the parameter log file, refer to Section 4.5.4, "Parameter log ."

## 4.5 File

This section describes details of record data such as measurement data.

For details about how to output record data to the SD card, refer to Section 4.2.7, "Start / stop recording (Output measured data to SD card)." For details about folder configuration when outputting data to the SD card, refer to Section 4.4, "SD card folder structure."



### Caution

- All of the files are required record data. Do not delete them.

Do not rename files in any case. Failure to follow this instruction makes it impossible to view record data.

Do not edit files in any case. Failure to follow this instruction makes it impossible to view record data.

### 4.5.1 Measurement data file

There are files that contain recorded measurement data.

There are the following six types of measurement data files:

The naming conventions of each file are as shown below.

Naming conventions of each file

YY: Two-digit year (00 to 99)

MM: Two-digit month (01 to 12)

DD: Two-digit day (01 to 31)

HH: Two-digit hour (00 to 23)

mm: Two-digit minute (00 to 59)

ss: Two-digit second (00 to 59)

xxxx: Four-digit record management file number (0000 to 0999)

#### - Main record management file

File to record when recording of (main) trend data started and ended as well as link information.

A single secmm file can be used to manage up to 50 dmt files.

(If 50 or more dmt files are created, a new secmm file is created.)

File name: xxxx\_YYMMDDHHmm.secmm

Extension: secmm

#### - Main record trend file

(Main) measurement data file divided at the file recording cycle.

File name: xxxx\_YYMMDDHHmm.dmt

Extension: dmt

#### - Main record event file

History file to record alerts, messages and other events.

File name: xxxx\_YYMMDDHHmm.dme

Extension: dme

#### - Main record comment file

Data file for the comment function.

File name: xxxx\_YYMMDDHHmm.dmc

Extension: dmc

**- Sub record management file**

File to record when recording of (sub) trend data started and ended as well as link information.

File name: xxxx\_YYMMDDHHmm.secs

Extension: secs

**- Sub record trend file**

(Sub) measurement data file divided at the file recording cycle.

File name: xxxx\_YYMMDDHHmm.dst

Extension: dst

## **4.5.2 User information file**

User information file registered when the user is registered.

File name: user.dat

Extension: dat

## **4.5.3 Security log file**

File that stores information about 1,000 security logs.

File name: security\_log.dat

Extension: dat



## 4.5.4 Parameter log file

File that contains information about parameters set in the past. This file is internally generated for example when you select the input type. The parameter log file is not generated when an operation not related to parameters (such as start of recording) is performed.

The recorder contains information about up to 50 past parameters. When 50 or more parameter log files are recorded, the oldest file is overwritten and updated.

When you setting parameter, a parameter file associated with security logs is recorded. This parameter file is output to the SD card with measurement data when recording stops. When the SD card contains the same parameter file, that parameter file is neither saved nor overwritten. The created parameter file can be checked using the support software (parameter loader).

File name: nnn\_YYMMDD.dps

Extension: dps

### Naming conventions of parameter log file

Folder name: nnn\_YYMMDD (when recording the parameter file)

YY: Two-digit year (00 to 99)

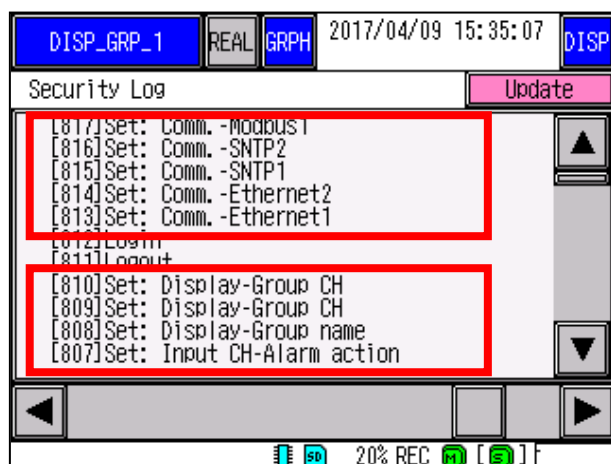
MM: Two-digit month (01 to 12)

DD: Two-digit day (01 to 31)

nnn: Three-digit security logs number (000 to 999)

The relationship between security logs and parameter log files are shown below.

- Security log



Parameter log files are created under the names that contain the set log numbers [807] to [810], [813] to [817] as the first three letters.

- Parameter log file in the SD card folder

805_170409.dps	2017/04/09 15:36	DPS
806_170409.dps	2017/04/09 15:36	DPS
807_170409.dps	2017/04/09 15:36	DPS
808_170409.dps	2017/04/09 15:36	DPS
809_170409.dps	2017/04/09 15:36	DPS
810_170409.dps	2017/04/09 15:36	DPS
813_170409.dps	2017/04/09 15:36	DPS
814_170409.dps	2017/04/09 15:36	DPS
815_170409.dps	2017/04/09 15:36	DPS
816_170409.dps	2017/04/09 15:36	DPS
817_170409.dps	2017/04/09 15:36	DPS

## 4.6 Timing of data writing

First of all, recorded data is preserved in an internal memory, and it is automatically written on the SD card in each timing. The timing of writing data is shown below. (Refer to item 4.4 “ SD card folder structure” for format of record file.)

- (1) When recording stops
- (2) When you insert an SD card (when there is non-outputted record data in internal memory)
- (3) Per file recording cycle

### [Notes]

- Never remove the SD card while "File writing" is displayed.
- Please insert the SD card and start recording. Since the overwrite function is turned off in the extended security mode, if recording is performed without inserting an SD card, recording stops when the internal memory capacity becomes full.

# 5.Ex.Sec Viewer – OPERATION –

## 5.1 Overview

### 5.1.1 Introduction

Chapters 5 and 6 describe how to install and operate Ex.Sec Viewer. Be sure to carefully read this document before use.

### 5.1.2 About Ex.Sec Viewer

Ex.Sec Viewer is support software with which you can check, sign and print record data.

As this is optional software, the authentication-key is required to use it.

Note that this software does not start up unless the authentication-key is inserted into the PC.

### 5.1.3 Recommended operating environment

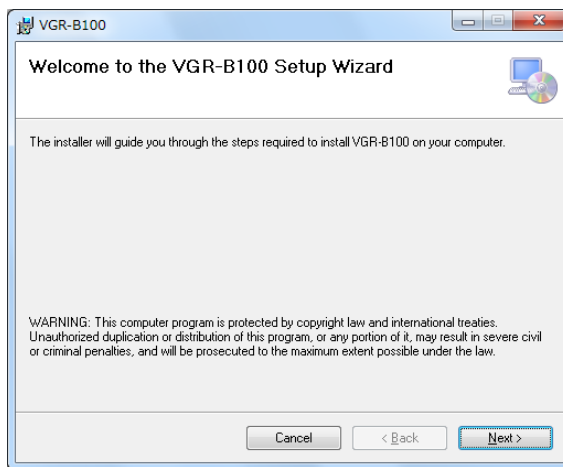
- Computer with (32-bit or 64-bit) Microsoft Windows 7 ,8.1 or 10 installed
- Hard disk with 500 MB or larger free space
- RAM capacity required by the OS to normally operate
- Memory card (SD card) (Recommended cards: 1-32GB card from Panasonic or 1-32GB card - from SanDisk or 1-32GB card - from HAGIWARA Solutions)
- PC from a manufacturer (This software may not operate on a home-built PC or shop brand PC.)
- Printer driver and printer supported by your OS
- Mouse and keyboard supported by your OS
- Port for Ethernet communication (10BASE-T, TCP/IP protocol)
- CD-ROM drive x 1
- Display resolution: 1024 × 768 pixels (XGA) or more
- USB port
- SD card reader
- Virtual PC (Hyper-V, Vmware etc.) is not covered by warranty.

### 5.1.4 Installation

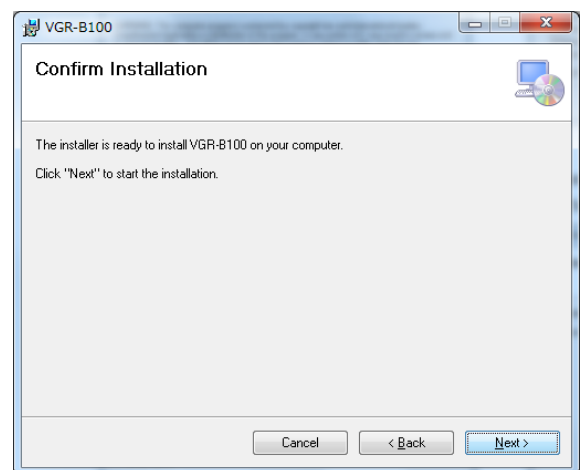
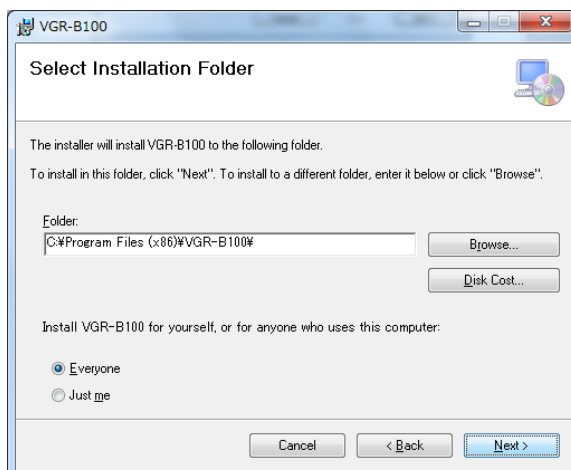
To install this software, perform the following procedure. Three support software applications (Ex.Sec Viewer, Data Viewer, and Parameter Loader) are installed at the same time.

- 1) If other application software programs are open, terminate all of them.
  - 2) If the data viewer has been already installed, delete it from “Add/Remove Programs” on Control Panel.
  - 3) Set CD-ROM in the personal computer drive.
  - 4) The menu is automatically displayed. Follow the instructions on the screen. If the menu is not displayed, please start “index.htm” that CD-ROM drive has. The menu for the installation is displayed, and please installs it according to the instruction of the screen. The Data Viewer and the Parameter Loader are installed at the same time.
- \* When installing the software, it may be necessary to install ".NET Framework". In that case, please install the software after installing ".NET Framework". When installing the .NET Framework attached to the CD on Windows 7, please install after updating the OS to the latest state. Windows 8.1 / 10 is already installed, so installation is not required.

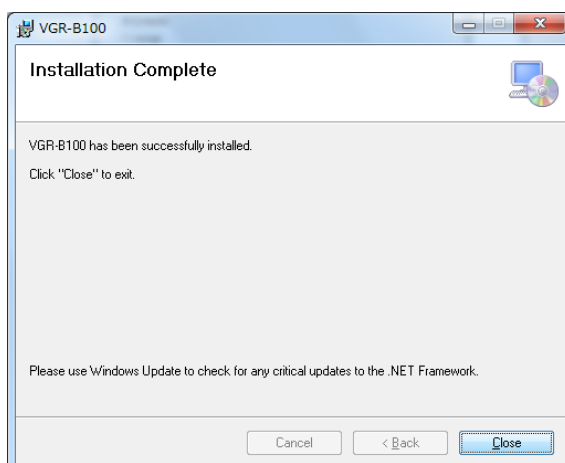
- (1) When you start the installer, the following screen is displayed. Please click the “Next”.
- (2) Please read the license agreement carefully and if you agree, please select “I Agree” and click the “Next”.



- (3) Use the default options, or select the installation folder and the target user(s). Proceed by clicking “Next”.
- (4) Preparation for installation is now complete. Click “Next” to start installation.



- (5) When installation is completed, the following message is displayed. Click “Close” to end installation.



## 5.1.5 Uninstallation

To uninstall this software, perform the following procedure. Three support software applications (Ex.Sec Viewer, Data Viewer, and Parameter Loader) are uninstalled at the same time.

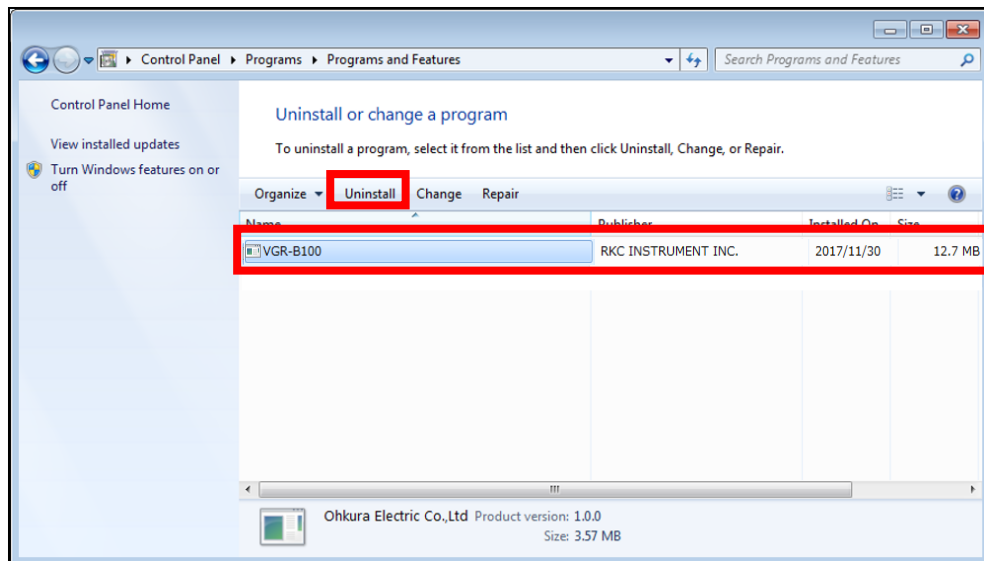
- Windows 7

Select [Start] -> [Control Panel] -> [Programs and Features].

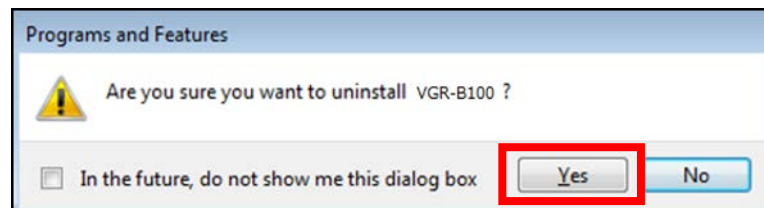
- Windows 8.1

Right-click the Windows button and select [Control Panel] -> [Programs and Features].

- Select VGR-B100 from the list and click “Uninstall”.



- When the following message appears, press “Yes” to uninstall the software.



## 5.1.6 About authentication-key

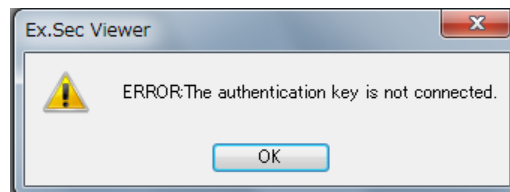
### - What is an authentication-key?

The authentication-key is a USB dongle required to use Ex.Sec Viewer. The authentication-key is recognized not as a mass storage such as USB memory but a human interface device. Therefore, the authentication-key can be used on a protected PC. In addition, because a dedicated driver is not required, this software is recognized in the environment described in Section 5.1.3, "Recommended operating environment" When the authentication-key is inserted for the first time, the LED flashes for several seconds and the standard Windows driver is installed. After installation, the authentication-key is recognized as "USB DONGLE." (The device can be checked with "Devices and Printers" in Control Panel.)



### - How to use the authentication-key

Insert the authentication-key into a USB port before starting Ex.Sec Viewer. If the inserted authentication-key cannot be verified, the following error is displayed and the software does not operate.



### - Light-up patterns of authentication-key LED

#### - When the LED is lit:

Indicates that the dongle is normally operating.

#### - When the LED is flashing: The USB port or driver may not normally function or the dongle may be defective.

#### - When the LED is off and the "The USB device is found" message is output:

The dongle may be defective or connection failure or malfunction of USB port is suspected.

Refer to Chapter 7, "Troubleshooting."

How to check the operation of USB port:

Normally, when the authentication-key is connected to the PC for the first time, the "The USB device is found" message is displayed and the driver is installed. If installation of driver does not start, an incorrect USB controller driver may be installed, the USB may be disabled on the CMOS, or the USB port hardware may be defective. Check whether other USB products such as the USB mouse normally operate. When USB ports normally operate, the authentication-key may be defective. Refer to Chapter 7, "Troubleshooting."

## 5.2 Operation

This section describes how to import, sign and print record data and other procedures.

### 5.2.1 Start Ex.Sec Viewer

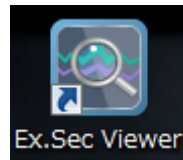
#### Step 1: Inserting the authentication-key into the PC

Insert the included authentication-key into a USB terminal on the PC.

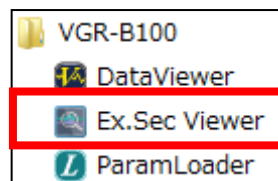
#### Step 2: Starting Ex.Sec Viewer

The following shortcut icon is automatically created on the desktop during installation.

Double-click the icon to start Ex.Sec Viewer.



You can also start the application by clicking it in "VGR-B100" in All Programs.



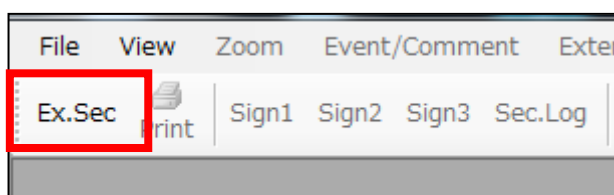
## 5.2.2 Get record data to PC

### Step 1: Inserting the SD card into the PC

Insert the SD card which measurement data was output to into the PC.

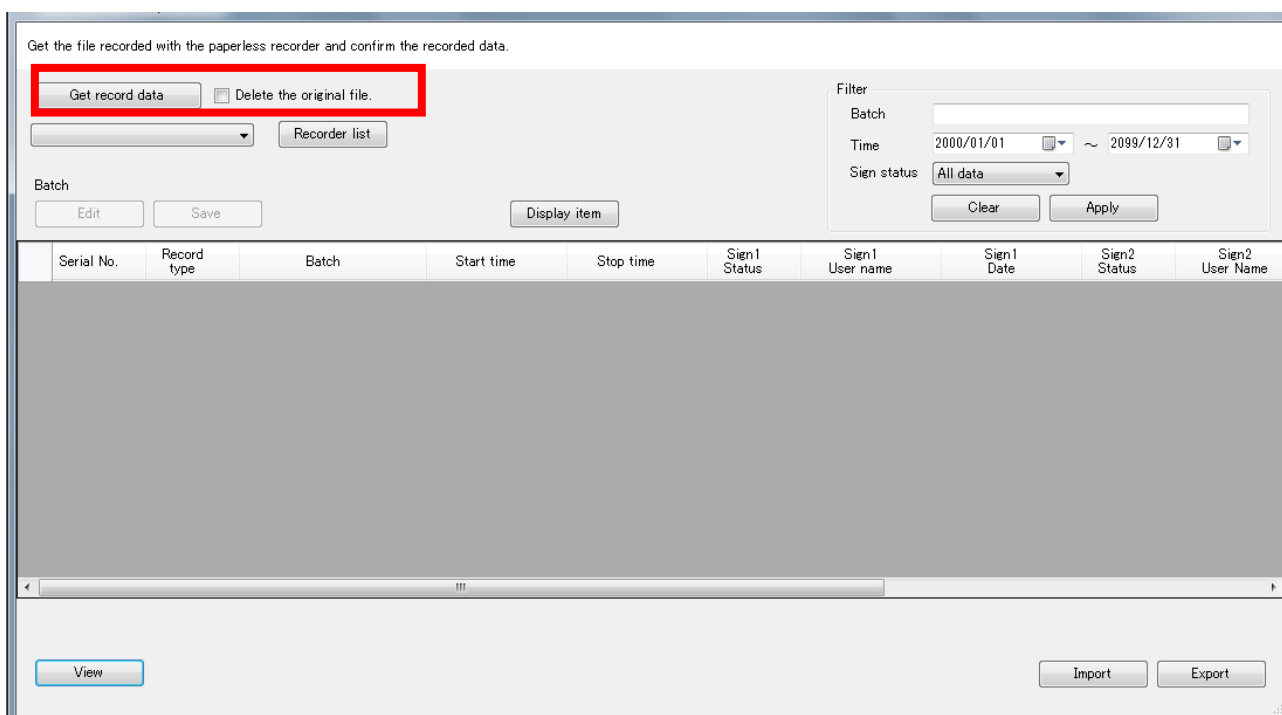
For details about how to output measurement data to the SD card, refer to Section 4.2.7, "Starting/stopping recording (outputting measurement data to the SD card)."

### Step 2: Importing record data

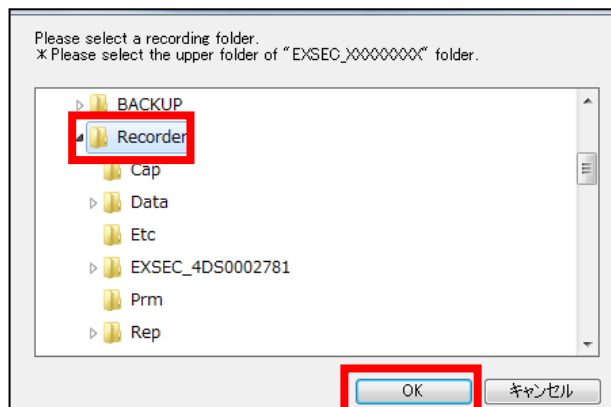


Click the "Ex.Sec" button to open the extended security data list screen.

Click the "Get record data" button. To delete the imported record file, select the check box ( ☒ ).

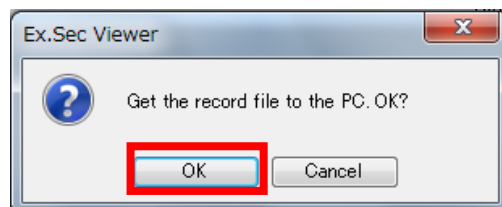




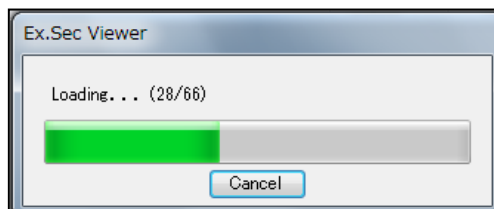


The folder reference screen appears.

The "EXSEC\_XXXXXXXXXX (manufacturing number)" folder is a file that contains record data. Click the folder above this folder ("Recorder" in this case) and click the "OK" button.

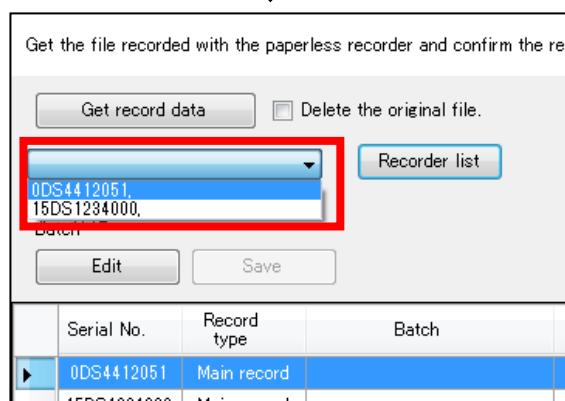


Click the "OK" button.



When importing starts, the progress bar appears.

When the progress bar disappears, importing is completed.



Click the part in the red frame to display the manufacturing numbers of recorders from which data was imported.

When you click the recorder from which data was imported, the record data list appears.

Imported record data is saved in the folder specified in "Extended security save destination folder" in "Option" in the View menu. For details about option setting, refer to Section 6.5, "Option".



The imported data is displayed as shown below.

- (1) Serial No. (2) Record type (3) Batch (4) Recording time information (5) Signature information

Serial No.	Record type	Batch	Start time	Stop time	Sign1 Status	Sign1 User name	Sign1 Date	Sign2 Status	Sign2 User Name
0DS4412051	Main record		24/02/2017 16:17:05	24/02/2017 16:17:05	Not signed			Not signed	
0DS4412051	Main record		28/02/2017 11:39:41	28/02/2017 11:39:42	Not signed			Not signed	
0DS4412051	Main record		03/03/2017 14:46:51	03/03/2017 14:54:35	Not signed			Not signed	
0DS4412051	Main record		03/03/2017 15:14:57	03/03/2017 15:14:58	Not signed			Not signed	
0DS4412051	Main record		07/03/2017 14:04:09	07/03/2017 14:04:33	Not signed			Not signed	
0DS4412051	Main record		07/03/2017 14:29:33	07/03/2017 14:29:59	Not signed			Not signed	
0DS4412051	Main record		10/03/2017 16:00:51	10/03/2017 16:00:55	Not signed			Not signed	
0DS4412051	Main record		14/03/2017 18:22:38	14/03/2017 18:24:55	Not signed			Not signed	
0DS4412051	Main record		14/03/2017 18:40:41	14/03/2017 18:40:44	Not signed			Not signed	
0DS4412051	Main record		14/03/2017 18:41:03	14/03/2017 18:41:03	Not signed			Not signed	
0DS4412051	Main record		17/03/2017 09:45:08	17/03/2017 09:45:36	Not signed			Not signed	
0DS4412051	Main record		17/03/2017 09:45:39	17/03/2017 09:45:41	Not signed			Not signed	

- (1) Serial No.

Displays the manufacturing number of selected recorder.

- (2) Record type

Displays the type of record data recorded with the recorder. There are main records and sub records.

- (3) Batch

It is possible to add arbitrary name as "batch " to imported recording data. Please use it to register your test status and remarks. For how to register, refer to Section 5.2.8 "Register and edit batch information of recorded data".

- (4) Recording time information

Recording start time and recording stop time are displayed. When the recording is incomplete, the time until the captured data is displayed at the recording stop time.

- (5) Signature information

The signature status, signed user name, signed time are displayed.

### Step 3: Adding detailed recorder information and batch information

In this software, memos can be added to the recorder from which data was imported as detailed information.

For details about how to add a memo, refer to Section 5.3.2 D) "Recorder list"

Batch information can be added as well. For details about how to add batch information, refer to Section 5.2.8, "Register and edit batch information of recorded data." For details about batch information, refer to Section 5.3.2 E), "Edit batch information"

## 5.2.3 Check and sign the recorded data

### Step 1: Displaying record data

Get the file recorded with the paperless recorder and confirm the recorded data.

☐ Delete the original file.

Serial No.	Record type	Batch
0DS4412051	Main record	
15DS1234000	Main record	

Click the part in the red frame to display the manufacturing numbers of recorders from which data was imported.

When you click the recorder from which data was imported, the record data list appears.

If the list is not displayed, import record data according to Section 5.2.1, "Start Ex.Sec Viewer".



Select record data you want to display and click the "View" button.

An arrow is displayed at the left edge of the currently selected record data.

Get the file recorded with the paperless recorder and confirm the recorded data.

☐ Delete the original file.

Batch:

Filter:  
Batch:   
Time: 2000/01/01 ~ 2099/12/31  
Sign status:

Serial No.	Record type	Batch	Start time	Stop time	Sign1 Status	Sign1 User name	Sign1 Date	Sign2 Status	Sign2 User Name
0DS4412051	Main record		24/02/2017 16:17:05	24/02/2017 16:17:05	Not signed			Not signed	
0DS4412051	Main record		28/02/2017 11:39:41	28/02/2017 11:39:42	Not signed			Not signed	
0DS4412051	Main record		03/03/2017 14:46:51	03/03/2017 14:54:35	Not signed			Not signed	
0DS4412051	Main record		03/03/2017 15:14:57	03/03/2017 15:14:58	Not signed			Not signed	
0DS4412051	Main record		07/03/2017 14:04:09	07/03/2017 14:04:33	Not signed			Not signed	
0DS4412051	Main record		07/03/2017 14:29:33	07/03/2017 14:29:59	Not signed			Not signed	
0DS4412051	Main record		10/03/2017 16:00:51	10/03/2017 16:00:55	Not signed			Not signed	
0DS4412051	Main record		14/03/2017 18:22:38	14/03/2017 18:24:55	Not signed			Not signed	
0DS4412051	Main record		14/03/2017 18:40:41	14/03/2017 18:40:44	Not signed			Not signed	
0DS4412051	Main record		14/03/2017 18:41:03	14/03/2017 18:41:03	Not signed			Not signed	
0DS4412051	Main record		17/03/2017 09:45:08	17/03/2017 09:45:36	Not signed			Not signed	
0DS4412051	Main record		17/03/2017 09:45:39	17/03/2017 09:45:41	Not signed			Not signed	





The login authentication screen appears.  
Enter the user name and password used in the recorder and click the "OK" button.

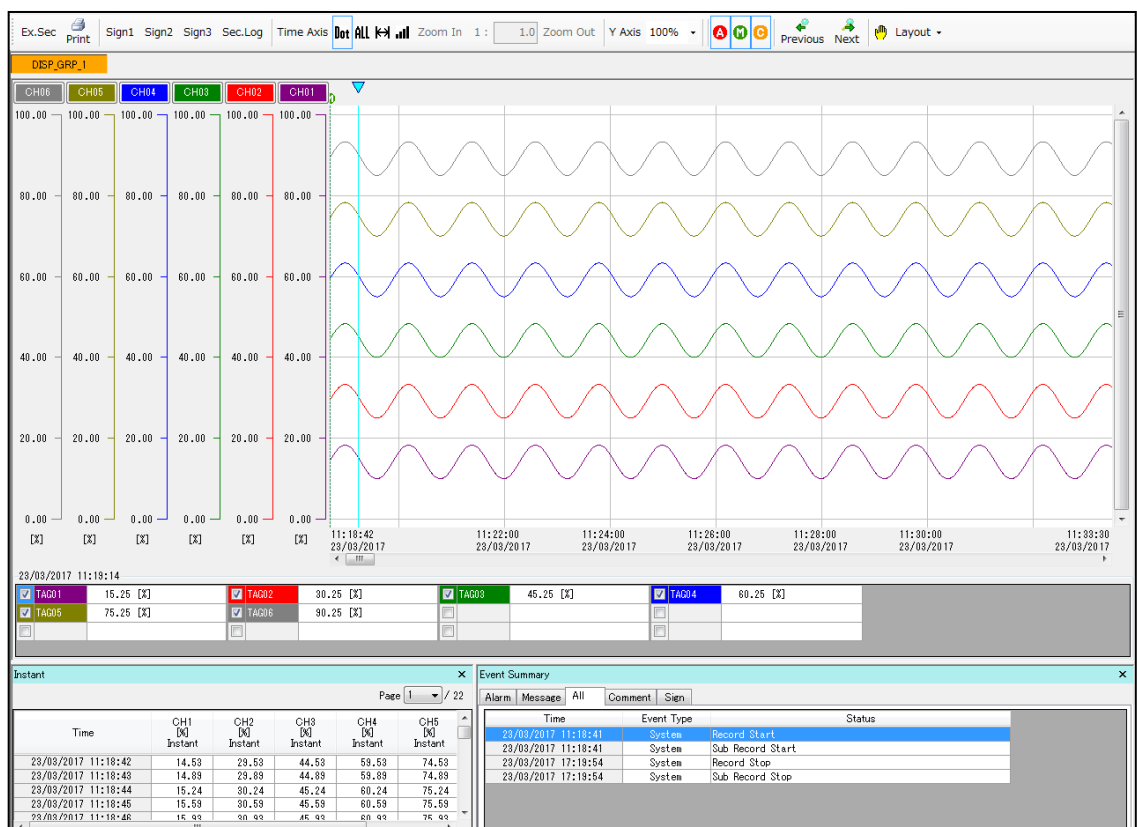
**\* Both the user name and the password are case sensitive.**

You can select or type the user name. You can change how to specify the user name from Option settings. For details about Option settings, refer to 6.5, "Option".



When login authentication is successful, you can see record data measured in the recorder.

For details about how to perform each operation when displaying record data, refer to Chapter 6, "Ex.Sec Viewer –CONTROL–"

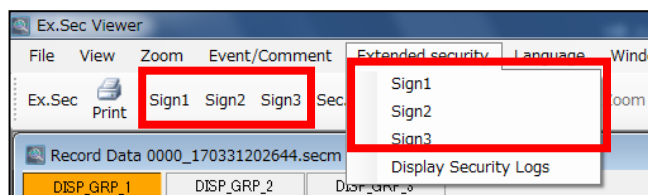


## Step 2: Signing record data



### Caution

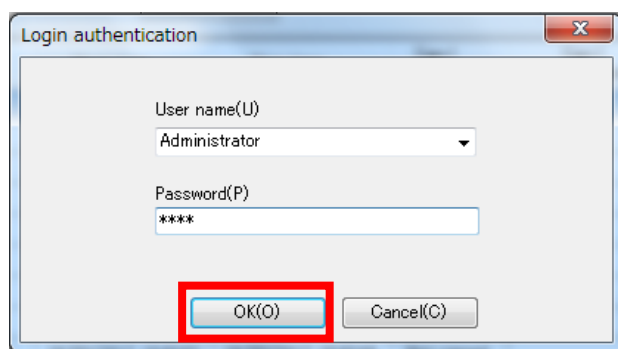
- It can't be canceled after signature. Please sign carefully.
- The signature is not for each record group unit. The signature will be all groups at once.
- The signing order and other items are not restricted. The customer can arbitrarily assign meanings to them. For the signature example, see Section 5.3.4 "Signature"



Click "Sign 1," "Sign 2" or "Sign 3" on the toolbar.

"Sign 1," "Sign 2" and "Sign 3" in "Extended security" within the menu have the same function.

Here, the signature of "Sign 1" is used as an example for description purposes.

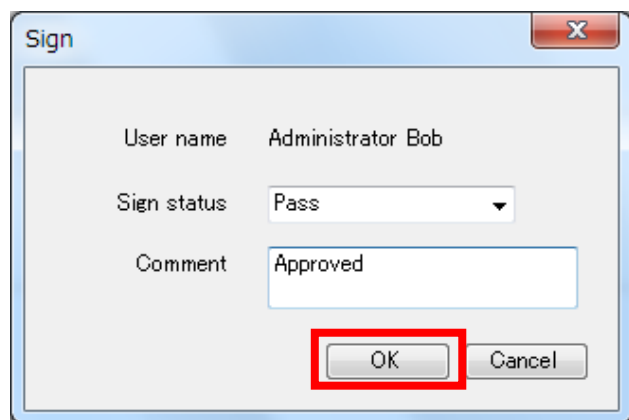


The login authentication screen appears.

Enter the user name and password used in the recorder and click the "OK" button.

**\* Both the user name and the password are case sensitive.**

You can select or type the user name. You can change how to specify the user name from Option settings. For details about Option settings, refer to 6.5, "Option".



The signature screen appears.

Select Pass or Fail and enter an arbitrary comment. Up to 52 one-byte characters can be entered.

If the signature is correct, click the "OK" button.

The user name displayed here is "User name + Any letter".

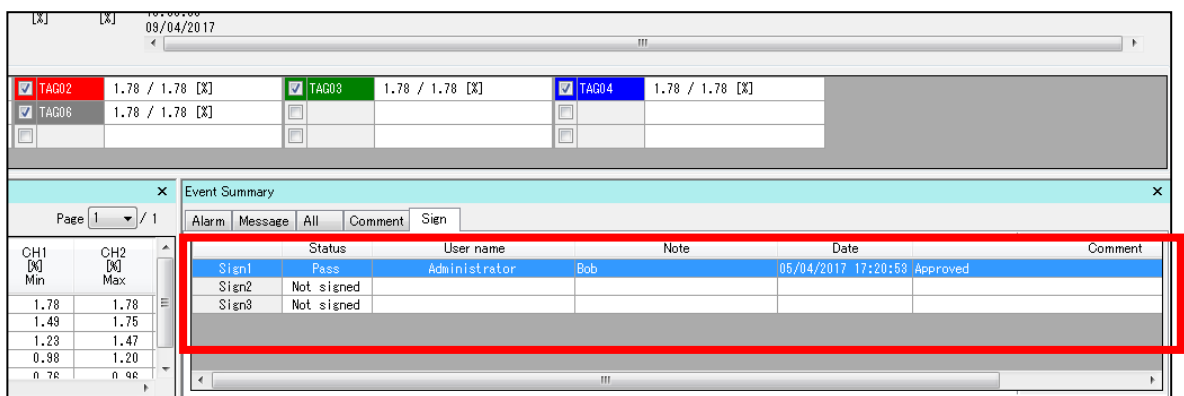




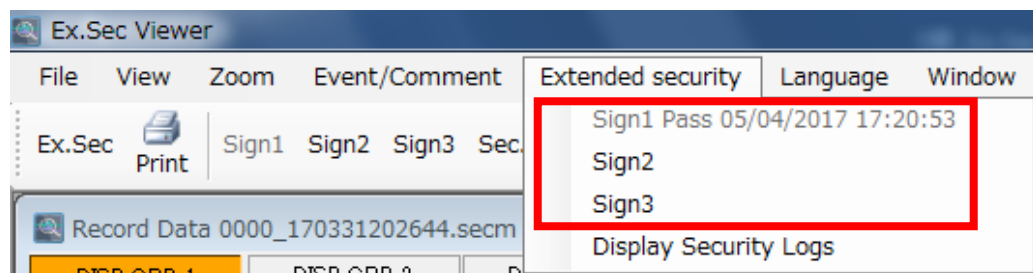
The final confirmation message appears. If there are no problems, click the "OK" button.

If signing is completed, check the result of signature on the [Sign] tab in Event Summary or "Sign 1" in Extended security on the menu, for example.

### Event Summary



### Extended security menu



## 5.2.4 Check and print the audit trail (security log)

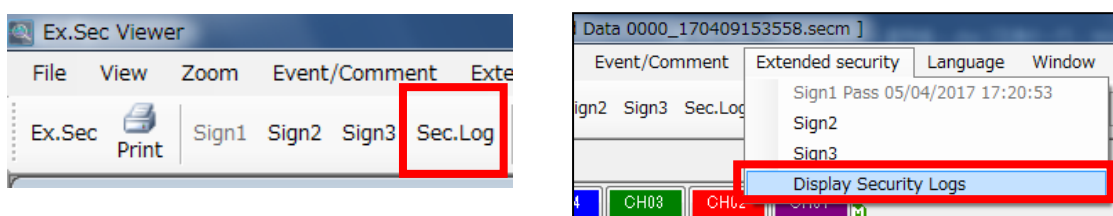
### Step 1: Displaying (signing) record data

Display record data.

For details about how to display data, refer to Section 5.2.3, "Check and sign the recorded data."

### Step 2: Checking audit trails (security logs)

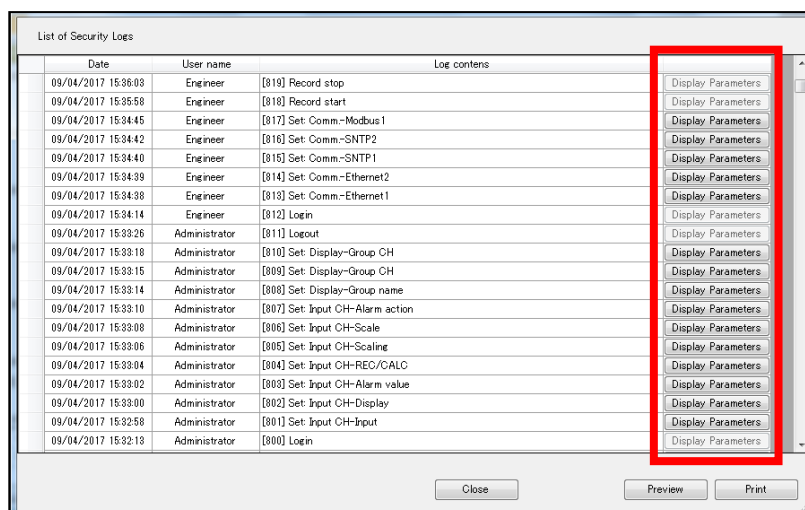
With record data displayed, click the "Sec.Log" button or "Display Security Logs" on the Extended security menu. For details about Security log, refer to Section 5.3.6, "Security log display".



Security logs are displayed as shown below.

In addition, you can check the parameters corresponding to the security log. When clicking the clickable "Display parameter" button in the red frame, the support software "Parameter loader" is activated and the target parameter can be confirmed.

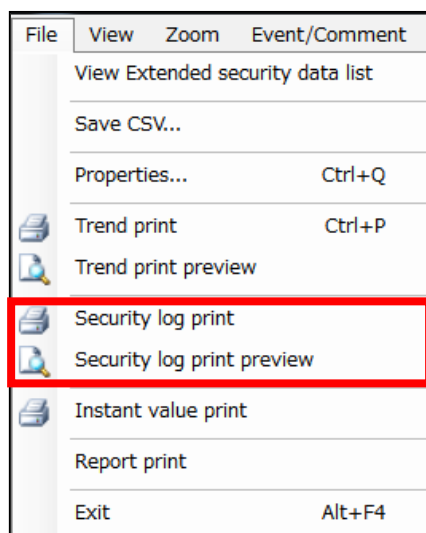
(The security logs display can be vertically zoomed in or out. To zoom in or out the display, adjust the window by dragging the edge.)



## STEP 3 : Printing audit trails (security logs)

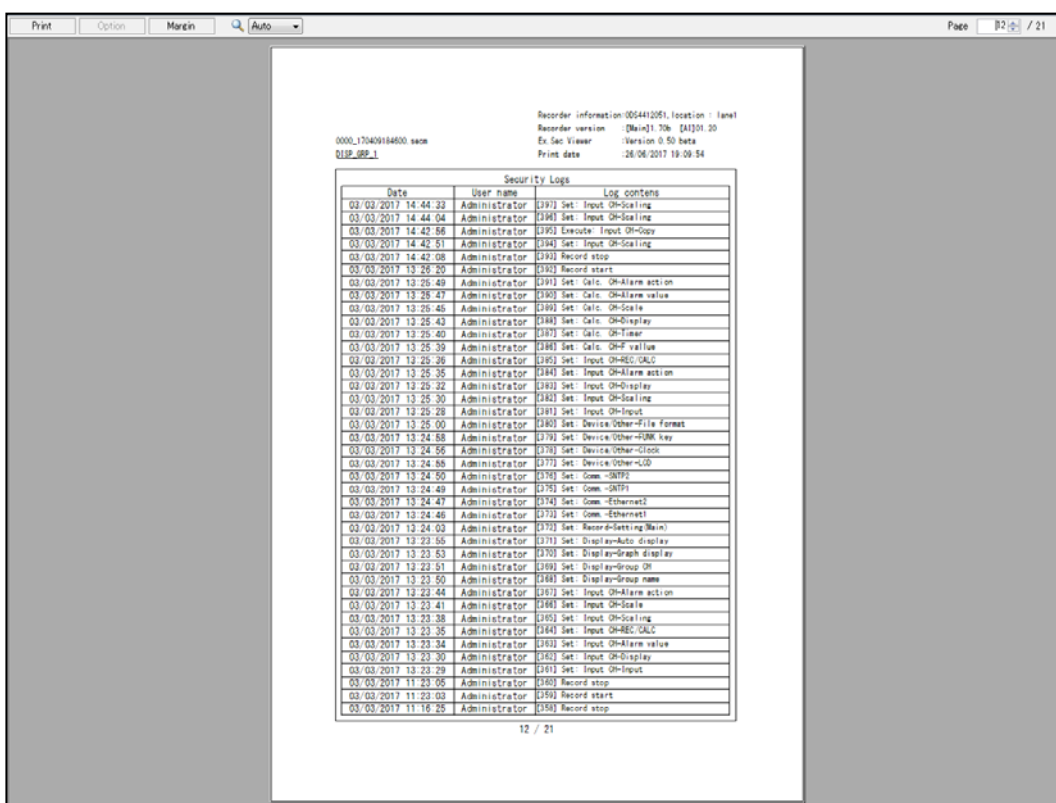
An audit trail can be printed.

You can print from "Print", "Preview" in Security log display or "Security log Print" and "Security Log Print Preview" in File Menu.



When you click Preview, a print preview of the following security log is displayed.

When "print" is clicked, the printer setting window is displayed, please make settings and execute printing. Note that signature information is not printed in security log printing.





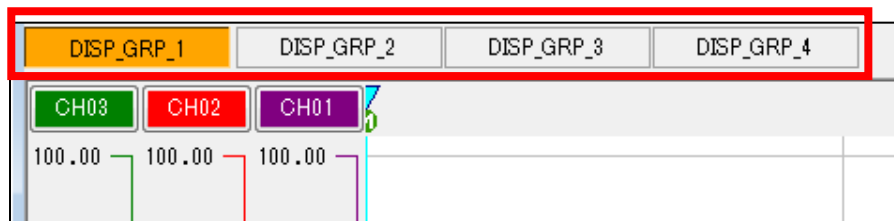
## 5.2.5 Printing signed record data

### STEP 1 : Displaying (signing) record data

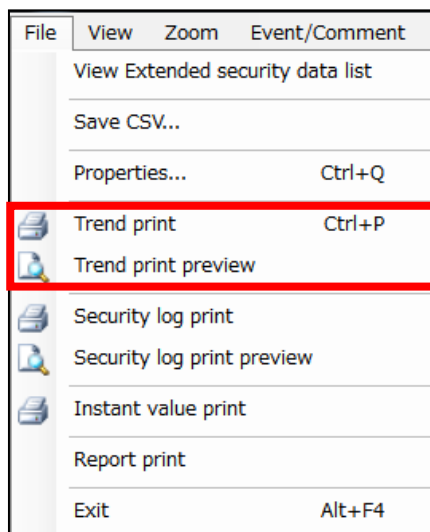
Display record data.

For details about how to display data, refer to Section 5.2.3, "Check and sign the recorded data"

Printing is performed for each recording group unit, and the data of the recording group currently being displayed is printed. Please select the recording group to be printed from the following (group change tab) and then print.



### STEP 2 : Print trend data



Click "Trend Print" or "Trend Print Preview" in the file menu.

Here, we will explain "Trend print preview" as an example. For trend print, refer to Section 6.3.1 "Trend print".

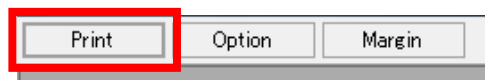
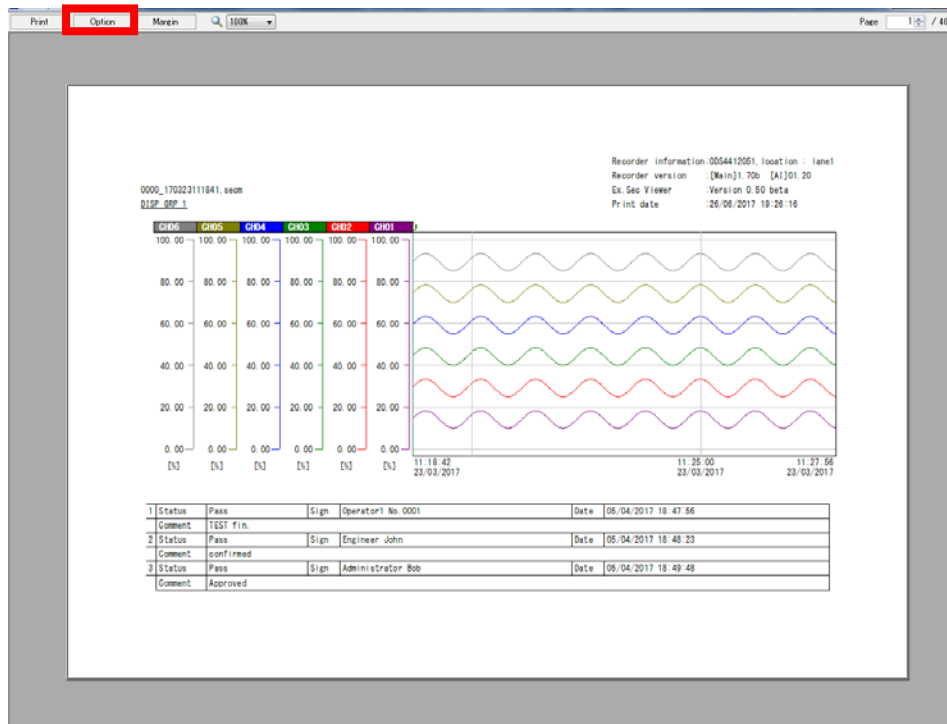
*\* When printing, we recommend that you execute trend print preview, check the format to be actually printed, and then print.*





A print preview of the trend is displayed.

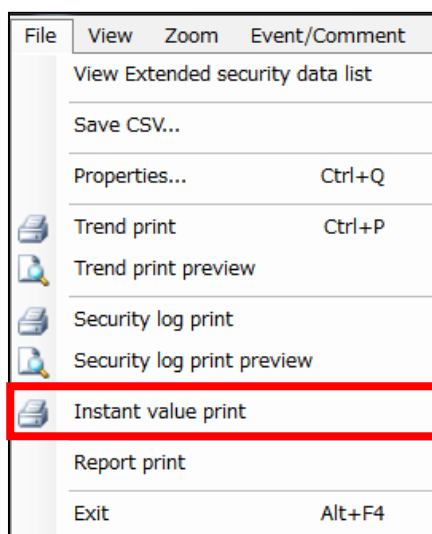
The print screen with the header and footer added is displayed. It is also possible to set the title of the graph and ON/OFF of the page number within the option. For details about option, refer to Section 6.3.1, "Print options"



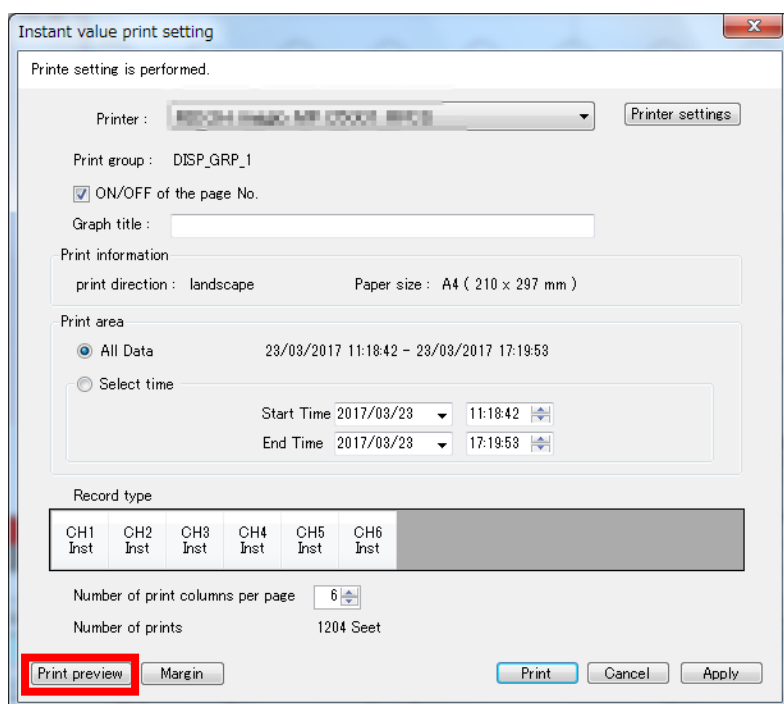
After checking the print format, click the "Print" button.

After that, please make printer settings and execute printing.

### STEP 3 : Print instant value data



Click "Instant value print" in the file menu.



Instant value print setting window is displayed.

You can make settings such as "Print direction", "Margin", "Number of print columns per page", etc., and adjust the number of prints. In addition, it is necessary to set the setting of "ON/OFF of the page number" and "Graph title" here. Make various settings and click either "Print" or "Print preview". For details about Instant value print setting, refer to Section 6.3.2 A), " Instant value print setting ".

**\* When printing, we recommend that you execute trend print preview, check the format to be actually printed, and then print.**





The instant value print preview window is displayed.

The print window with the header and footer added is displayed. Margin setting on the preview window is possible. Changing the margin will update the preview window. If you want to set instant value printing again, please click the "× (Close)" button in the upper right.

Time		CH1 [%] Instant	CH2 [%] Instant	CH3 [%] Instant	CH4 [%] Instant	CH5 [%] Instant	CH6 [%] Instant
23/03/2017 11:18:42		14.53	29.53	44.53	59.53	74.53	89.53
23/03/2017 11:18:43		14.89	29.89	44.89	59.89	74.89	89.89
23/03/2017 11:18:44		15.24	30.24	45.24	60.24	75.24	90.24
23/03/2017 11:18:45		15.59	30.59	45.59	60.59	75.59	90.59
23/03/2017 11:18:46		15.93	30.93	45.93	60.93	75.93	90.93
23/03/2017 11:18:47		16.25	31.25	46.25	61.25	76.25	91.25
23/03/2017 11:18:48		16.56	31.56	46.56	61.56	76.56	91.56
23/03/2017 11:18:49		16.84	31.84	46.84	61.84	76.84	91.84
23/03/2017 11:18:50		17.11	32.11	47.11	62.11	77.11	92.11
23/03/2017 11:18:51		17.36	32.36	47.36	62.36	77.36	92.36
23/03/2017 11:18:52		17.58	32.58	47.58	62.58	77.58	92.58
23/03/2017 11:18:53		17.77	32.77	47.77	62.77	77.77	92.77
23/03/2017 11:18:54		17.94	32.94	47.94	62.94	77.94	92.94
23/03/2017 11:18:55		18.08	33.08	48.08	63.08	78.08	93.08
23/03/2017 11:18:56		18.19	33.19	48.19	63.19	78.19	93.19
23/03/2017 11:18:57		18.27	33.27	48.27	63.27	78.27	93.27
23/03/2017 11:18:58		18.32	33.32	48.32	63.32	78.32	93.32
23/03/2017 11:18:59		18.33	33.33	48.33	63.33	78.33	93.33

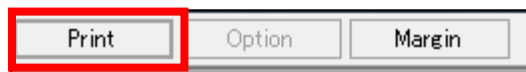
  

1	Status	Pass	Sign	Operator1 No.0001	Date	05/04/2017 18:47:56
	Comment	TEST fin.				
2	Status	Pass	Sign	Engineer John	Date	05/04/2017 18:48:23
	Comment	confirmed				
3	Status	Pass	Sign	Administrator Bob	Date	05/04/2017 18:49:48
	Comment	Approved				

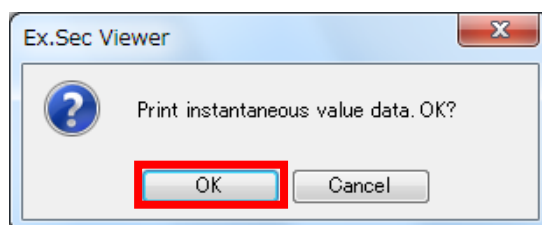
Recorder information:0054412051, location : lane1  
Recorder version :[Main]1.70b [AI]01.20  
Ex. Sec Viewer :Version 0.50 beta  
Print date :26/06/2017 20:15:56

0000\_170323111841.secm  
DISP\_GRP\_1

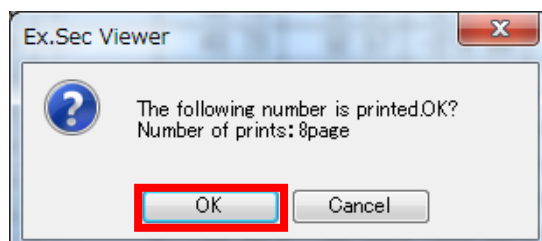
( 1 / 1204 )



After checking the print format, click the "Print" button.



A print confirmation message will be displayed. If there is no problem with the printing direction, paper size, print area, number of prints etc, click "OK" and execute printing.



## 5.2.6 Display and print the report (It supports since Ver.2.10)



### Caution

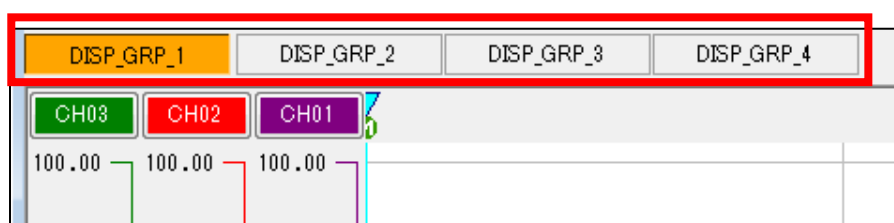
Note that channels for which the record type is set to "Max/Min" can not be output as a report.

### STEP 1 : Displaying (signing) record data

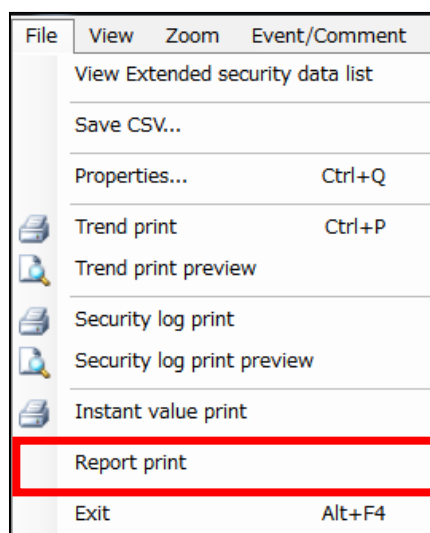
Display record data.

For details about how to display data, refer to Section 5.2.3, "Check and sign the recorded data"

Printing is performed for each recording group unit, and the data of the recording group currently being displayed is printed. Please select the recording group to be printed from the following (group change tab) and then print.



### STEP 2: Print the report



Click "Print Report" in the file menu.





The report print setting window is displayed.

Daily and monthly reports can be printed.

Set the "Print Direction", "Margin", etc., select the report type you want to print, and specify the range. In addition, you need to set the settings of "ON/OFF of the page No." and "Graph title" here.

For details on report print settings, refer to Section 6.3.4 "Report Print (Ver. 2.10 or later)".

※ When printing, it is recommended to execute a print preview and check the format actually printed before printing.

Report print

Set up the report printing.

Printer: [Printer Name] [Printer settings]

Print group: DISP\_GRP\_1

☒ ON/OFF of the page No.

Graph title: [Text Field]

Print information

Print direction: landscape Paper size: A4 (210 x 297 mm)

Display item

☒ Max./Min. ☒ Ave. ☒ Inst.

☒ Dairy report

☒ All Data 2016/02/27 00:01:54 - 2016/03/24 07:56:07

☐ Select time

Start day 2016/02/27 End day 2016/03/24

☐ Monthly report

☒ All Data 2016/02/27 00:01:54 - 2016/03/24 07:56:07

☐ Select time

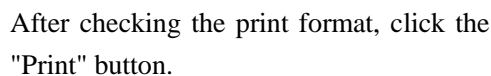
Start day 2016/02/27 End day 2016/03/24

First row: ☒ 1st of the month ☐ Start day

[Print preview] [Margin] [Print] [Cancel] [Apply]



The print window with the header and footer added is displayed. Margin setting on the preview window is possible. Changing the margin will update the preview window. If you want to set report print again, please click the "x (Close)" button in the upper right.



5-21

## 5.2.7 Display and print the Max. /Min. /Ave. for a specified period (For Ver. 2.10 or later)



### Caution

If the record type of the channel recorded by the main unit is "Max / Min", it is calculated as follows.

Max.: Calculated based on the "Max" data of the specified period.

Min.: Calculated based on the "Min" data of the specified period.

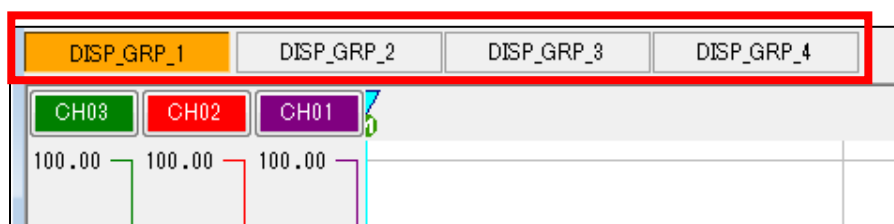
Ave.: Calculated as ("Max" + "Min") / 2 of the specified period.

### STEP 1 : Displaying (signing) record data

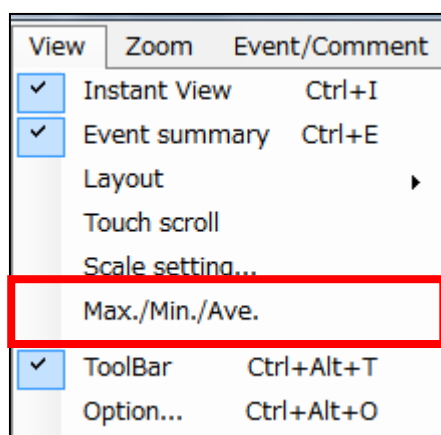
Display record data.

For details about how to display data, refer to Section 5.2.3, "Check and sign the recorded data"

Printing is performed for each recording group unit, and the data of the recording group currently being displayed is printed. Please select the recording group to be printed from the following (group change tab) and then print.



### STEP 2 : Display the Max. /Min. /Ave. for a specified period



Click "Max, Min, Average" in the display menu.







Max./Min./Ave.

Max./Min./Ave.  
☒ Max. ☒ Min. ☒ Ave.

Display group : DISP\_GRP\_SUB

Channel selection

☒ CH01(ABCDEFGH) ☒ CH02(あいうえ) ☒ CH03(試験試験) ☒ CH04(TAG04)  
☒ CH05(TAG05) ☒ CH06(TAG06) ☒ CH07(TAG07) ☒ CH08(TAG08)  
☒ CH09(TAG09) ☒ CH10(TAG10) ☒ CH11(TAG11) ☒ CH12(TAG12)

Period  
☒ All 2018/12/02 13:00:01 ~ 2018/12/04 15:00:00  
☐ Display range  
☐ Range specification  
 Start time 2018/12/02 13:00:01  
 End time 2018/12/04 15:00:00

Print  
☒ Front page ☒ Trend  
☐ ON/OFF of the page No.  
 Graph title:

OK Cancel

The setting window of Max./Min./Ave. is displayed.

Data, CH, and specify the data output range. Also, when printing after display, please set the item to be printed, the presence or absence of the page number, and the graph title.

After setting is complete. Click on the "OK" button.



Max./Min./Ave.

Period: 2018/12/02 13:00:01 ~ 2018/12/04 15:00:00

Display group : DISP\_GRP\_SUB

Ch No.	TAG No.	Max.		Min.		Ave.
		Time	Value	Time	Value	
CH1(mV)	ABCDEFGH	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17
CH2(mV)	あいうえ	2018/12/02 13:05:11	38.33	2018/12/02 13:02:12	30.00	34.17
CH3(°C)	試験試験	2018/12/02 13:05:12	330.8	2018/12/02 13:02:12	200.0	265.4
CH4(V)	TAG04	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17
CH5(V)	TAG05	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17
CH6(V)	TAG06	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17
CH7(V)	TAG07	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17
CH8(V)	TAG08	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17
CH9(V)	TAG09	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17
CH10(V)	TAG10	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17
CH11(V)	TAG11	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17
CH12(V)	TAG12	2018/12/02 13:05:11	-8.33	2018/12/02 13:02:08	-10.00	-9.17

Print preview Print Back OK

The calculated data of the specified period is displayed.

If you want to print, please click "Print" or "Print Preview".

\*When printing, it is recommended to execute a print preview and check the format actually printed before printing.

## 5.2.8 Register and edit batch information of recorded data

### Step 1: Register batch information

Get the file recorded with the paperless recorder and confirm the re

☐ Delete the original file.

15DS1234000,  
Batch

	Serial No.	Record type	Batch
▶	0DS4412051	Main record	
	15DS1234000	Main record	

When you click the recorder selection button enclosed in red frame, the manufacturing numbers of recorders from which data was imported are displayed.

When you click the recorder from which data was imported, the record data list appears.

If the list is not displayed, import record data according to Section 5.2.2, "Get record data to PC"

Click the "Edit" button.

Get the file recorded with the paperless recorder and confirm

☐ Delete the original file.

Batch

Get the file recorded with the paperless recorder and confirm the

☐ Delete the original file.

Batch

	Serial No.	Record type	Batch
▶	0DS4412051	Main record	TEST
	0DS4412051	Main record	
	0DS4412051	Main record	
	0DS4412051	Main record	
	0DS4412051	Main record	
	0DS4412051	Main record	
	0DS4412051	Main record	
	0DS4412051	Main record	

Double-click the batch information field for the record data you want to register and enter batch information. When you complete entering the information, click the "Save" button. Batch information is saved. Up to 64 one-byte characters can be entered for batch information.

\* Other buttons cannot be clicked until you click the "Save" or "Cancel" button.

### Step 2: Edit batch information

The registered batch information can be modified / edited. Please edit with the same operation as registering batch information.

## 5.2.9 Migrate the signed record data to another PC

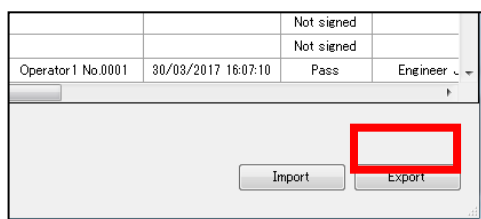
Perform this operation when purchasing a new PC or changing the environment for other reasons. (Usually, you do not have to perform the procedure in this section.)

### Step 1: Exporting record data

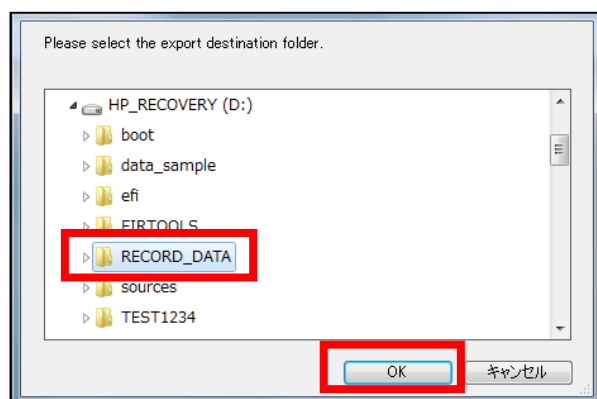
Output record data to another folder. You can output the data to an arbitrary folder. Record data in the output source folder is not deleted. The output source folder is the folder specified in "Extended security save destination folder" in "Option settings" in the View menu. For details about option setting, refer to Section 6.5, "Option".

This section describes how to output data to the "RECORD\_DATA" folder.

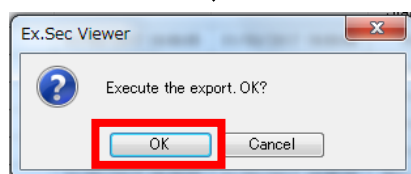
For details about export, refer to Section 5.3.2 I), "Export."



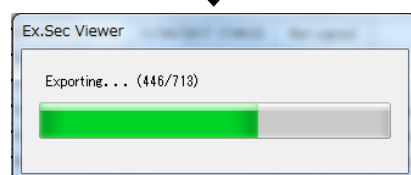
Click the "Export" button at the right bottom.



The screen as shown on the left appears. Select an arbitrary export destination (here, "RECORD\_DATA") and click the "OK" button.



Click the "OK" button.



Exporting starts and the progress bar appears.

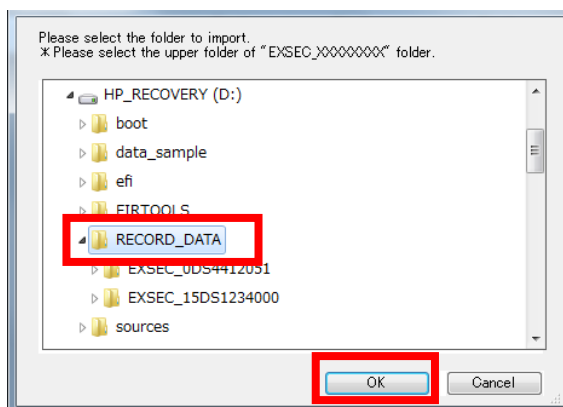
When the progress bar disappears, exporting is completed.

## Step 2: Importing record data

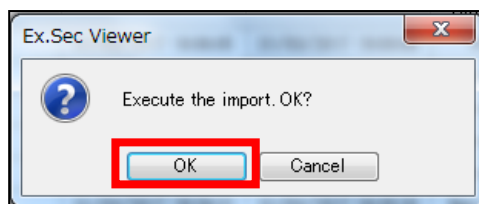
Import record data to the folder used in Ex.Sec Viewer. This section explains how to import from the folder "RECORD\_DATA" exported in STEP 1. Import record data from the folder specified in "Extended security save destination folder" in "Option settings" in the View menu. Record data in "RECORD\_DATA" is not deleted. For details about import, refer to Section 5.3.2 J), "Import"



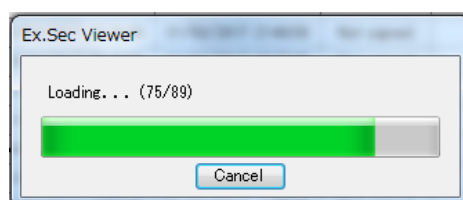
Click the "Import" button at the right bottom.



The folder reference screen appears. The "EXSEC\_XXXXXXXXXX" (manufacturing number) folder is a file that contains record data. Click the folder above this folder ("RECORD\_DATA" in this case) and click the "OK" button.



Click the "OK" button.



Importing starts and the progress bar appears. When the progress bar disappears, importing is completed.

## 5.3 Setting/Display

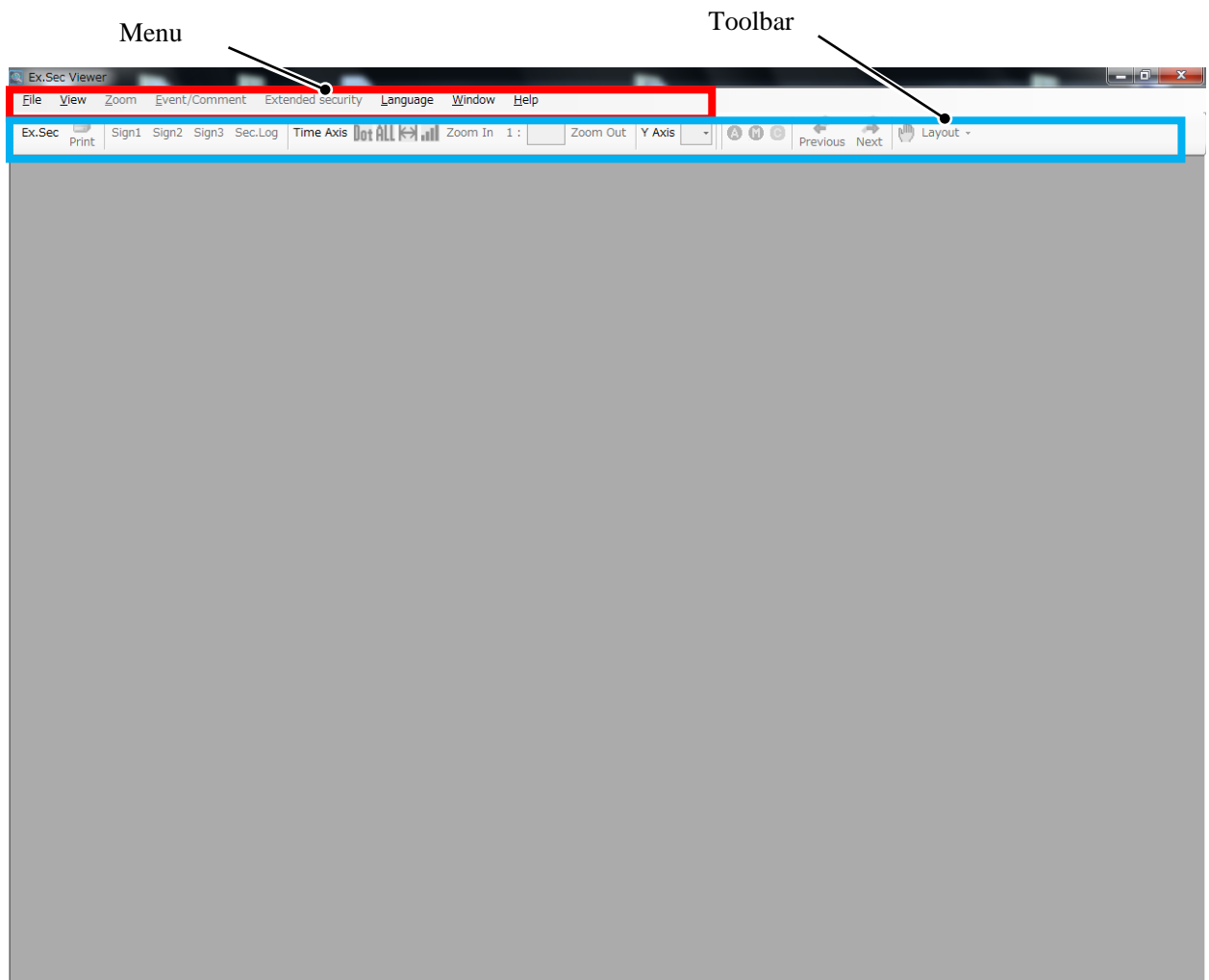
### 5.3.1 Basic display

This is the screen that appears when Ex.Sec Viewer starts up.

This screen displays the menu and toolbar. In order to Import and display measurement files, you first need to display extended security data list. For the extended security data list, refer to Section 5.3.2 "Extended security data list display".

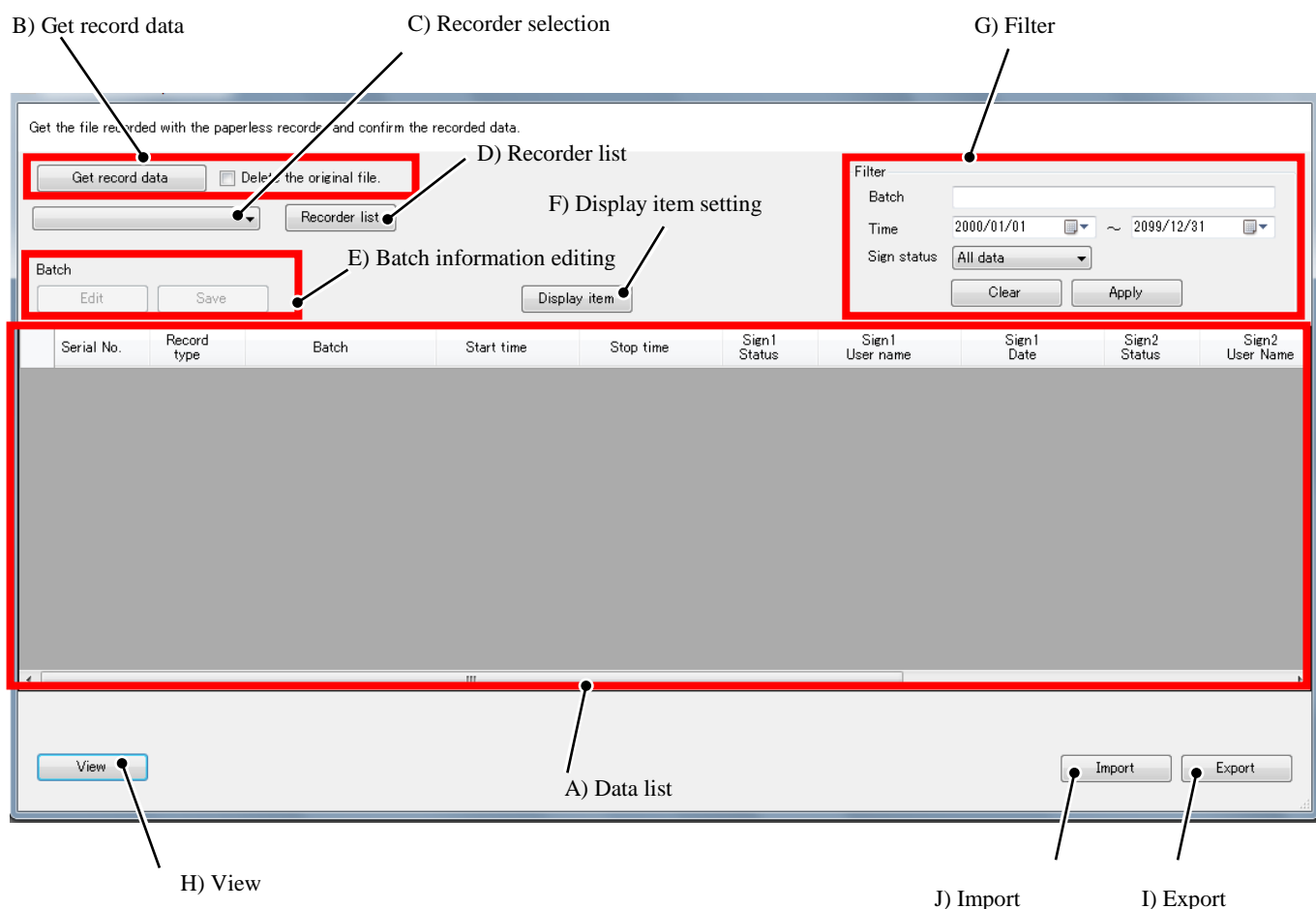
For details about the menu, refer to Section 5.4, "Menu"

For details about the toolbar, refer to Section 5.5, "Toolbar"



### 5.3.2 Extended security data list display

This screen appears when you click "Extended security data list" in the File menu on the basic screen or the "Ex.Sec" button on the toolbar. You check, sign, print record data or perform other operations from this screen. Each button and function is described below.



Letter	Button or function	Description
A)	Data list	List of record data in the selected recorder.
B)	Get record data	Use this button to import measurement data recorded with the recorder to the PC.
C)	Recorder selection	Use this button to select the recorder you want to check and list record data.
D)	Recorder list	Use this button to Displays the list of recorder imported in the PC.
E)	Batch information editing	Use this function to add batch information to imported record data.
F)	Display item setting	Use this button to display or hide items displayed in the data list.
G)	Filter	Use this function to filter record data displayed in the data list and display only necessary data.
H)	View	Use this button to display record data.
I)	Export	Use this button to copy imported record data and signed record data to another folder.
J)	Import	Use this button to copy data in the folder copied by the export operation to the import destination folder.

## A) Data list

List of record data in the selected recorder.

This list displays record data imported into the PC. You can also sort record data by item by clicking the item in the red frame. The latest record data is displayed first before sorting. The items displayed in the list can be omitted in F) "Display item".

The background color changes depending on the state of the recorded data. For details, refer to Section 5.3.7 "Display and operation in each state of the recorded".

Serial No.	Record type	Batch	Start time	Stop time	Sign1 Status	Sign1 User name	Sign1 Date	Sign2 Status	Sign2 User Name
0DS4412051	Main record		24/03/2017 16:12:05	24/03/2017 16:12:05	Not signed			Not signed	
0DS4412051	Main record		28/02/2017 11:39:41	28/02/2017 11:39:42	Not signed			Not signed	
0DS4412051	Main record		03/03/2017 14:46:51	03/03/2017 14:54:35	Not signed			Not signed	
0DS4412051	Main record		03/03/2017 15:14:57	03/03/2017 15:14:58	Not signed			Not signed	
0DS4412051	Main record		07/03/2017 14:04:09	07/03/2017 14:04:33	Not signed			Not signed	
0DS4412051	Main record		07/03/2017 14:29:33	07/03/2017 14:29:59	Not signed			Not signed	
0DS4412051	Main record		10/03/2017 16:00:51	10/03/2017 16:00:55	Not signed			Not signed	
0DS4412051	Main record		14/03/2017 18:22:38	14/03/2017 18:24:55	Not signed			Not signed	
0DS4412051	Main record		14/03/2017 18:40:41	14/03/2017 18:40:44	Not signed			Not signed	
0DS4412051	Main record		14/03/2017 18:41:03	14/03/2017 18:41:03	Not signed			Not signed	
0DS4412051	Main record		17/03/2017 09:45:08	17/03/2017 09:45:36	Not signed			Not signed	
0DS4412051	Main record		17/03/2017 09:45:39	17/03/2017 09:45:41	Not signed			Not signed	

No.	Item	Description
1	Manufacturing number	Displays the manufacturing number of selected recorder.
2	Record type	Displays the type of record data recorded with the recorder. There are main records and sub records.
3	Batch information	Displays batch information. Batch information can be arbitrarily added. For details on how to register batch information, refer to Section 5.2.8 "Register and edit batch information of recorded data".
4	Recording start time	Displays when recording started.
5	Recording end time	Displays when recording ended.
6	Sign status (signature)	Displays the sign status. Pass, Fail, or Not signed is displayed.
7	User name (signature)	Displays the name of the user who signed data.
8	Signing date/time (signature)	Displays the date/time when the user signed data.

## B) Get record data

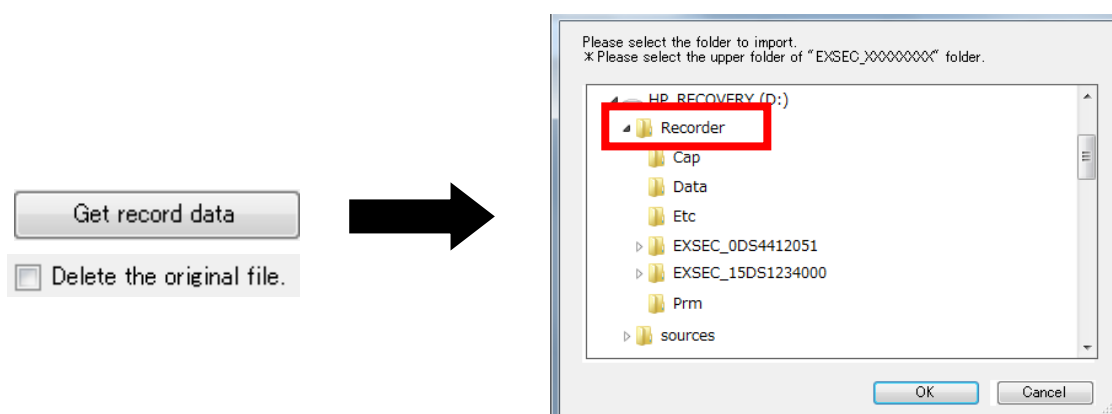
Get record data is the button to import information such as measurement data recorded with the recorder to the PC.

Imported record data is saved in the folder specified in "Extended security save destination folder" in "Option settings" in the View menu. For details about Option settings, refer to Section 6.5 "Option".

### [Operation]

When you click the "Get record data" button, the following window to select the imported folder appears. To import measurement data recorded in the recorder, select "Recorder" in the SD card and click the "OK" button. Select the "☐Delete the original file." check box to delete the original data after importing it.

For details about how to import data, refer to Section 5.2.2, "Get record data to PC."



## C) Recorder selection

Use this button to Recorder selection of which record data you want to display.

You can check the serial number below.

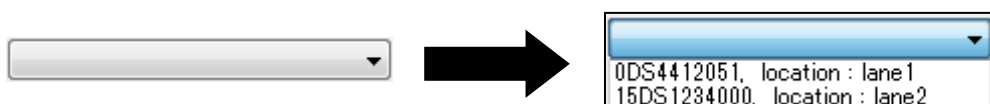
- It is described as S / N on the nameplate of the recorder.
- It is displayed as serial number in "System " → "Version" in the recorder setting.

### [Operation]

When you click the recorder selection button, the recorders from which data was imported into the PC are displayed as shown below.

When detailed information (memo) edited in the recorder list has been added, the information is displayed in the format of "manufacturing number, detailed information (memo)." When the information has not been added, "manufacturing number," is displayed. (The comma is always displayed.)

When you select a recorder, record data is displayed in the data list.





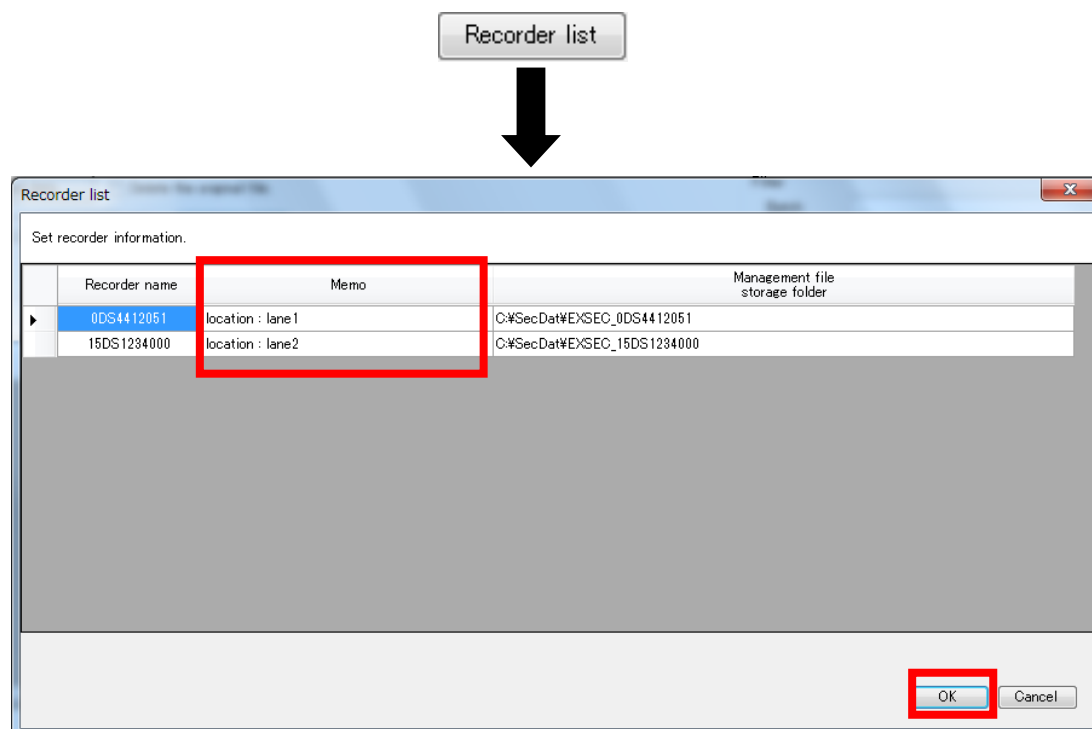
## D) Recorder list

The list of recorder imported to the PC is displayed.

You can arbitrarily add detailed information (Memo) such as the installation location of the recorder to make it easy to identify recorders. This is convenient for example when operating multiple recorders. This detailed information(Memo) is printed as well. This is not a required setting item. Up to 24 one-byte characters can be entered for detailed information(Memo).

### [Operation]

When you click the "Recorder list" button, the recorders from which data was imported into the PC are displayed as shown below. Enter detailed information in the memo field for each recorder and click the "OK" button to reflect information.



## E) Edit batch information

Use this button to add batch information to imported record data.

You can make it easy to identify record data by registering the test name and other information. Up to 64 one-byte characters can be entered. This detailed information is printed as well.

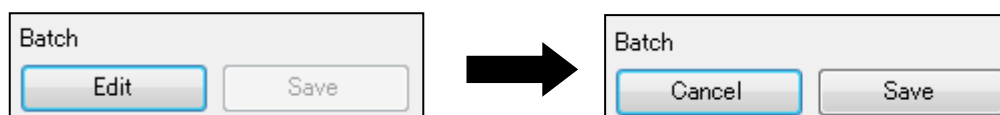
### [Operation]

Click the "Edit" button to make batch information for each record data editable.

When you complete editing the information, click the "Save" button to register the batch information.

Not to register the information, click the "Cancel" button.

For details about how to edit batch information, refer to Section 5.2.8, "Register and edit batch information of recorded data"



## F) Display item

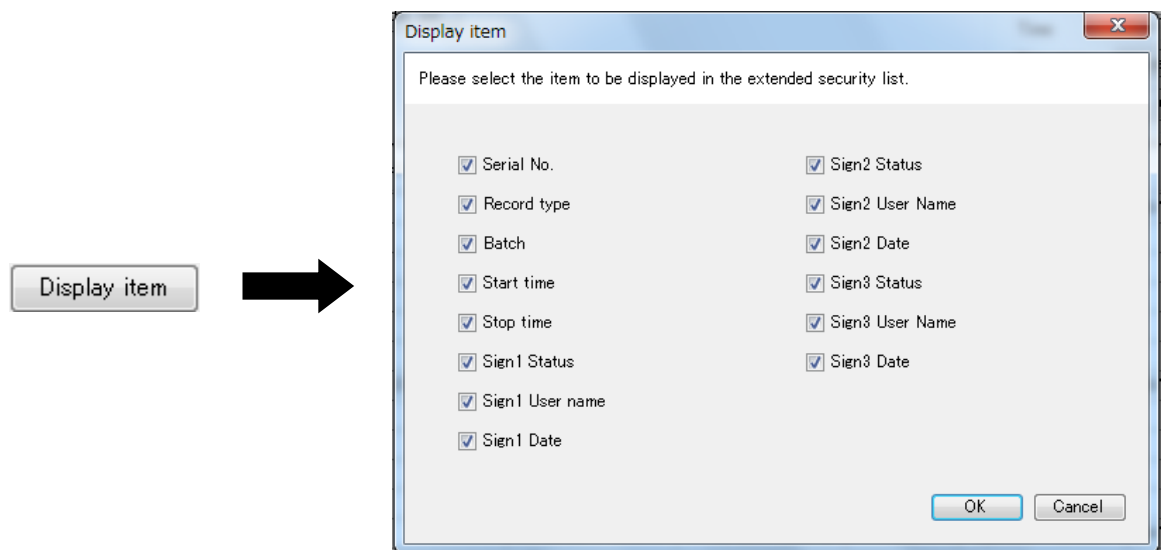
This section describes how to display or hide items displayed in the data list.

By default, all the items are displayed. The status set here is saved and the same display settings are used at the next software startup.

[Operation]

When you click the "Display item" button, the following window appears.

Clear the check boxes for the items you want to hide and click the "OK" button.



## G) Filter

This function can be used to filter record data displayed in the data list and display only necessary data.

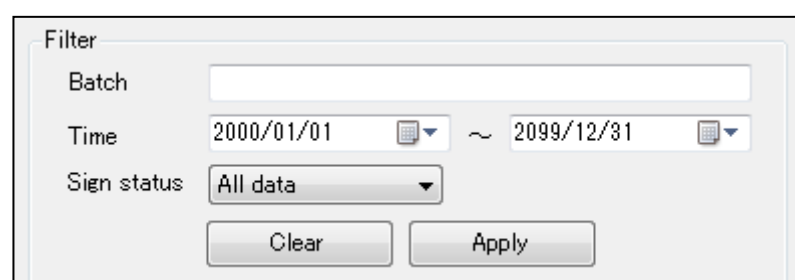
You can filter data with batch information, period, and sign status. The filter function is an AND filter using three items.

[Operation]

Enter each filter item and click the "Apply" button.

To clear the edited filter, click the "Clear" button. In this case, clicking the "Apply" button displays all the data.

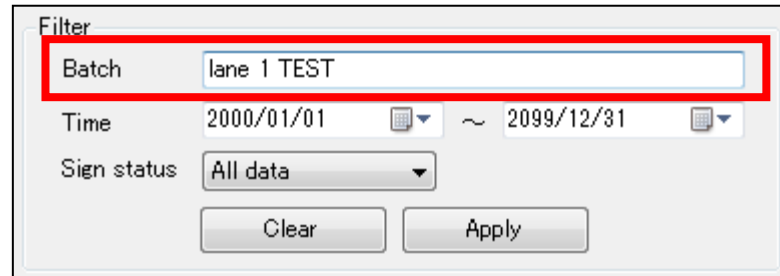
Each filtering method is listed on the next page.



(1) Filtering data only with Batch

Click the "Clear" button once.

Edit the Batch filter only and click the "Apply" button. The Batch filter allows for AND search by inserting a space between character strings as with the web search engine.

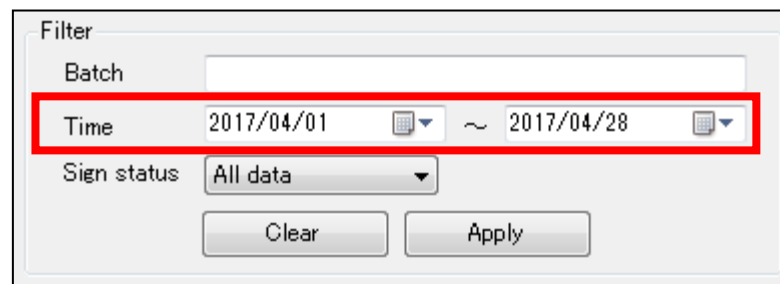


The screenshot shows a 'Filter' dialog box with three input fields: 'Batch', 'Time', and 'Sign status'. The 'Batch' field contains the text 'lane 1 TEST' and is highlighted with a red rectangular box. The 'Time' field shows a date range from '2000/01/01' to '2099/12/31'. The 'Sign status' field is set to 'All data'. At the bottom are 'Clear' and 'Apply' buttons.

(2) Filtering data only with the Time

Click the "Clear" button once.

Edit the Time filter only and click the "Apply" button.



The screenshot shows the 'Filter' dialog box. The 'Time' field, which displays a date range from '2017/04/01' to '2017/04/28', is highlighted with a red rectangular box. The 'Batch' field is empty, and the 'Sign status' field remains set to 'All data'. 'Clear' and 'Apply' buttons are at the bottom.

(3) Filtering data only with the Sign status

Click the "Clear" button once.

Edit the Sign status filter only and click the "Apply" button.

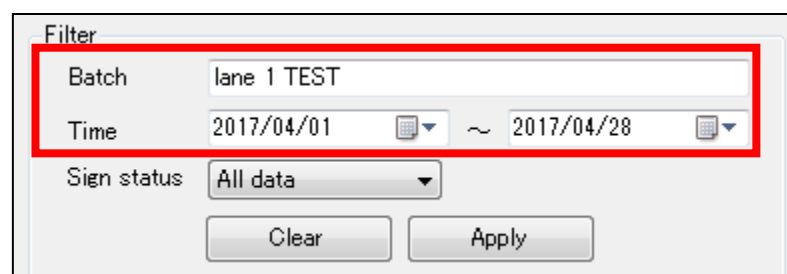


The screenshot shows the 'Filter' dialog box. The 'Sign status' dropdown menu, which is currently set to 'Sign1 not signed', is highlighted with a red rectangular box. The 'Batch' field is empty, and the 'Time' field shows the default date range '2000/01/01' to '2099/12/31'. 'Clear' and 'Apply' buttons are at the bottom.

(4) Filtering data with Batch and Time

Click the "Clear" button once.

Edit Batch and Time filter and click the "Apply" button.



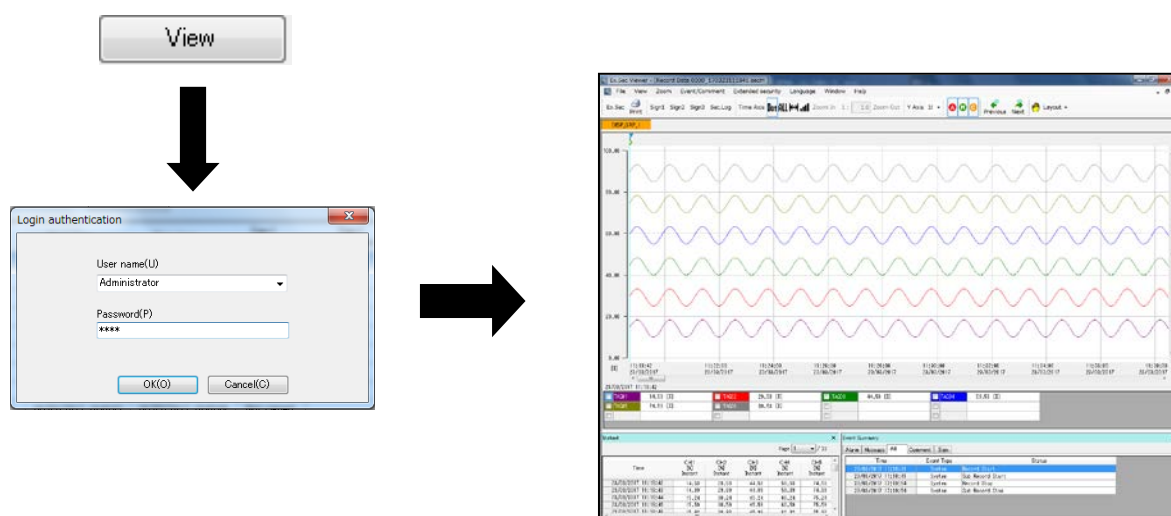
The screenshot shows the 'Filter' dialog box. Both the 'Batch' field (containing 'lane 1 TEST') and the 'Time' field (showing '2017/04/01' to '2017/04/28') are highlighted with a red rectangular box. The 'Sign status' field is set to 'All data'. 'Clear' and 'Apply' buttons are at the bottom.

## H) View

This section describes the button used to display record data. You can check record data after login authentication.

[Operation]

Select record data you want to display and click the "View" button. The software does not operate even if you click the "View" button without selecting record data. For details about how to check record data, refer to Section 5.2.3, "Check and sign the recorded data"



### I) Export

Use this button to copy imported record data and signed record data to another folder. The export processing outputs all information such as recording data, recorder information, batch information etc.

Use this button for example when migrating data or folders when purchasing a new PC or for other purpose.

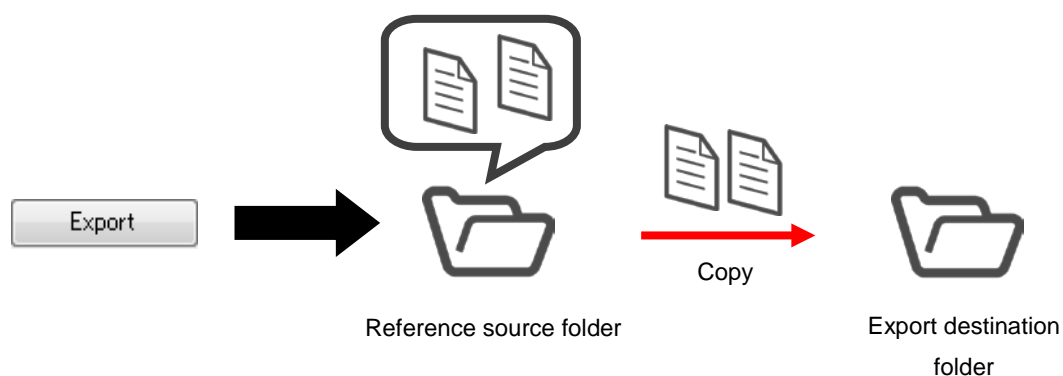
Use this button with the import function.

[Operation]

Click the "Export" button and select the destination folder to start exporting.

For details about how to export data, refer to Section 5.2.9, "Migrate the signed record data to another PC"

\*Original data is not deleted.



## J) Import

Use this button to copy data in the folder copied by the export operation to the import destination folder.

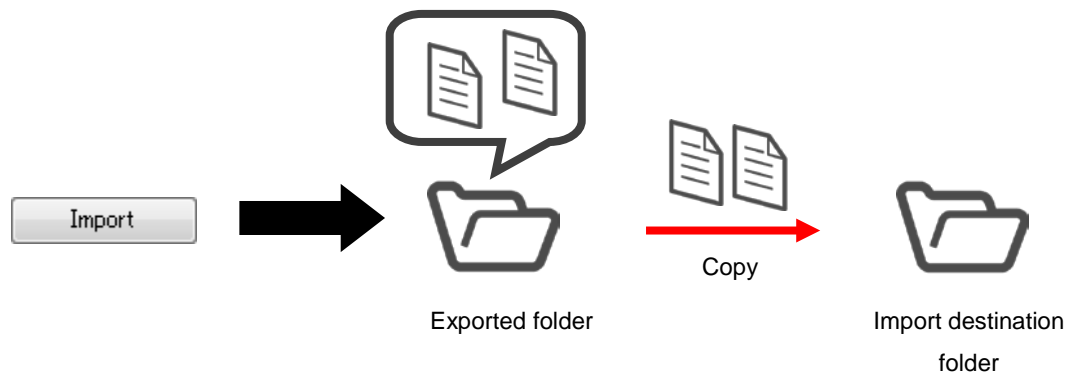
Use this button for example when migrating data or folders when purchasing a new PC or for other purpose.

[Operation]

Click the "Import" button and select the original folder to start importing.

For details about how to import data, refer to Section 5.2.9, "Migrate the signed record data to another PC".

\*Original data is not deleted.



### 5.3.3 Login authentication

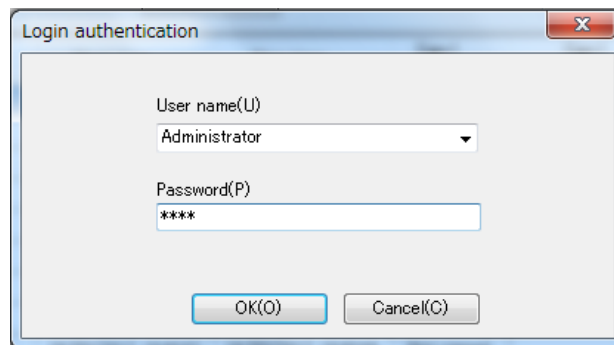
This section describes the screen for login authentication.

Enter the user name and password and log in.

- \*- If login authentication fails ten times, the login authentication screen is forcibly closed.
- Both the user name and the password are case sensitive.

The login authentication screen appears when you perform the following operations:

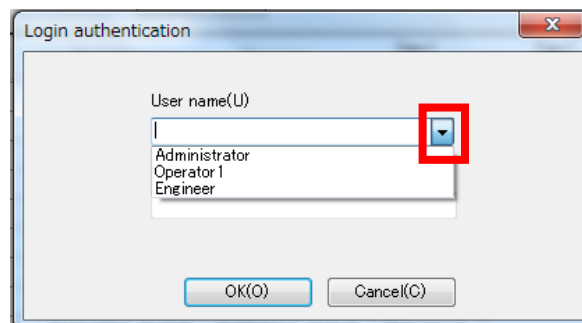
- Displaying record data
- Signing data



You can select or type the user name. You can select how to specify the user name from View - Option settings on the menu. For details about Option settings, refer to Section "Option".

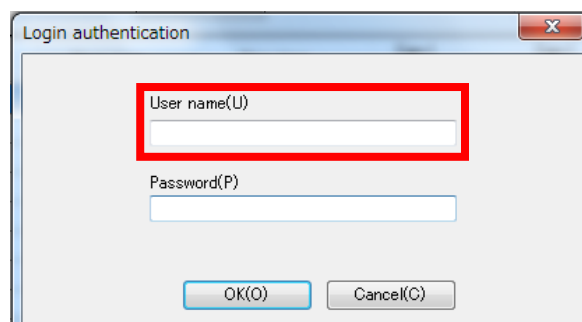
- Selecting method

When you click the arrow, selectable users are displayed. Select a login user.



- Typing method

Manually enter the login user name in the user name entry field.



### 5.3.4 Trend display

This section describes the screen for displaying record data.

For details about how to display the trend screen, refer to Section 5.2.3, "Check and sign the recorded data"

For details about how to set up or operate the trend screen, refer to Chapter 6, " Ex.Sec Viewer -CONTROL-".



### 5.3.5 Signature

This section describes the screen for signing data.

One to three users can sign data. Sign 1, Sign 2, and Sign 3 do not have the concept of levels. Arbitrarily assign meanings to signatures and use them. You can employ the flexible signature operation. For example, the same account can be used to make Sign 1 and Sign 2 signatures.

After signatures are made, they are applied to the [Sign] tab in Event Summary or "Sign 1," "Sign 2," and "Sign 3" in Extended security on the menu, for example. For details about how to sign data, refer to Section 5.2.3, "Check and sign the recorded data"

The 'Sign' dialog box is shown with the following fields and values:

- User name: Administrator Bob
- Sign status: Pass (indicated by a dropdown arrow)
- Comment: Approved

Buttons: OK, Cancel

Callouts:

- (1) Sign status: points to the 'Sign status' dropdown.
- (2) Comment: points to the 'Comment' text box.

#### (1) Sign status

Enter the evaluation of record data.

Select Pass or Fail.

#### (2) Comment

Enter an arbitrary comment suitable for the signature.

Up to 52 one-byte characters can be entered.

#### - Sign status display in Event Summary

The sign status display in Event Summary displays the sign status, user name, arbitrary text, date, and comment.

Status : Pass, Fail, or Not signed.

User name : The name of the user who signed data.

Note : Arbitrary text you specified when registering the user in the recorder.

Date : date of signing data.

Comment : The text you entered in the comment field when signing data.

Event Summary					
Alarm	Message	All	Comment	Sign	
	Status	User name	Note	Date	Comment
Sign1	Pass	Operator1	No.0001	05/04/2017 18:51:33	TEST fin.
Sign2	Pass	Administrator	Bob	05/04/2017 18:52:01	Approved
Sign3	Not signed				



- Permitting/prohibiting the signature by the user account

If signature by the user account is prohibited, the following window appears and the user cannot sign data.

To permit signature by the user account, you must set the permission by registering the user account in the recorder. You must set the permission before starting recording. For details about how to set the permission, refer to Section 4.2.5, "Permitting the electronic signature using the user account."



- Examples of signatures

Examples of signatures are shown below.

#### Example 1

Signs 1 to 3 are used by different accounts.

Event Summary						
Alarm	Message	All	Comment	Sign		
	Status	User name	Note	Date	Comment	
Sign1	Pass	Operator1	No.0001	05/04/2017 18:47:56	TEST fin.	
Sign2	Pass	Engineer	John	05/04/2017 18:48:23	confirmed	
Sign3	Pass	Administrator	Bob	05/04/2017 18:49:48	Approved	

#### Example 2

Signs 1 and 2 are used by different accounts. Sign 3 is not used.

Event Summary						
Alarm	Message	All	Comment	Sign		
	Status	User name	Note	Date	Comment	
Sign1	Pass	Operator1	No.0001	05/04/2017 18:51:33	TEST fin.	
Sign2	Pass	Administrator	Bob	05/04/2017 18:52:01	Approved	
Sign3	Not signed					

#### Example 3

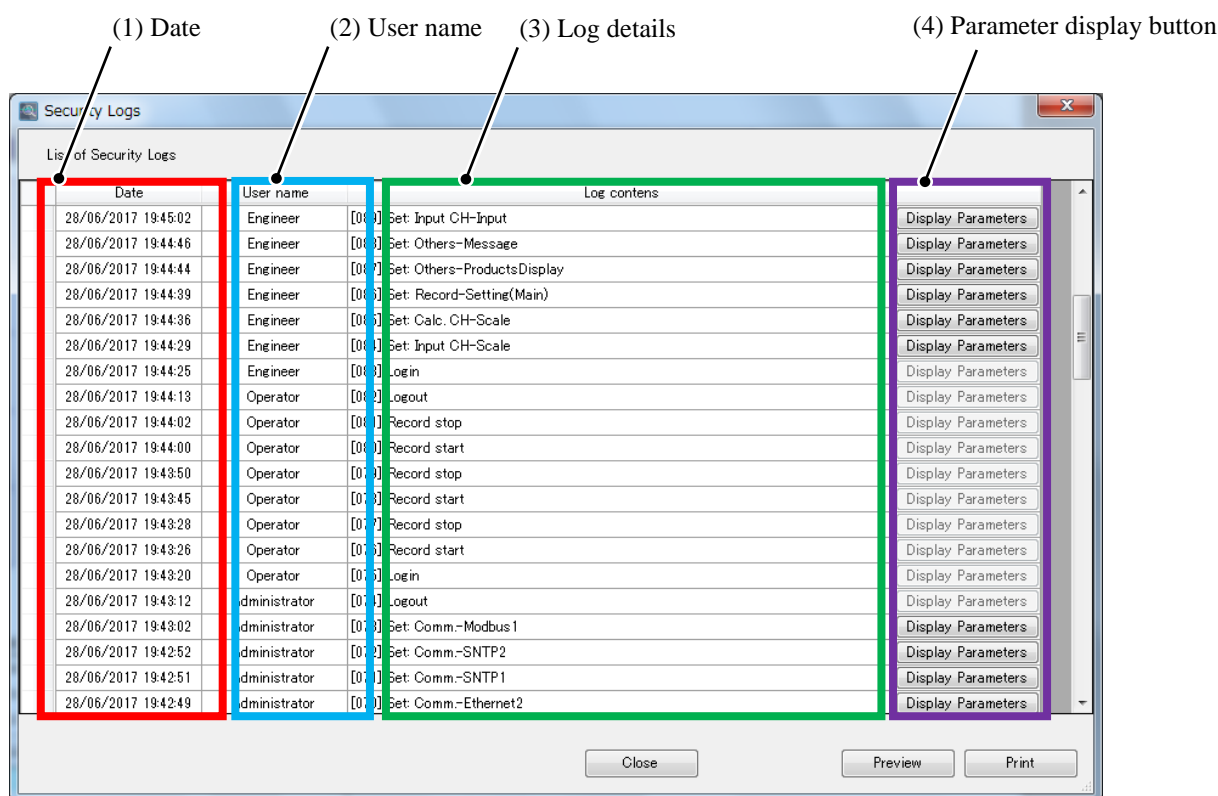
Signs 1 and 2 are used by the same account and Sign 3 is used by another account.

Event Summary						
Alarm	Message	All	Comment	Sign		
	Status	User name	Note	Date	Comment	
Sign1	Pass	Engineer	John	05/04/2017 19:04:19	TEST fin.	
Sign2	Pass	Engineer	John	05/04/2017 19:04:55	confirmed	
Sign3	Pass	Administrator	Bob	05/04/2017 19:05:25	Approved	

### 5.3.6 Security log display

This section describes the screen for checking audit trails. You can check and print the operation log of imported record data.

For details about how to display data, refer to Section 5.2.4, "Check and print the audit trail (security log)". Security logs can be also printed. For details about printing, refer to Section 6.3.3 "Security log Print"



(1) Date

Displays the date/time when the setting or operation is performed.

(2) User name

Displays the account name used to perform the setting or operation.

(3) Log details

Displays the log number and details of executed setup and operations.

The log number is the number for each setting or operation log ([000] to [999]).

For details about when each log is generated, refer to Appendix 2, "List of security logs".

(4) Parameter display button

The button is effective only when the parameter log file corresponding to the security log is saved. When the button is pushed, the support software "Parameter Loader" is activated and the contents of the target parameter are displayed. For parameter log file, refer to Section 4.5.4 "Parameter log file".

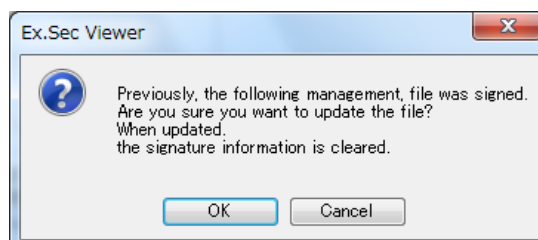
### 5.3.7 Display and operation in each state of the recorded data

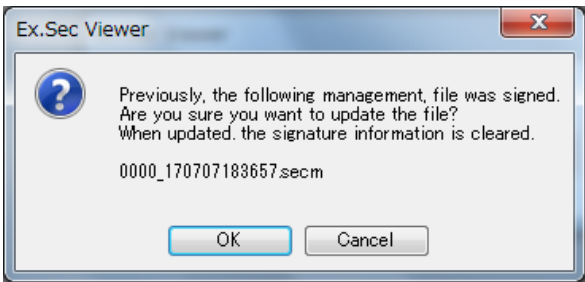
This section describes the display and operation of Section 5.3.2 A) "Data list".

Depending on the state of the recorded data, the background color of the data list display differs.

Depending on each state, the next recording data acquisition, display and signature operation will differ.

background color	Description	Action
White	Represents data that has been recorded. (*)	<p>At the next recording data import :</p> <p>→Recorded data is not updated. Signature information is also not cleared.</p> <p>Display :</p> <p>→Can display. If it can't be displayed, there is a possibility that the data has been falsification.</p> <p>Signature :</p> <p>→Can sign.</p>
Green	Represents data that recording is incomplete.	<p>At the next recording data import :</p> <p>→The recorded data is updated. When recording is completed, the background color turns white.</p> <p>Display :</p> <p>→Can display. If it can't be displayed, there is a possibility that the data has been falsification.</p> <p>Signature :</p> <p>→Can sign. When signing, the following message will be displayed.</p> <p>After signing, the background color turns yellow.</p>



background color	Description	Action
Yellow	Represents data that has signed data with incomplete recording.	<p>At the next recording data import :</p> <p>→Recorded data may be updated. When you update, the signature information is cleared. When updating, the following message will be displayed.</p>  <p>Display :</p> <p>→Can display. If it can't be displayed, there is a possibility that the data has been falsification.</p> <p>Signature :</p> <p>→Can sign. You can sign up to 3 people.</p>
Gray	Represents data with falsification or corruption.	<p>At the next recording data import :</p> <p>→Recorded data is not updated.</p> <p>Display :</p> <p>→Can't display.</p> <p>Signature :</p> <p>→Can't sign.</p>

(\*) A file that has been completely recorded shows the following data

1. The data that generated by recording stop operation (Power off operation during recording is also included.)

2. The data that number of files under management reaches the upper limit

Example 1 : Record cycle ; 1 second、File rec cycle ; 1 hour

→The number of files under the management reaches the upper limit by a record for 50 hours.

Example 2 : Record cycle ; 1 second、File rec cycle ; 1 day

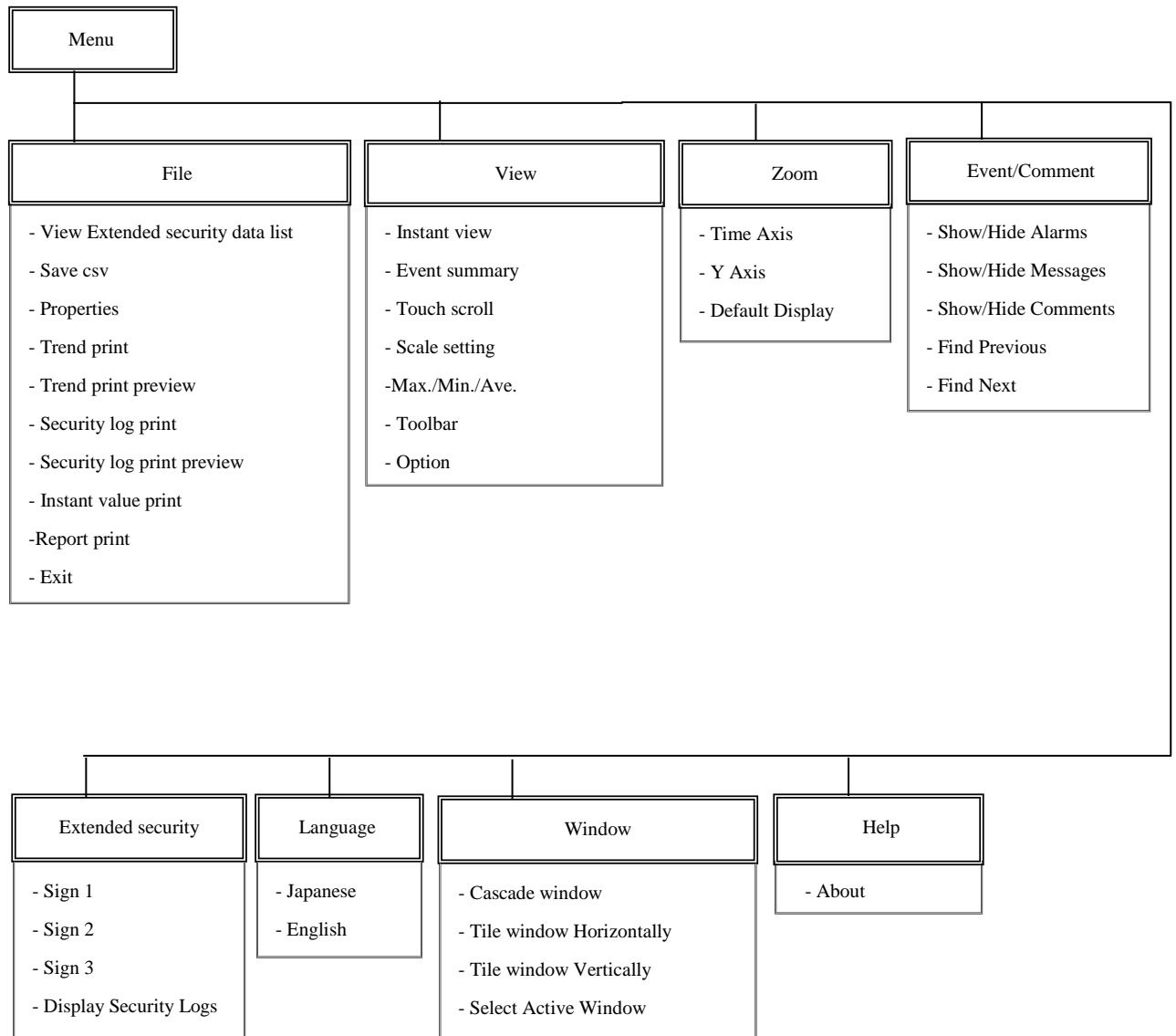
→The number of files under the management reaches the upper limit by a record for 50 days.

### [Note]

If you sign a data with incomplete recording, the signature information is cleared the next time you import the file. It is recommended that you sign only data that have been recorded completely.

## 5.4 Menu

The menu categories are File, View, Zoom, Event/Comment, Extended security, Language, Window, and Help. The menu list is shown below.



## 5.4.1 File

The File menu is used for file-related, printing, and other operations.

Item	Shortcut key	Contents
View Extended security data list	-	This is the home window for importing recorded data, confirming, signing, etc.
Save csv	-	The data of the currently displayed trend display is output to the CSV file. (For details, refer to Section 6.4.1 "Save csv".)
Properties	Ctrl + Q	Displays file information of the active trend window. (For details, refer to Section 6.4.2 "Properties".)
Trend print	Ctrl + P	Prints file information of the active trend window. (For details, refer to Section 6.3.1 C) "Trend print".)
Trend print preview	-	Perform the above print preview. (For details, refer to Section 6.3.1 A) "Trend print preview".)
Security log print	-	Print security log of recorded data currently being displayed. (For details, refer to Section 6.3.3 B) "Security log print".)
Security log print preview	-	Perform the above print preview. (For details, refer to Section 6.3.3 A) "Security log print preview".)
Instant value print	-	Print instant value of the recorded data currently being displayed. (For details, refer to Section 6.3.2 "Instant value print".)
Report print	-	Print report of recorded data currently being displayed. (For details, refer to Section 6.3.4 "Report print".)
Exit	-	End the Ex.Sec Viewer.

## 5.4.2 View

The View menu is used for display-related settings and operations and to display real-time trends.

Item	Shortcut key	Contents
Instant view	Ctrl + I	Shows or hides the instant value display area in the active trend window. If instant values are already displayed, the menu item is preceded by a check (☑).
Event summary	Ctrl + E	Shows or hides the event summary area in the active trend window. If the event summary is already displayed, the menu item is preceded by a check (☑).
Layout	-	Changes the layout positions of the trend display, instant value display, and event summary display areas in the active trend window. There are five layout patterns. (For details, refer to Section 6.2.1 B) "Changing Layout".)
Touch scroll	-	Enables or disables the touch scroll function in the active trend window. If it is enabled, the menu item is preceded by a check (☑). (For details, refer to Section 6.2.1 C) "Touch scroll".)
Scale setting	-	Opens the Set Scale dialog. (For details, refer to Section 6.2.1 C) "Scale setting".)
Max./Min./Ave.	-	Display Max. /Min. /Ave. of recorded data currently being displayed. (For details, refer to Section 6.2.4 "Max./Min./Ave.".)
Toolbar	Ctrl + Alt + T	Shows or hides the toolbar. If it is displayed, the menu item is preceded by a check (☑).
Option	Ctrl + Alt + O	Opens the Set Options dialog. (For details, refer to Section 6.5 "Option".)

## 5.4.3 Zoom

The Zoom menu is used for zoom-related operations.

Item	Shortcut key	Contents
Time Axis	Dot by Dot : Ctrl + D Whole view : Ctrl + Z Point to point : Ctrl + T Manual zoom : Ctrl + N	Selects a time-axis zoom type in the active trend window. The menu item corresponding to the selected zoom type is preceded by a check (☑). (For details, refer to Section 6.2.2 A) "Time-axis Zoom".)
Y Axis	100% : F1 125% : F2 200% : F3 400% : F4 1000% : F5	Selects a Y-axis zoom type in the active trend window. The menu item corresponding to the selected zoom type is preceded by a check (☑). (For details, refer to Section 6.2.2 B) "Y-axis Zoom".)
Default Display	Ctrl + R	Resets the current zoom state in the active trend window to the default state. (For details, refer to Section 6.2.2 C) "Default display".)

## 5.4.4 Event/Comment

The Event/Comment menu is used for event or comment-related operations.

Item	Shortcut key	Contents
Show/Hide Alarms	Ctrl + A	Shows or hides alarm events in the trend display area in the active trend window. If they are displayed, the menu item is preceded by a check (☑).
Show/Hide Messages	Ctrl + M	Shows or hides message events in the trend display area in the active trend window. If they are displayed, the menu item is preceded by a check (☑).
Show/Hide Comments	Ctrl + C	Shows or hides comments in the trend display area in the active trend window. If they are displayed, the menu item is preceded by a check (☑).
Find Previous	Ctrl + "←" (left to cursor key)	Searches the event/comment search results from the cursor position in the backward direction on the time axis for the nearest record and moves the cursor to that record.
Find Next	Ctrl + "→" (right to cursor key)	Searches the event/comment search results from the cursor position in the forward direction on the time axis for the nearest record and moves the cursor to that record.

## 5.4.5 Extended security

Signatures and security logs are displayed.

Item	Shortcut key	Contents
Sign 1	-	Makes the signature in Sign 1. After signing is completed, the sign status and signature date/time are displayed and Sign 1 becomes no longer available.
Sign 2	-	Makes the signature in Sign 2 After signing is completed, the sign status and signature date/time are displayed and Sign 2 becomes no longer available.
Sign 3	-	Makes the signature in Sign 3 After signing is completed, the sign status and signature date/time are displayed and Sign 3 becomes no longer available.
Display Security Logs	-	Displays the security log.

## 5.4.6 Language

The Language menu is used for language selection.

Item	Shortcut key	Contents
Japanese	-	Selects Japanese for display.
English	-	Selects English for display.

## 5.4.7 Window

The Window menu is used to specify how to arrange windows and to select the active window.

Item	Shortcut key	Contents
Cascade window	-	Arranges open sub-windows so that they are obliquely cascaded.
Tile window Horizontally	-	Arranges open sub-windows horizontally so that they are equally spaced.
Tile window Vertically	-	Arranges open sub-windows vertically so that they are equally spaced.
Select Active Window	-	All open sub-windows are registered with a menu here (*1). The selected sub-window will become the active window. The menu item corresponding to the active window is preceded by a check (☑).

\*1 This menu is not displayed if there is no open sub-window.

## 5.4.8 Help

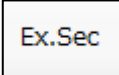




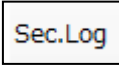









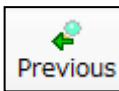
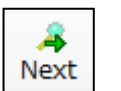

The Help menu is used to display version information.

Item	Shortcut key	Contents
About	-	Displays information on the version of the Ex.Sec Viewer



## 5.5 Toolbar

You can perform the same operations as when using some menus just by clicking the corresponding icon on the toolbar. The following actions can be executed.

Icon	Description	Reference
	Displays the extended security data list.	Section 5.3.2 "Extended security data list display"
	Perform trend printing.	Section 6.3.1 "Trend print"
  	Makes a signature. You can click these icons only while record data is displayed.	Section 5.3.5 "Signature"
	Displays the security log. You can click these icons only while record data is displayed.	Section 5.3.6 "Security log display"
	Displays the trend in the standard size in the dot unit.	Section 6.2.2 A) "Time-axis Zoom"
	Displays the whole trend.	
	Displays the trend between the specified start and end points. The range can be selected by dragging the graph display section with the mouse.	
 	Specify the zooming ratio by entering a numerical value that indicates the ratio of the X axis assuming that the Y axis is 1.	
	Select the display ratio on the Y axis. You can select "100%," "125%," "200%," "400%," or "1000%" as the ratio.	Section 6.2.2 B) "Y-axis Zoom"
  	Displays/hides each event mark on the trend graph.	Section 6.2.3 A) "Showing or Hiding Events"
 	Searches for and moves to the event mark position.	Section 6.2.3 B) "Event search"
	You can scroll the trend graph by dragging it with the mouse.	Section 6.2.1 C) "Touch scroll"

# 6.Ex.Sec Viewer – CONTROL –

## 6.1 Basic Layout of Trend Window

### 6.1.1 Screen Layout

The trend window layout is described below.



#### (1) Title bar

Shows the path of the open record trend file. It also includes buttons used to maximize, minimize, close, and otherwise operate the window.

#### (2) Group selection tab

Used to select the display group.

#### (3) Trend area

Graphically shows trend data. The trend area works in one of two modes: vertical trend and horizontal trend.

#### (4) Instant value area

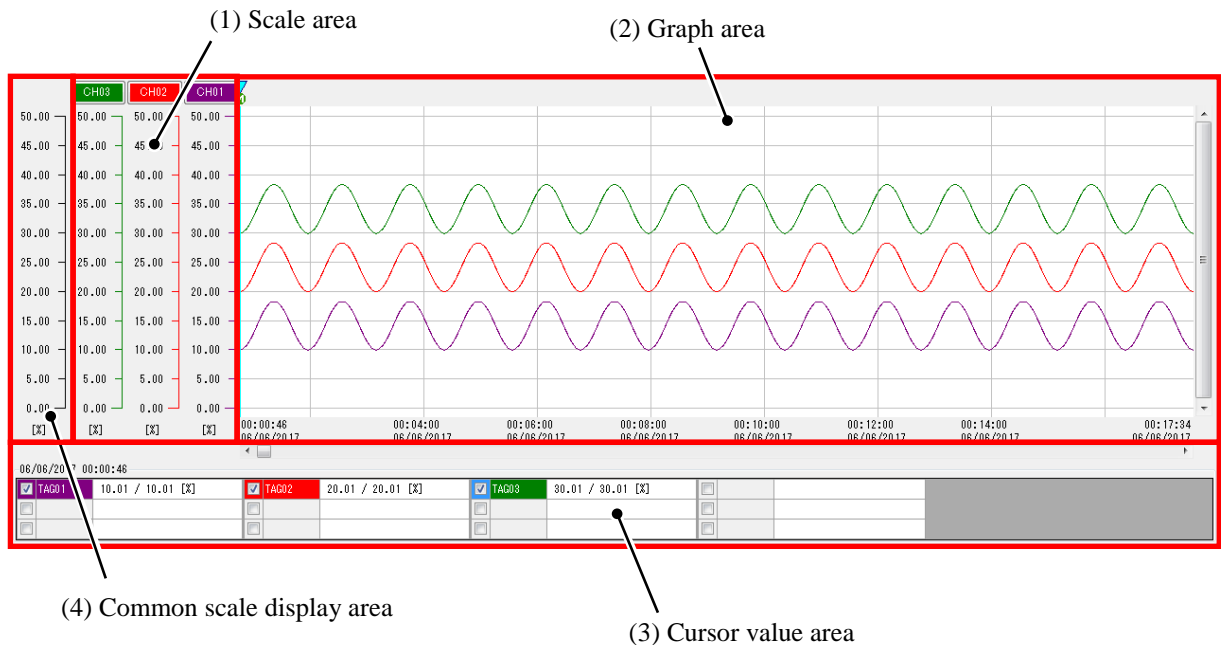
Shows a list of instant trend data values.

#### (5) Event summary area

Shows a list of event data and comments included in the trend data. You can also perform search operation here. You can also check the signature here.

## 6.1.2 Trend area

This area is roughly divided into three components: Scale area, Graph area, Cursor value area



### (1) Scale area

Shows scale plates. For details, refer to Section 6.1.2 A)"Scale area ".

### (2) Graph area

Graphically shows trend data. For details, refer to Section 6.1.2 B)"Graph area ".

### (3) Cursor value area

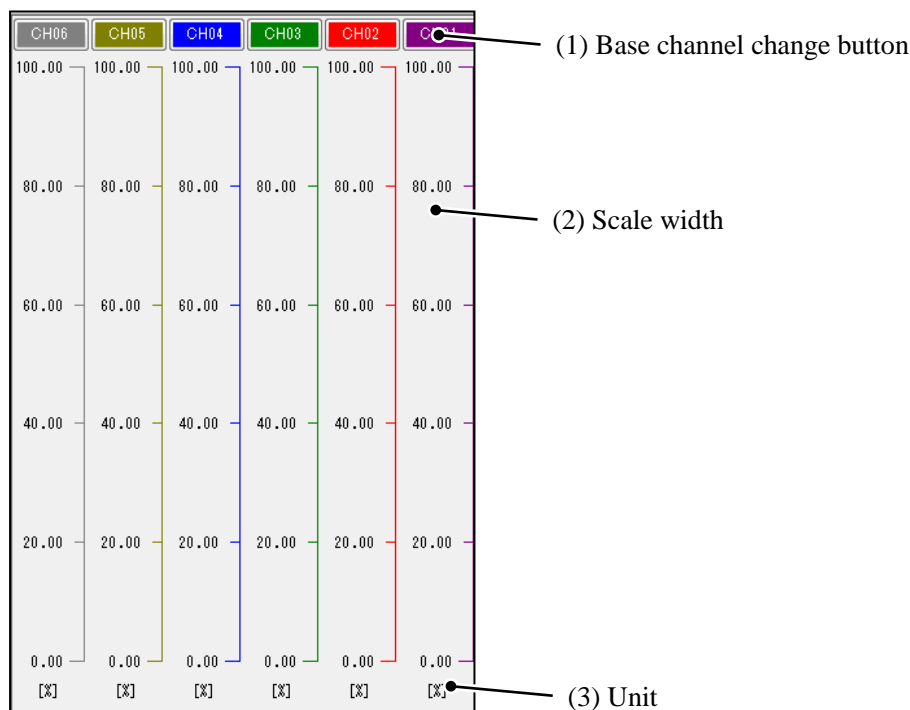
Shows measurement values at the cursor position as digital information. For details, refer to Section 6.1.2 C)"Cursor Value Area".

### (4) Common scale display area

The common scale used by all the channels in a group is displayed. For details, refer to Section 6.1.2 D) "Common scale display area ".

## A) Scale area

This area shows the scales of the channels registered with the display group. The rightmost scale works as the first scale, from which dividing lines are drawn.



### (1) Base channel change button

When you click this button, the corresponding channel moves to the right (first scale position). When you place the cursor onto the button, the tag name of the corresponding channel pops up.

### (2) Scale width

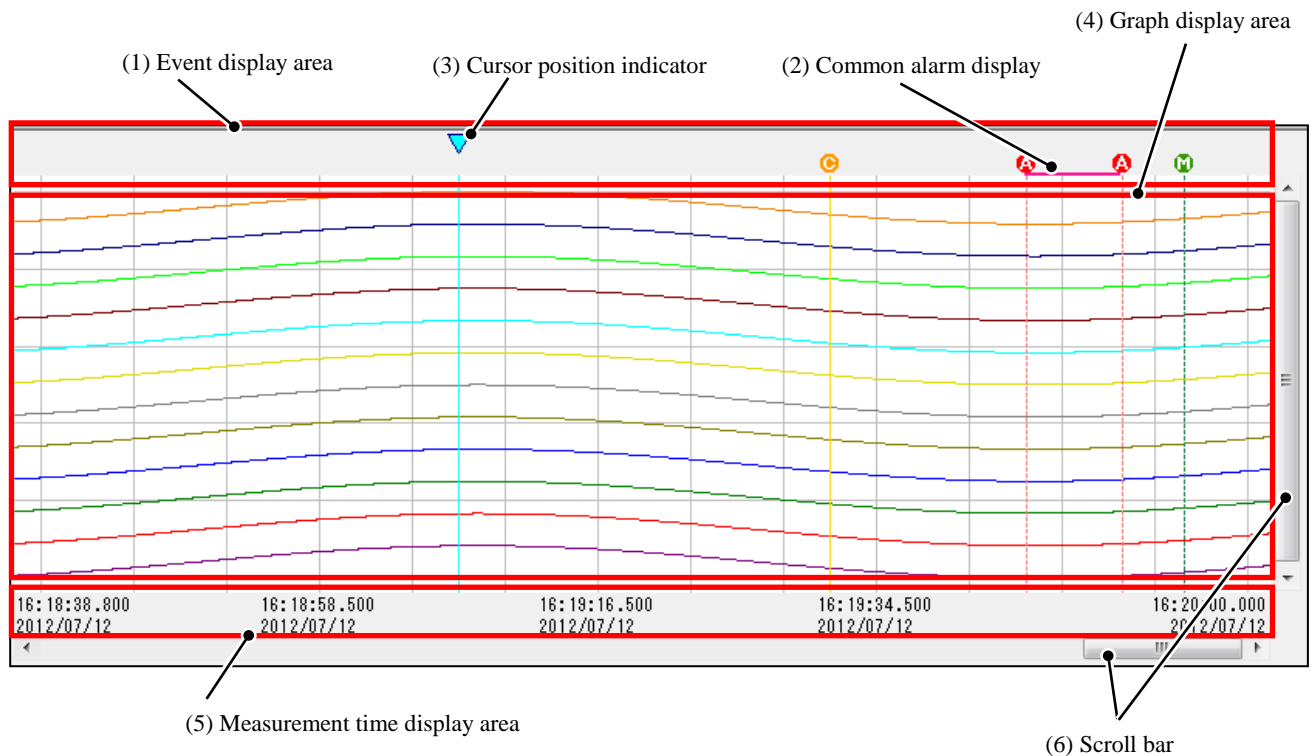
Shows the scale width assigned to the channel. By double-clicking this display area, you can set the scale manually. (For details, refer to Section 6.2.1 D) "Scale setting")

### (3) Unit

Shows the unit assigned to the channel.

## B) Graph area

This area shows a graph of recorded trend data. Trend data is old on the left side and new on the right side.



### (1) Event display area

Shows icons at the positions of alarms, messages, and comments. When you place the cursor at an icon, pertinent detail information will pop up.

Ⓐ : Red icon for an alarm that has occurred during recording or has been reset

Ⓜ : Green icon for a message that has occurred during recording

Ⓒ : Yellow icon for a comment

### (2) Common alarm display

If a common alarm occurs, a pink line is drawn across the pertinent record area as shown in the above figure.

### (3) Cursor position indicator

Shows a cyan ▽ icon at the position of the currently selected record. Measurement values at the date and time corresponding to this position are displayed in the cursor value area described in Section 6.1.2 C) "Cursor Value Area".

### (4) Graph display area

Shows recorded trend data. You can move the cursor position by clicking the desired position in the graph display area.

### (5) Measurement time display area

Shows the time the measurement was recorded. You can select a time format as described in Section 6.5 "Option".

### (6) Scroll bar

If the desired trend data gets out of the screen due to time axis, Y axis, or other change, you can use the scroll bar to move the display position.

## C) Cursor Value Area

This area shows measurement values at the cursor position selected on the graph area.

(1) Measurement time      (2) Digital display

23/03/2017 11:27:01									
<input checked="" type="checkbox"/> TAG01	12.73 [%]	<input checked="" type="checkbox"/> TAG02	27.73 [%]	<input checked="" type="checkbox"/> TAG03	42.73 [%]	<input checked="" type="checkbox"/> TAG04	57.73 [%]		
<input checked="" type="checkbox"/> TAG05	72.73 [%]	<input checked="" type="checkbox"/> TAG06	87.73 [%]	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	

### (1) Measurement time

Shows the measurement time of the record data at the cursor position. You can select a time format as described in Section 6.5 "Option".

### (2) Digital display

Shows digital values on all channels registered with the displayed group. Data on each channel consists of "scale and graph display state," "channel name," and "measurement values."

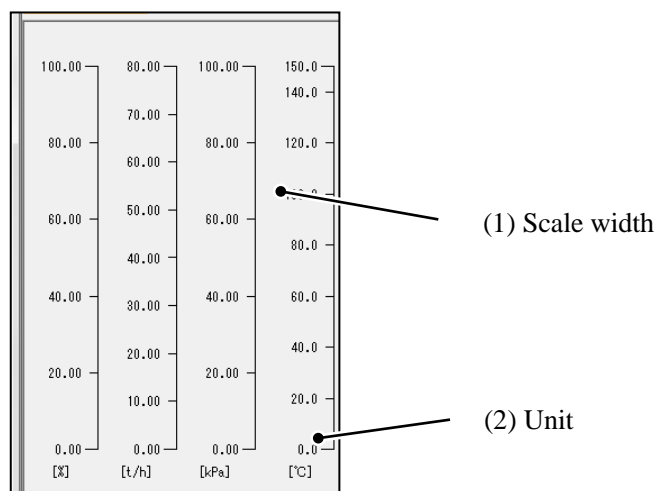
Item	Description
Scale and Graph display state	A click on this area toggles between three states of whether "scale" and/or "trend data" are shown or hidden as follows: <input checked="" type="checkbox"/> : Both "trend data" and "scale" are shown. <input type="checkbox"/> : "scale" are hidden.
Channel name	Shows either "channel No.," "tag," or "description."
Measurement values	Shows measurement values as digital information. If the record type is "maximum/minimum," the display format is "[maximum]/[minimum]."

## D) Common scale display area

This area shows common scales from the channel registered into display groups. The same scale is excepted. When "Enable Common scale display" option setting is enabled, it is displayed.

In initialization, it is disabled. For details, refer to Section 6.5 "Option".

**\*A scale is the same, and when units differ, it registers as another scale.**



### (1) Scale width

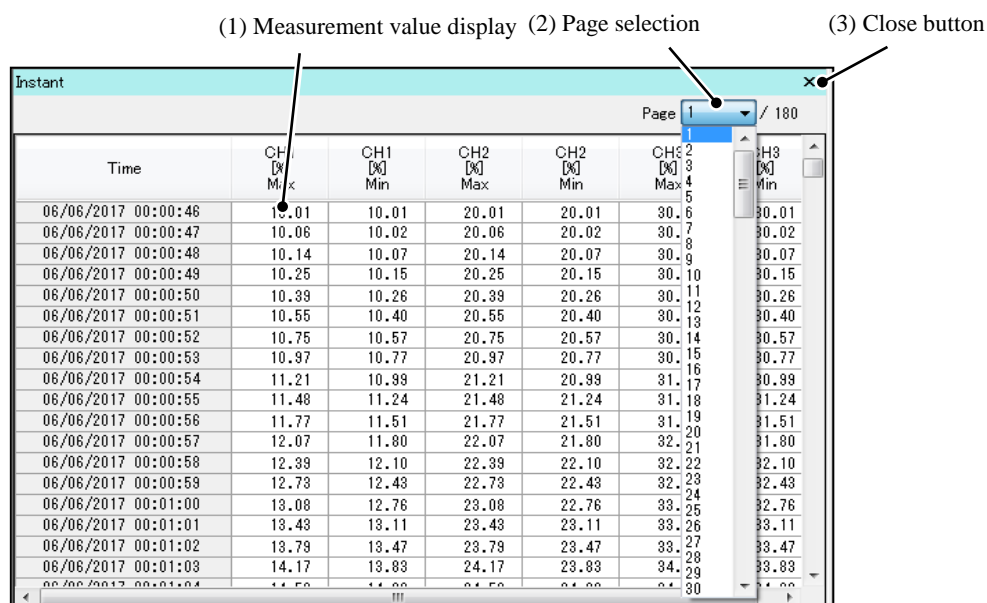
The scale width set as the channel is displayed. By double-clicking this display area, you can set the scale manually. (For details, refer to Section 6.2.1 D) "Scale setting")

### (2) Units

Shows the unit assigned to the channel.

### 6.1.3 Instant Value area

This area shows a list of record data. One page displays up to 1000 records.



#### (1) Measurement value display

This area shows record data on all channels registered with the displayed group.

Item	Description
Time	Measurement values are recorded at the cycle that is set on the recorder. The record cycle on the above figure is 100 milliseconds. (For information on record cycles, refer to the Operation Manual for the Paperless Recorder.) You can select a time format as described in Section 6.5 "Option".
Measurement values	Measurement values are displayed in columns, each corresponding to a channel. If the record type is "maximum/minimum," maximum and minimum values are displayed on separate columns unlike cursor values. The header contains the channel No., unit, and record type in that order.

#### (2) Page selection

If recorded data exceeds 1000 records of instant values, you can select a page from a drop-down menu as shown in the above figure to display data that is currently invisible.

#### (3) Close button

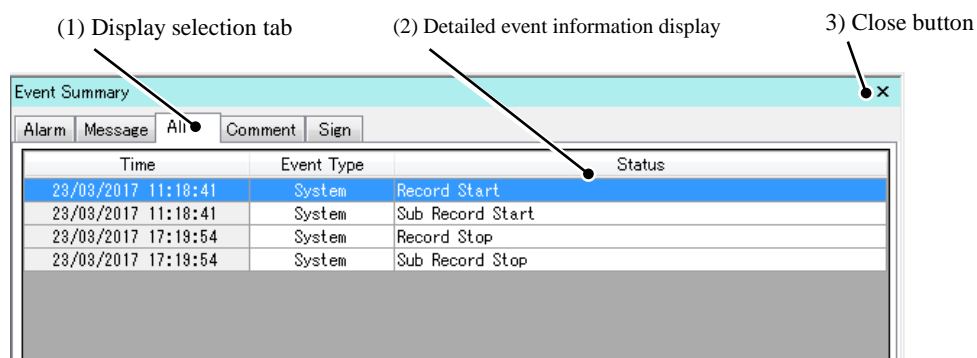
A click on this button hides the instant value display. To show it again, select "Instant Values" from the View menu.

(For details, refer to Section 6.2.1 A) "Display Selection").



## 6.1.4 Event Summary area

Detailed display of event information, display of comment information, confirmation of signature information.



### (1) Display selection tab

Different tabs correspond to different types of information displayed on them.

### (2) Detailed event information display

This area displays a list of detailed event information that differs among the tabs. The information items displayed on each tab are as follows:

Tab	Description	項目	
Alarm	Displays information on alarm events that have occurred during recording.	Time	When the event occurred
		Channel	1 to 48
		Alarm level	1 to 4
		Occurrence/Recovery	Occurrence or Recovery
Message	Displays message and system message events that have been occurred during recording.	Time	When the event occurred
		Event type	Message or system message
		Message	Message
All	Displays both alarm and message events.	Time	When the event occurred
		Event type	Alarm, message, or system message
		Event status	Detailed status
Comment	Displays comments.	Time	When the comment was entered
		Comment	Comment text
Sign	Display signature information. For signature, refer to Section 5.3.5 "Signature."	Status	Not signed、Pass、Fail
		User name	signer
		Note	Set at user registration on recorder
		Date	Signing date
		Comment	Enter at signature

### (3) Close button

A click on this button hides the event summary display. To show it again, select "Event Summary" from the View menu. (For details, refer to Section 6.2.1 A) "Display Selection.")

## 6.2 Operate the trend screen

### 6.2.1 View

#### A) Display Selection

##### - Instant Values area

You can specify whether to show or hide the Instant Values area.

You can change this setting on the “View” menu or by using the short-cut key "Ctrl+I."

##### - Event Summary area

You can specify whether to show or hide the Event Summary area.

You can change this setting on the “View” menu or by using the short-cut key "Ctrl+E."

#### B) Changing Layout

Change Layout allows you to change the layout of the graph display area, instant value display area, and event summary display area by selecting one of the following five patterns from the “View” menu or Toolbar.

##### - Layout 1

Graph
Instant values
Event summary

##### - Layout 2

Graph	Event summary
Instant values	

##### - Layout 3

Graph	Instant values	Event summary
-------	----------------	---------------

##### - Layout 4

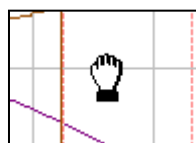
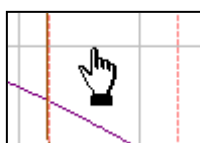
Instant values	
Instant values	Event summary

##### - Layout 5

Graph	Instant values
	Event summary

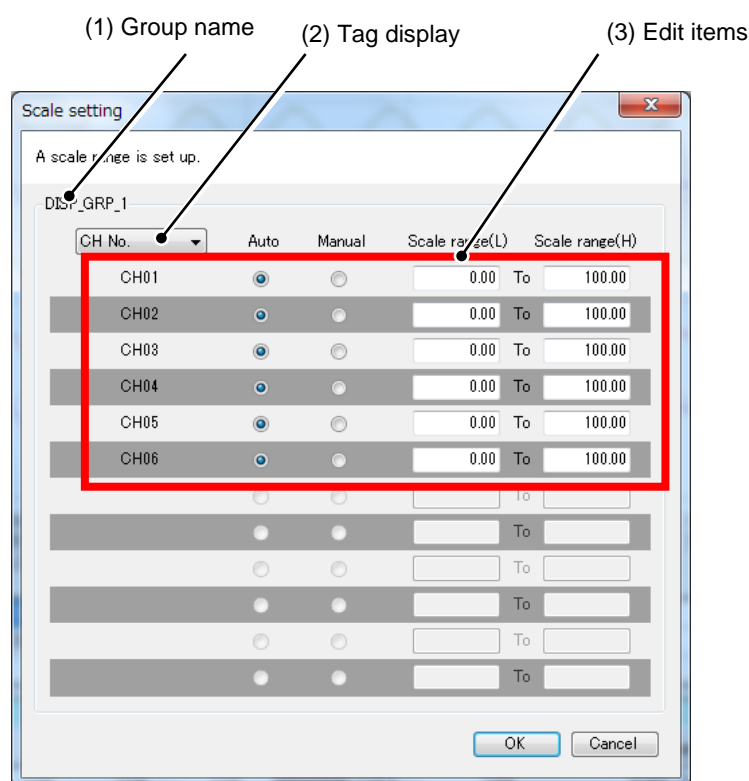
#### C) Touch scroll

The trend graph can be scrolled by mouse dragging. If the Touch Scroll function is set to "ON," the mouse cursor shape on the trend graph is as shown in Lower figure (left) and is changed during mouse dragging as shown in Lower figure (right). You can change this setting on the “View” menu or Toolbar.



## D) Scale setting

You can freely change the scale width of channels registered with the group that is displayed in the trend window. When you double-click "Scale width" in the scale display area, the Set Scale dialog shown in below. This dialog can also be opened from the "View" menu or using the short-cut key "Ctrl+Alt+O."



### (1) Group name

The name of the display group being edited.

### (2) Tag display selection

You can select "CH No." or "TAG" as the edit item name displayed.

### (3) Edit items

Edit scale settings by selecting values from combo boxes or directly entering values from the keyboard.

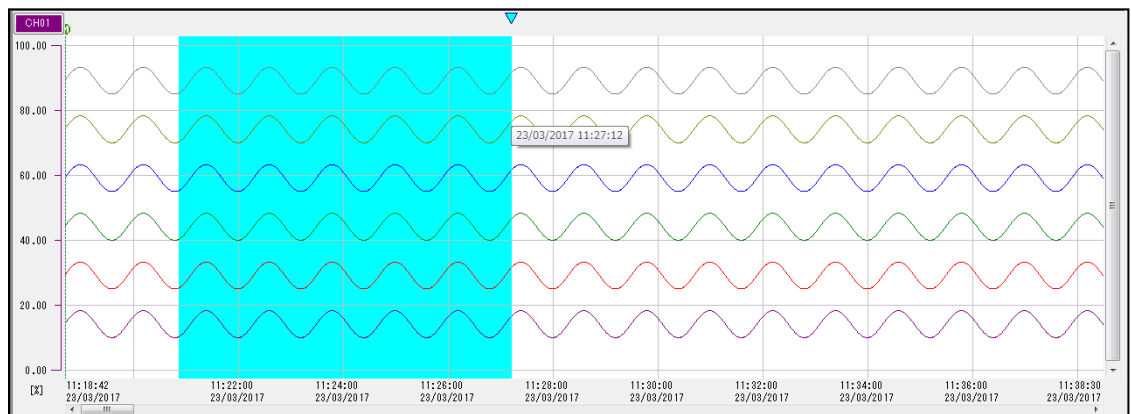
Item	Selectable values/input range	Decimal point	Description
Auto/Manual	Auto or Manual	-	To make the settings edited here effective, you need to select "Manual." When "Auto" is selected, the original scale settings will be assumed as is.
Scale Range (L)	Standard: -32000 to 32000	As per the setting	Enter the minimum value of the scale range.
Scale Range (H)	Same as the above	Same as the above	Enter the maximum value of the scale range.

## 6.2.2 Zoom

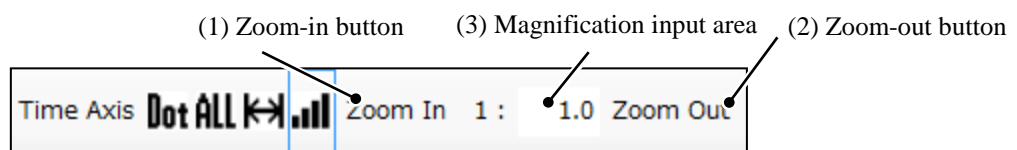
### A) Time-axis Zoom

- Dot by dot: The trend data is displayed in dot-by-dot fashion, meaning that the standard size is kept.
- Whole view: The trend data is displayed in full.
- Point to point: The trends between the specified start and end points are displayed.

The range can be determined by mouse-dragging on the graph display area. Specify the start point by clicking on it, drag the mouse to select the range, and release the mouse button at the desired end point. The range selected is displayed in cyan as shown in the figure below. (If you release the mouse button at a point of time earlier than the start point, that point is treated as the start point and the specified start point is treated as the end point.)



- Arbitrary: You can set the magnification by entering a value representing the percentage of the X axis to the Y axis on the assumption that the Y axis is 1. Use the Toolbar for this setting.



(1) Zoom-in button

Each time you click this button, the time axis is zoomed in by one step.

(2) Zoom-out button

Each time you click this button, the time axis is zoomed out by one step.

(3) Magnification input area

You can view or enter the magnification. A value of "1.0" represents the magnification for the Dot by Dot display. The first decimal place of your specified value is regarded as enable. The input range is from "0.1" to "the magnification for the full display."

## **B) Y-axis Zoom**

Select the Y-axis display magnification. Selectable values are "100%," "125%," "200%," "400%," and "1000%."

## **C) Default Display**

This item resets the zoom settings to their initial values.

The time-axis zoom mode is reset to "Dot by Dot" and the Y-axis zoom mode is reset to "100%."

## 6.2.3 Event/Comment

### A) Showing or Hiding Events

You can specify whether to show or hide each event mark on the trend graph.

For this purpose, use the Event/Comment Menu, Toolbar, or the appropriate short-cut key.

Events are classified into the types indicated below. You can specify whether to show or hide each event type

Event type	Alarm	Message	Comment
Short-cut key	Ctrl + A	Ctrl + M	Ctrl + C

### B) Event search

You can search for an event mark position and move to that mark. You can only search for events that are currently "Shown" as specified by "Show/Hide Events" described in Section 6.2.3 A) "Showing or Hiding Events" events will be skipped during search.

- Find Previous: Moves to the event mark that is previous to the selected position in the trend display area.
- Find Next: Moves to the event mark that is next to the selected position in the trend display area.

## 6.2.4 Max./Min./Ave. (It supports since Ver.2.10)



### Caution

If the record type of the channel recorded by the main unit is "Max / Min", it is calculated as follows.

Max.: Calculated based on the "Max" data of the specified period.

Min.: Calculated based on the "Min" data of the specified period.

Ave.: Calculated as ("Max" + "Min") / 2 of the specified period.

### A) Setting

It is a function to calculate the maximum value, minimum value, and average value of the recording data currently displayed. By setting display items, channels, and periods, it is a function that calculates the value of the selected "Max./Min./Ave.", displays it, and prints it.

Max./Min./Ave.

Max./Min./Ave.

☒ Max. ☒ Min. ☒ Ave.

Display group : DISP\_GRP\_1

Channel selection

<input checked="" type="checkbox"/> CH01(ABCDEFGH)	<input checked="" type="checkbox"/> CH02(あいうえ)	<input checked="" type="checkbox"/> CH03(試験試験)	<input checked="" type="checkbox"/> CH13(12345678)
<input checked="" type="checkbox"/> CH14(abcdefgh)	<input checked="" type="checkbox"/> CH15(TAG15)	<input checked="" type="checkbox"/> CH16(TAG16)	<input checked="" type="checkbox"/> CH17(TAG17)
<input checked="" type="checkbox"/> CH18(TAG18)	<input checked="" type="checkbox"/> CH19(TAG19)	<input checked="" type="checkbox"/> CH20(TAG20)	<input checked="" type="checkbox"/> CH21(TAG21)

Period

☒ All 2018/12/04 00:00:05 - 2019/01/02 13:16:05

☐ Display range

☐ Range specification

Start time 2018/12/04 00:00:05

End time 2019/01/02 13:16:05

Print

☒ Front page ☒ Trend

☐ ON/OFF of the page No.

Graph title:

OK Cancel

Item	Setting value / input range	Description
Max./Min./Ave.	Max. Min. Ave.	Set the items to be calculated. For calculation method, please refer to “● Calculation method” below.
Display group	—	Display group name currently being edited.
Channel selection	CH	Select the CH to calculate.
Period	Range specification	Select the range for outputting data. -All data: All data from the recording start to the recording stop is used. -Display range: Use the data of the range currently displayed on the trend window -Range Specification: Use data of specified time range.
Print	Front page ON/OFF of the page No. Graph title	●Front page Set the items to be printed at the same time as printing. -Front page: This page shows channel information etc. -Trend: This page shows the trend for the specified period. ●ON/OFF of the page No. Specify whether to print page numbers. ●Graph title Enter the graph title.

### ●Calculation method

The calculation method of each value is shown below.

Max./Min./Ave.	Description
Max.	The maximum value is calculated by referring to each sampling. In addition, when there are multiple values that are the maximum value, the time of the oldest recording point is adopted.
Min.	The minimum value is calculated by referring to each sampling. In addition, when there are multiple values that are the minimum value, the time of the oldest recording point is adopted.
Ave.	The average value uses each sampling to calculate the average value. The following values are not included in the calculation. -H-: Upper limit value swing -L-: Lower limit value swing B. OUT: Burnout INVALID: Exception operation processing (division by 0, etc.)

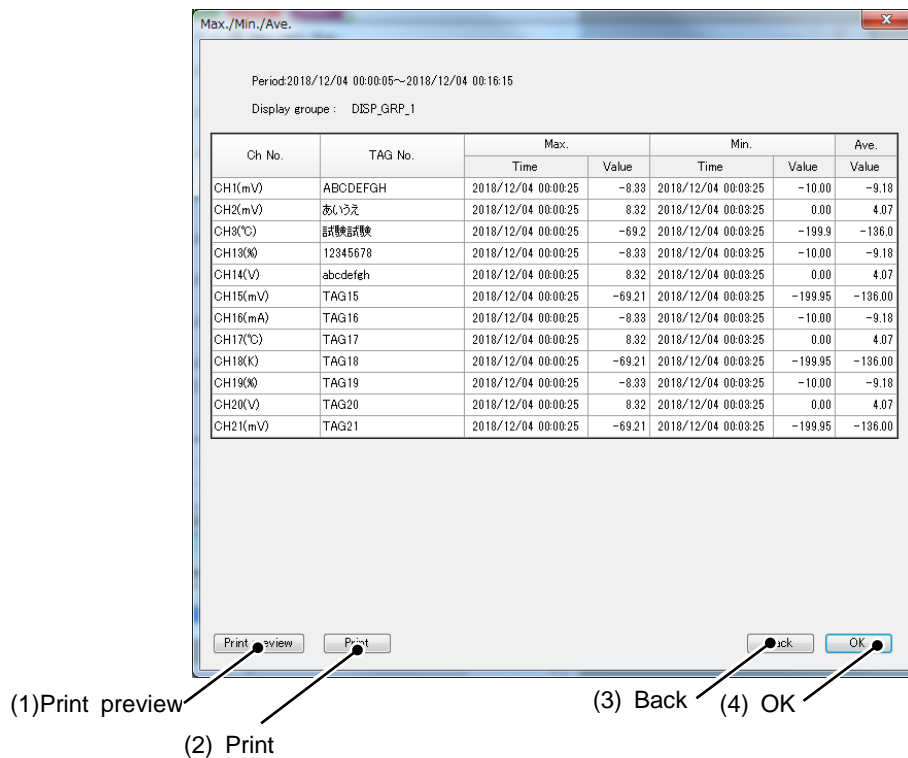


## B) Display

Click “OK” button in section 6.2.4 A) “ Setting ” and the following calculation results will be displayed.

If you want to change settings , click the "Back" button.

If printing is required, it is recommended to print after confirming the print screen in "Print preview".



### (1) Print preview

Display the calculated results and a print preview of the front page, trend, etc.

### (2) Print

Prints the displayed calculation results and the front page, trend, etc.

### (3) Back

Return to 6.2.4 A) “ Setting ” settings and reset.

### (4) OK

Close Max./Min./Ave.

## C) Print preview

Click the "Print Preview" button in Section 6.2.4 B)" Display" to display the print preview screen.

As the print contents, the calculation result in Section 6.2.4 B)"Display" + Print item set in Section 6.2.4 A)" Setting" will be printed.



### (1) Print button

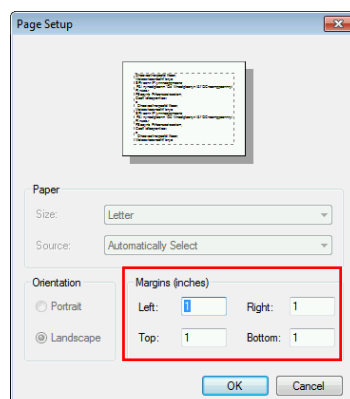
Starts printing.

### (2) Margin button

Allows you to set margins. A click on this button opens the Page Setup dialog shown below

You cannot change the paper type or print orientation. Please change from the printer setting in 6.3.2 A) "instant value print setting".

**\* You can adjust the print image by setting the margin.**

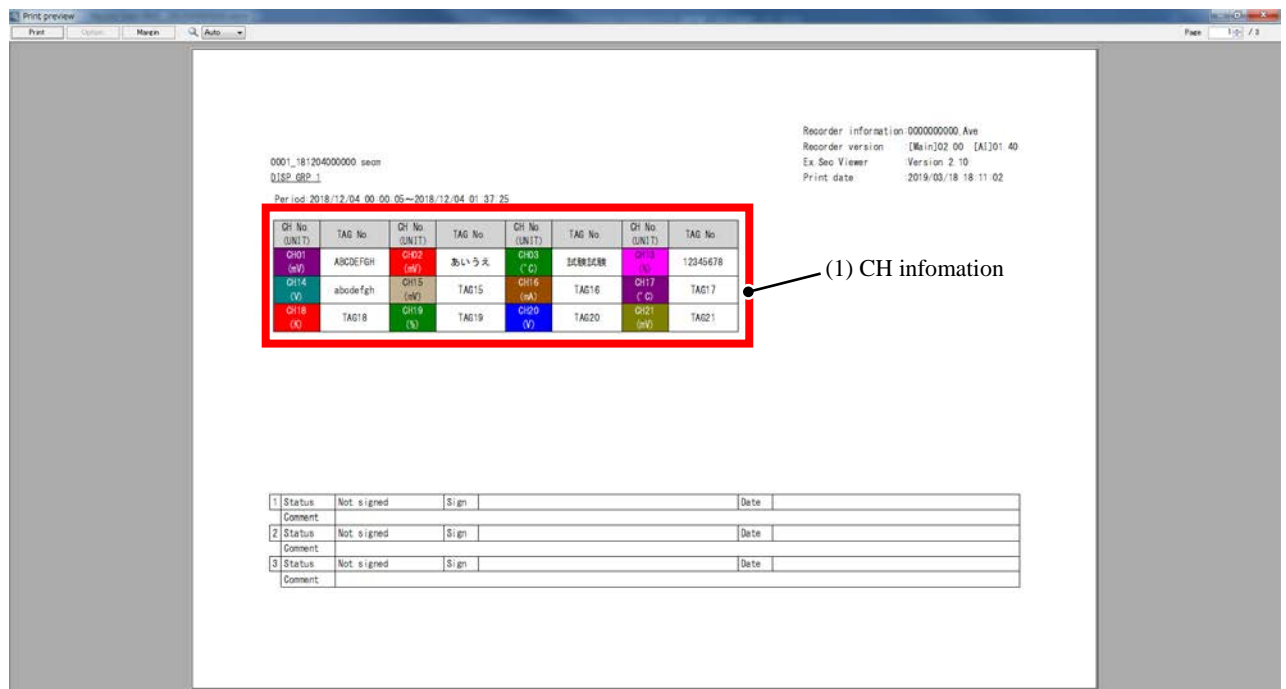


- (3) Zoom mode selection  
Select the print image magnification. You can select one of the following values:  
"Auto," "50%," "75%," "100%," "125%," "150%," "200%," and "300%"
- (4) Print image  
Shows the print image.
- (5) Page selection  
Use the up and down buttons to turn pages, by one page at a time.
- (6) Header1  
Record management file name and group name are displayed.  
Also, if you enter "Graph title" in "Options", the graph title will be displayed at the top of the record management file name. For options, refer to Section 6.2.4 A) "Setting".
- (7) Header2  
Recorder information, recorder version ([Main], [AI]), Ex.Sec Viewer version, printing date and time are displayed.
- (8) Footer  
Signature information is displayed.
- (9) Data range  
It is the data range calculated and set in Section 6.2.4 A) "Setting".

## ● Front page

Print calculation target channels information.

It is printed on the first page only when "Front page" is selected in "Print" of Section 6.2.4 A) "Setting".



### (1) CH information

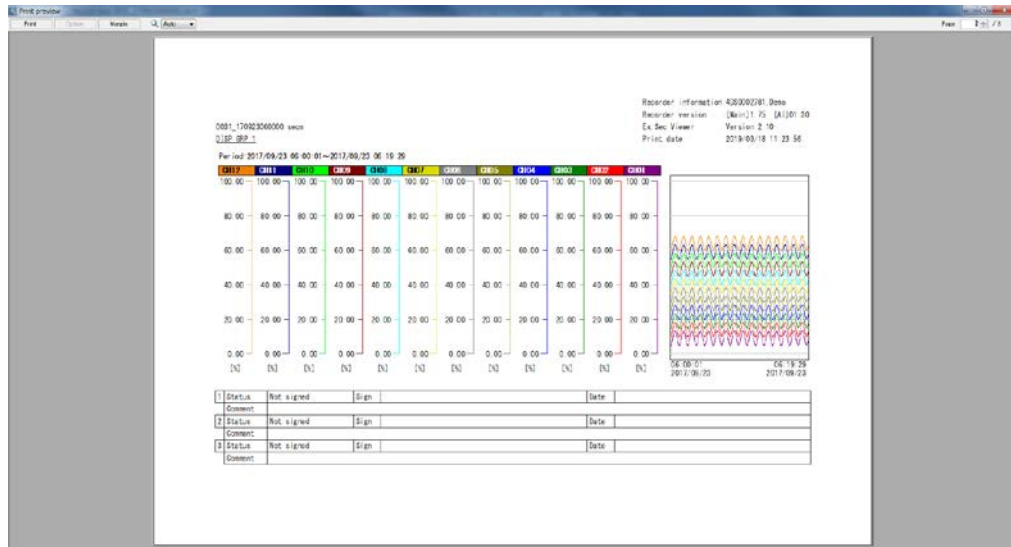
Information on the channel set in "Select CH" of "Section 6.2.4 A) "Setting "is displayed.

The channel number, unit, TAGNo., and display color are displayed.

## ●Trend

Consolidate and print the specified range of trend data on one page.

It is printed on the first page or the second page only when "Trend" is selected in "Print" of Section 6.2.4 A) "Setting".



\*If there are many channels as shown above, set the following to reduce the number of channels displayed.

- Use the common scale display function. (Recommendation)
  - >Using "common scale display" in Section 6.5 "Option", "unit" and "scale" display the scale as one scale.
- Hide the displayed channel scale.
  - > Set "Display state of scale and graph" in Section 6.1.2 C) "Cursor Value Area" to "Hide".

## ●Calculated data

The data displayed in Section 6.2.4 A) "Setting" s printed.

This page is always printed regardless of the settings.

Ch No	TAG No	Time	Value	Min	Ave
CH1(N)	TAG01	2017-09-23 06:00:40	12.30	2017-09-23 06:00:04	5.00
CH2(N)	TAG02	2017-09-23 06:00:40	18.33	2017-09-23 06:00:04	13.00
CH3(N)	TAG03	2017-09-23 06:00:40	25.33	2017-09-23 06:00:04	15.00
CH4(N)	TAG04	2017-09-23 06:00:40	29.33	2017-09-23 06:00:04	20.00
CH5(N)	TAG05	2017-09-23 06:00:40	32.33	2017-09-23 06:00:04	25.00
CH6(N)	TAG06	2017-09-23 06:00:40	38.33	2017-09-23 06:00:04	30.00
CH7(N)	TAG07	2017-09-23 06:00:40	40.33	2017-09-23 06:00:04	35.00
CH8(N)	TAG08	2017-09-23 06:00:40	46.33	2017-09-23 06:00:04	40.00
CH9(N)	TAG09	2017-09-23 06:00:40	52.33	2017-09-23 06:00:04	45.00
CH10(N)	TAG10	2017-09-23 06:00:40	58.33	2017-09-23 06:00:04	50.00
CH11(N)	TAG11	2017-09-23 06:00:40	62.33	2017-09-23 06:00:04	55.00
CH12(N)	TAG12	2017-09-23 06:00:40	68.33	2017-09-23 06:00:04	60.00

	Status	Not signed	Sign	Date
1	Status	Not signed	Sign	Date
2	Status	Not signed	Sign	Date
3	Status	Not signed	Sign	Date

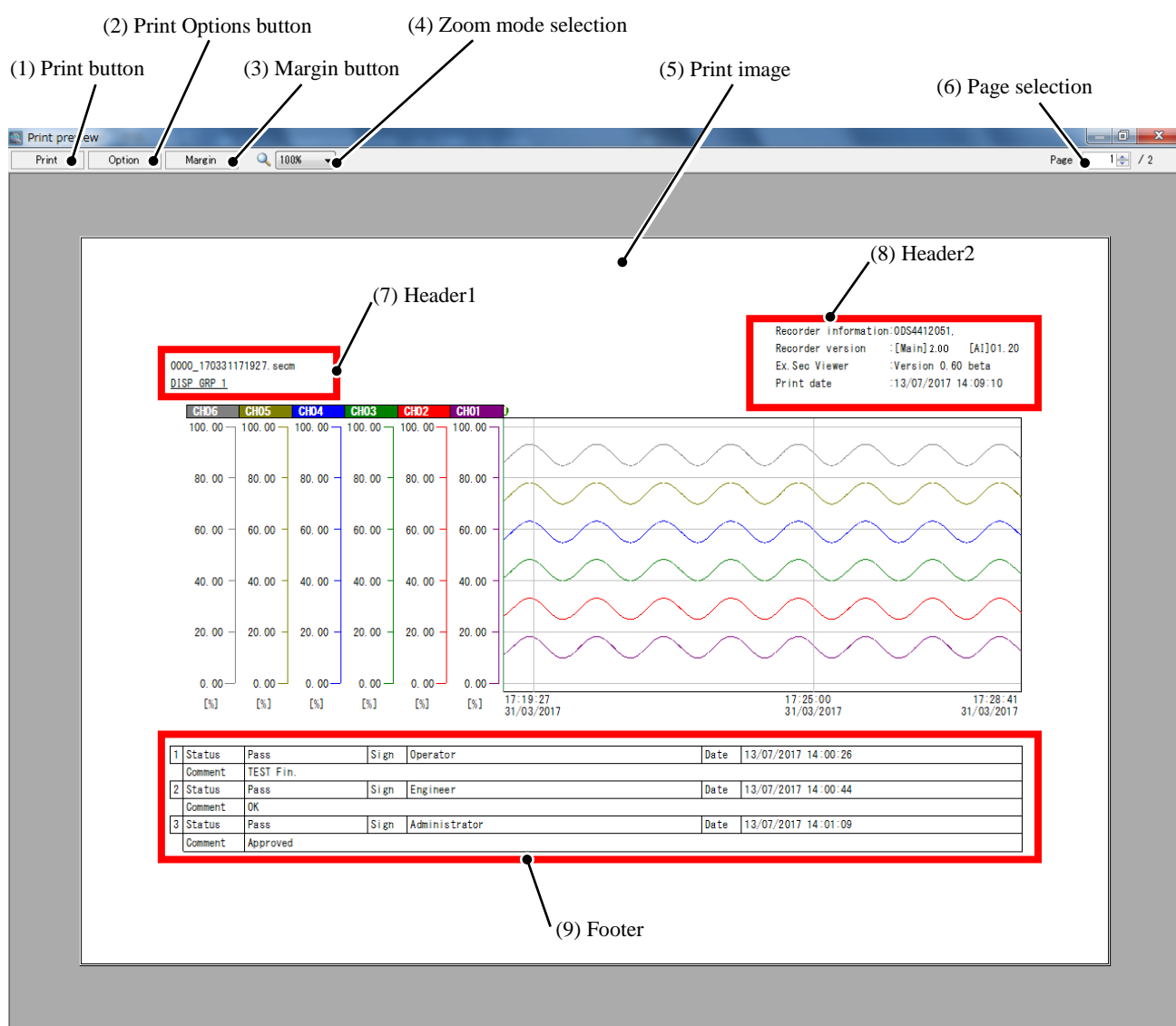
## 6.3 Print function

### 6.3.1 Trend print

#### A) Print preview

The print preview of the current trend windows is displayed. This window can perform the image check before printing.

A preview window is displayed by [File] > [Trend print preview].



#### (1) Print button

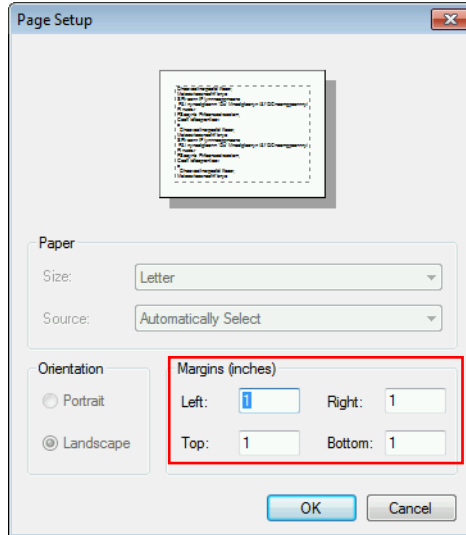
Starts printing. For further information, see Section 6.3.1 C) "Print"

#### (2) Print Options button

Allows you to set the print options. For further information, see Section 6.3.1 B) "Print Options"

(3) Margin button

Allows you to set margins. A click on this button opens the Page Setup dialog shown below. You cannot change the paper type or print orientation. Please change from the printer setting in 6.3.2 A) "instant value print setting".



(4) Zoom mode selection

Select the print image magnification. You can select one of the following values: "Auto," "50%," "75%," "100%," "125%," "150%," "200%," and "300%".

(5) Print image

Shows the print image.

(6) Page selection

Use the up and down buttons to turn pages, by one page at a time.

(7) Header1

Record management file name and group name are displayed.

Also, if you enter "Graph title" in "Options", the graph title will be displayed at the top of the record management file name. For options, refer to Section 6.3.1 B) "Print Options".

(8) Header2

Recorder information, recorder version ([Main], [AI]), Ex.Sec Viewer version, printing date and time are displayed.

(9) Footer

Signature information is displayed.

## B) Print Options

You can use Options to configure "Print" settings.

The setting dialog opens a print option by selecting an "Options" from a Preview window.

Items	Setting value/input range	Description
Print Type	Page unit, Display range,	Specify the range of record data to be printed. Pages: All the record data that, included in the specified display span, extends over multiple pages will be printed. Display range: Only a single page of the record data displayed in the Trend window will be printed.
ON/OFF of the page No.	ON, OFF	Specify whether to print page numbers.
ON/OFF of the guide(Subscript printing)	ON, OFF	Specify whether to print the suffix for each channel at the graph end point.
Graph title	No restriction on the number of characters	Enter the graph title.
X-axis	No restriction on the number of characters	Enter the X-axis title.
Y-axis	No restriction on the number of characters	Enter the Y-axis title.
Event display	ON, OFF	Specify whether to print each event mark.
Event position	Inside trend Outside trend	Select the position where the detailed event description will be printed. Within trend: The description will be printed within the trend graph. Out of trend: The description will be printed out of the trend graph.
Font size	6 - 12	Select the font size for the detailed event description.

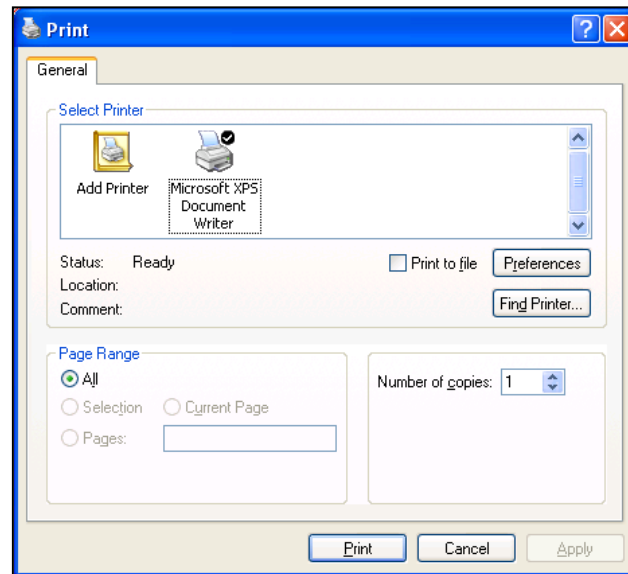
## C) Print

You can print the currently displayed Trend window content.

For this purpose, use the [File] > [Trend print], or the short-cut key "Ctrl+P."

When you select [Trend Print], the Print dialog shown below opens.

After setting options, click the **Print** button. Printing starts.





## 6.3.2 Instant value print

### A) instant value print setting

When you click the "instant value print" button, the instant value print setting window is displayed.  
Instant value printing is possible by instant value printing setting.

Instant value print setting

Print setting is performed.

Printer : RICOH imagio MP C5001 RPCS Printer settings

Print group : DISP\_GRP\_1

☒ ON/OFF of the page No.

Graph title :

Print information

print direction : landscape Paper size : A4 ( 210 x 297 mm )

Print area

☒ All Data 12/06/2017 06:00:01 - 13/06/2017 07:00:00

☐ Select time

Start Time 2017/06/12 06:00:01

End Time 2017/06/13 07:00:00

Record type

CH1	CH2	CH3
M/M	M/M	M/M

Number of print columns per page 6

Number of prints 5000 Seet

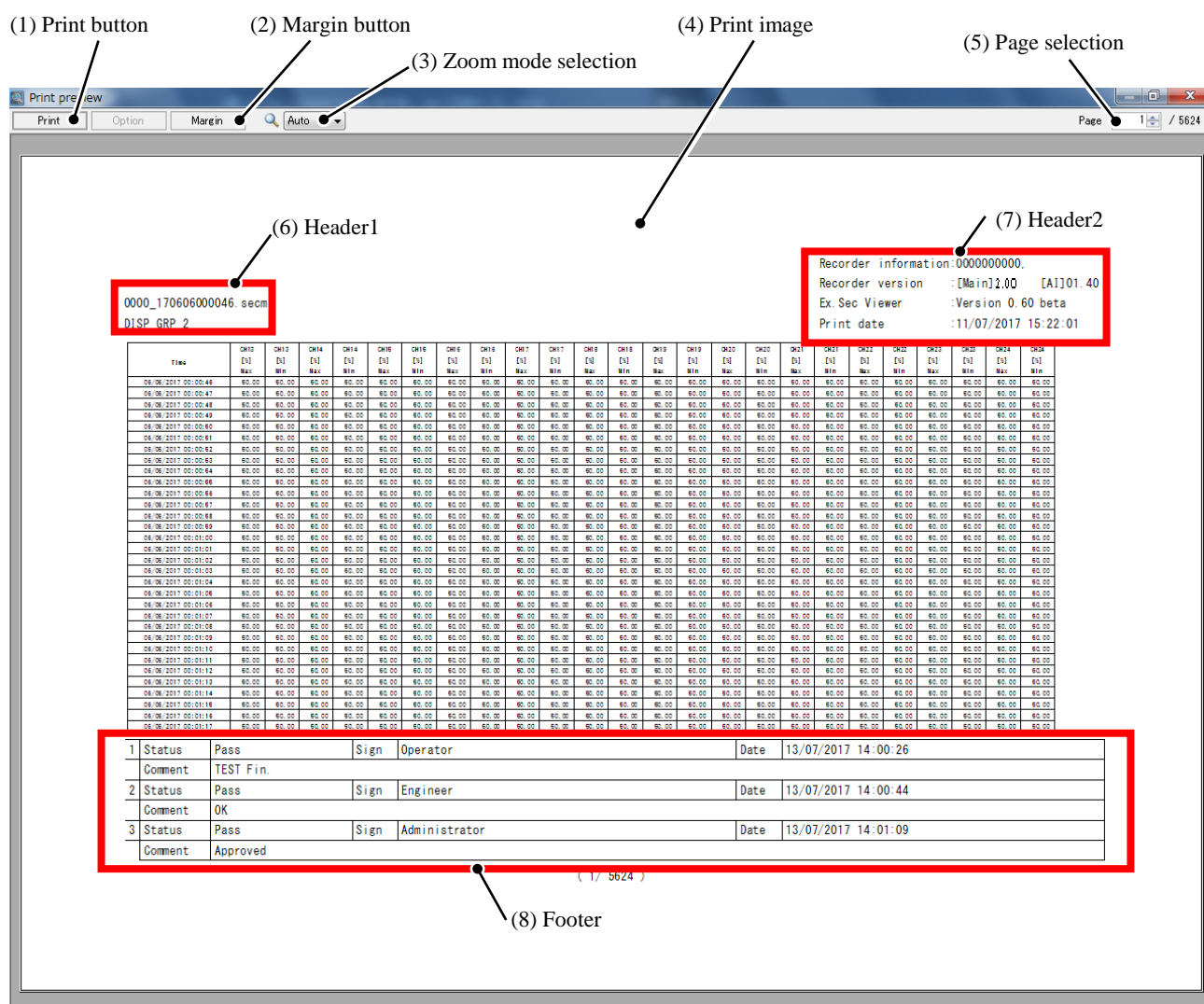
Print preview Margin Print Cancel Apply

Items	Setting value/input range	Description
Printer	Select	Select the printer to use.
Printer settings	—	Set the printing direction, paper size, etc. The setting items differ depending on the type of printer selected in "Printer".
Print group	—	Display the recording group to be printed. Recording groups can be selected on the "Group section tab" on the trend display. For the group selection tab, see Section 6.1.1 "Screen Layout".
ON/OFF of the page No.	ON, OFF	Specify whether to print page numbers.
Graph title	No restriction on the number of characters	Enter the graph title.
Print information	—	Displays the printing direction and paper size information set in "Printer Setting".
Print area	All Data/Select time	Specify the range of printing.
Record type	—	The recording type of each channel is displayed. Depending on the recording type, the number of print columns is different. Inst : 1 column Ave : 1 column M/M : 2 columns
Number of print columns per page	1 - 24	Sets the number of columns to be printed on one page. Up to 24 columns (Portrait and Landscape) can be set. By increasing the number of columns, you can reduce the number of prints. You can't specify beyond the number of columns used in the display group.

Items	Setting value/input range	Description
Number of prints	—	Displays the number of prints in the current print setting.
Print preview	—	Displays print preview in the current print setting.
Margin	—	Set the margins. You can't change the font, paper, or orientation. Please set in printer setting.
Apply	—	Apply and save the current instant value print setting. The following items are not saved. · Graph title · Number of print columns per page
Cancel	—	Cancel the set print settings and close the setting window.
Print	—	Execute printing. When clicking, the final confirmation window will be displayed. If there is no problem, please click "Yes" and execute printing. * We recommend that you print after checking the print format in print preview.

## B) Print preview

The print preview of the instant value is displayed. This window can perform the image check before printing. A preview window is displayed by "Print Preview" button in Section 6.3.2 A) "instant value print setting".



(1) Print button

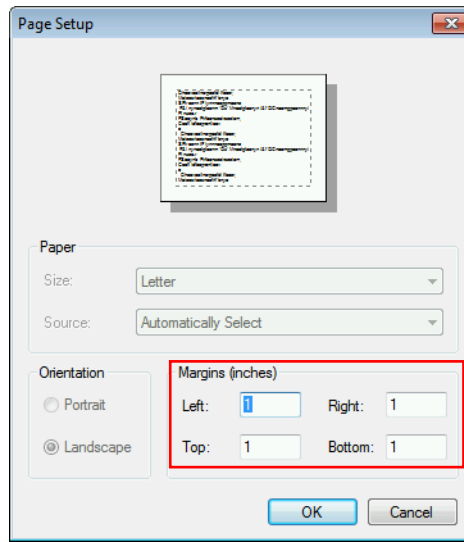
Starts printing. For further information, see Section 6.3.2 C) "Print"

(2) Margin button

Allows you to set margins. A click on this button opens the Page Setup dialog shown below

You cannot change the paper type or print orientation. Please change from the printer setting in 6.3.2 A) "instant value print setting".

\* You can adjust the print image by setting the margin.



(3) Zoom mode selection

Select the print image magnification. You can select one of the following values:

"Auto," "50%," "75%," "100%," "125%," "150%," "200%," and "300%"

(4) Print image

Shows the print image.

(5) Page selection

Use the up and down buttons to turn pages, by one page at a time.

(6) Header1

Record management file name and group name are displayed.

Also, if you enter "Graph title" in "Options", the graph title will be displayed at the top of the record management file name. For options, refer to Section 6.3.2 A) "Instant value print".

(7) Header2

Recorder information, recorder version ([Main], [AI]), Ex.Sec Viewer version, printing date and time are displayed.

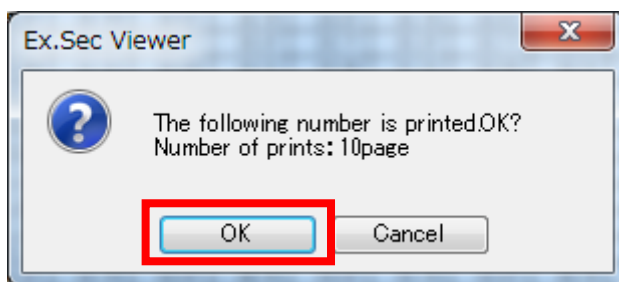
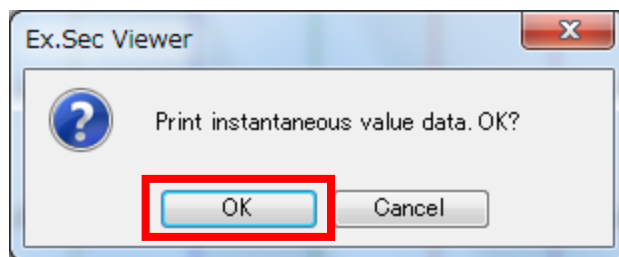
(8) Footer

Signature information is displayed.

### C) Print

Execute printing.

Printing is executed with the "Print" button in "instant value print setting" in Section 6.3.2 A). The following window will be displayed. If there is no problem with the printing direction, paper size, print area, number of prints etc, please click "Yes" and execute printing.

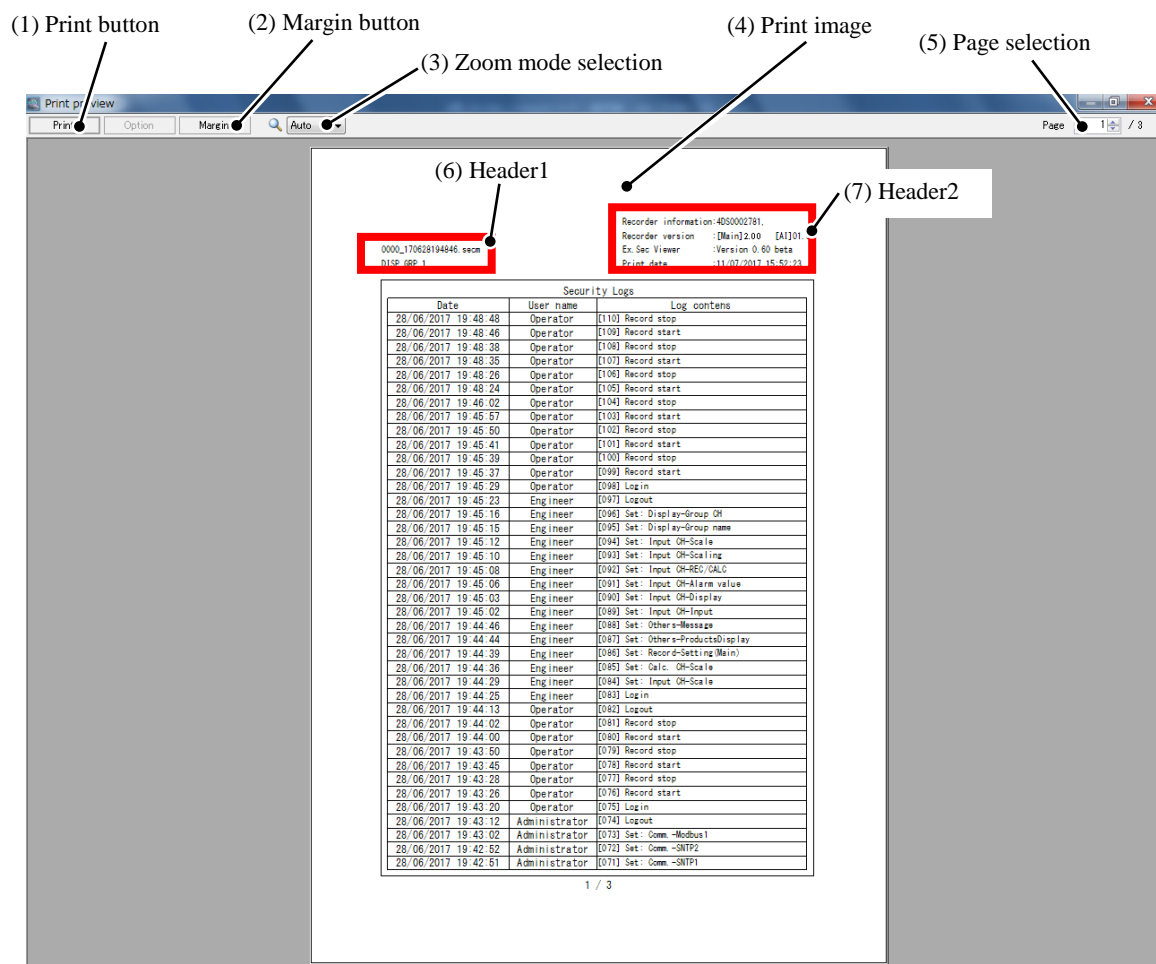


\*It is displayed in Ver. 2.10 or later.

### 6.3.3 Security log print

#### A) Print preview

The print preview of the security log is displayed. This window can perform the image check before printing. A preview window is displayed by [File] > [Security log print preview].



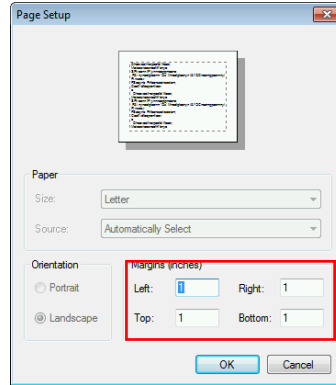
#### (1) Print button

Starts printing. For further information, see Section 6.3.3 B) "Print"

(2) Margin button

Allows you to set margins. A click on this button opens the Page Setup dialog shown below  
You cannot change the paper type or print orientation. Please change from the printer setting in 6.3.2 A) "instant value print setting".

\* You can adjust the print image by setting the margin.



(3) Zoom mode selection

Select the print image magnification. You can select one of the following values:

"Auto," "50%," "75%," "100%," "125%," "150%," "200%," and "300%"

(4) Print image

Shows the print image.

(5) Page selection

Use the up and down buttons to turn pages, by one page at a time.

(6) Header1

Record management file name and group name are displayed.

Also, if you enter "Graph title" in "Options", the graph title will be displayed at the top of the record management file name.

(7) Header2

Recorder information, recorder version ([Main], [AI]), Ex.Sec Viewer version, printing date and time are displayed.

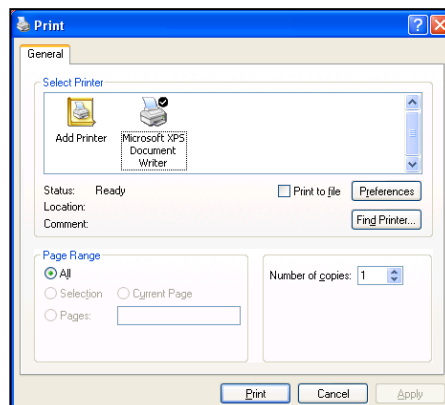
## B) Print

Print the security log.

For this purpose, use the [File] > [Security log print].

When you select [Security log print], the Print dialog shown below opens.

After setting options, click the **Print** button. Printing starts.



## 6.3.4 Report print (It supports since Ver.2.10)

### A) Report print setting

Click the "Print Report" button to display the report print setting window.

It is a function to print daily and monthly reports. It is possible to create a report by selecting the items you want to output from among "Max / Min", "Average", and "Instant value".



#### Caution

- Please note that the channel recorded with " Max / Min " (Record type) can not be output as a report.
- Depending on the recording cycle and file recording cycle settings, it may take approximately 5 minutes to display the preview.

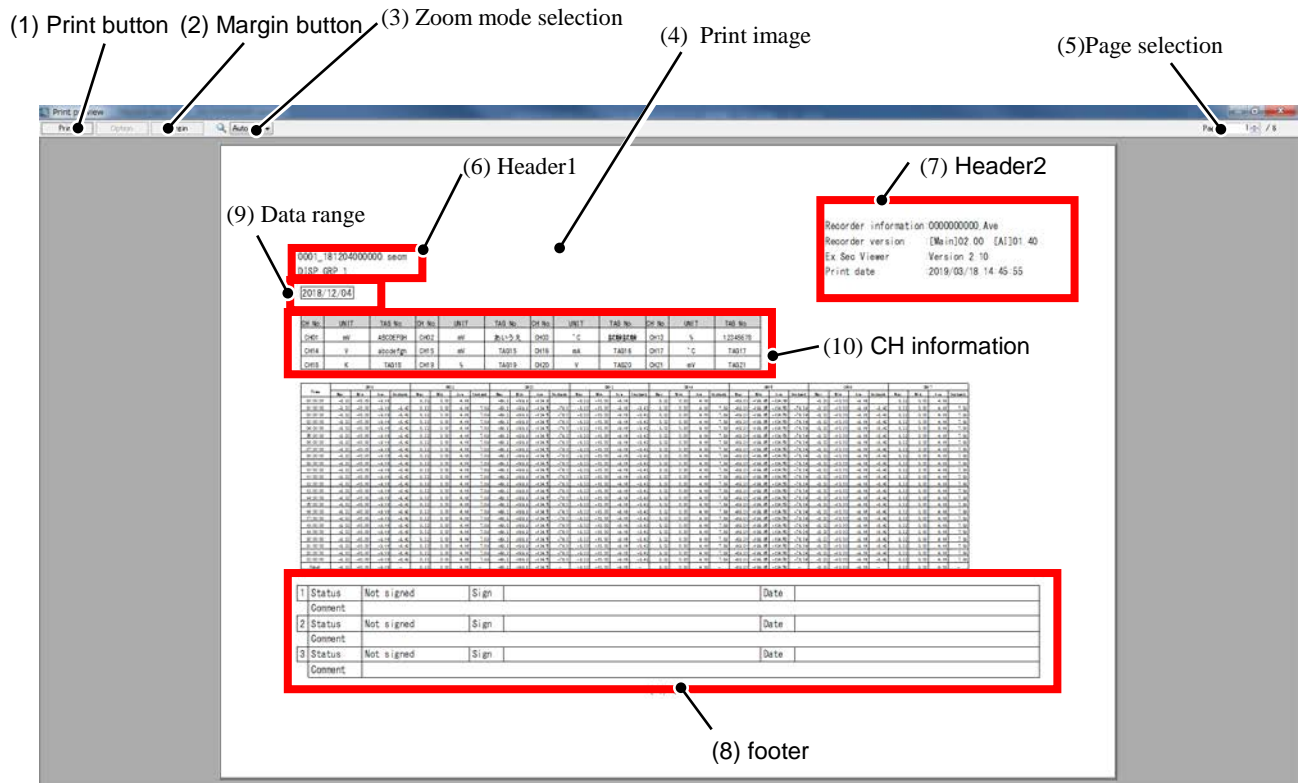
Item	Setting value / input range	Description
Printer	Select	Select the printer to use.
Printer settings	—	Set the printing direction, paper size, etc. The setting items differ depending on the type of printer selected in "Printer".
Print group	—	Display the recording group to be printed. Recording groups can be selected on the "Group section tab" on the trend display. For the group selection tab, see Section 6.1.1 "Screen Layout".
ON/OFF of the page No.	ON, OFF	Specify whether to print page numbers.
Graph title	No restriction on the number of characters	Enter the graph title.
Print information	—	Displays the printing direction and paper size information set in "Printer Setting".
Display item	—	<p>Select the data you want to calculate from "Max. / Min.", "Ave.", and "Inst.". Details of each item are shown below.</p> <ul style="list-style-type: none"> <li>• Daily report <p>Max. / Min.: Calculates the maximum and minimum of each hour (Example 00:00:00 to 00:59:99). Ave.: Calculate the average value of each hour (Example 00:00:00 to 00:59:99). -H-, -L-, B OUT, INVALID are excluded from the calculation. Inst.: A value at every hour (Example, 00:00:00). If there is no data, leave blank.</p> </li> <li>• Monthly report <p>Max. / Min.: Calculate the maximum and minimum values from 00:00:00 to 23:59:99 each day. Ave.: Calculate the average value from 00:00:00 to 23:59:99 each day. -H-, -L-, B OUT, INVALID values are excluded from the calculation. Inst.: The value of 00:00:00 each day. If there is no data, leave blank.</p> </li> </ul>
Dairy report	All data / Select time	Set when printing daily reports. It is also possible to set the start date and end date as the period you want to output, and print the daily report of the specified period.
Monthly report (Data range)	All data / Select time	Set when printing monthly reports. It is also possible to set the start date and end date as the period you want to output, and print the monthly report of the specified period.
Monthly report (First row)	1st of the month / Start day	<p>Select the first line of the monthly report from "1st of the month" and "Start day". 1st of the month: Create a monthly report from the first day of every month. Start day: Creates a monthly report with the start date set as the recording start date or range specification as the first line.</p> <p>The details of "1st of the month" and "Start day" are shown below. Example: Recording period; 2019/01/05 to 2019/02/10</p> <ul style="list-style-type: none"> <li>● 1st of the month <ul style="list-style-type: none"> <li>• When the data range is "All data"; 2019/01 / 01-2019 / 01/31, 2019/02 / 01-2019 / 02/28 Monthly reports for two months of are created.</li> <li>• When the data range is set as "Range designation", "2019/01/07-2019/02/06"; 2019/01 / 01-2019 / 01/31, 2019/02 / 01-2019 / 02/28. Monthly reports for two months of are created.</li> </ul> </li> <li>● Start date <ul style="list-style-type: none"> <li>• When the data range is "All data"; 2019/01 / 05-2019 / 02/04, 2019/02 / 05-2019 / 03/04 Monthly reports for two months of are created.</li> <li>• When the data range is set as "Range designation", "2019/01/07-2019/02/06"; 2019/01 / 07-2019 / 02/06. A monthly report for one month of is created.</li> </ul> </li> </ul>



## B) Print preview

The print preview of the Report print is displayed. This window can perform the image check before printing.

The print preview window is displayed by the "Print preview" button in Section 6.3.4 A) "Report print setting".



(1) Print button

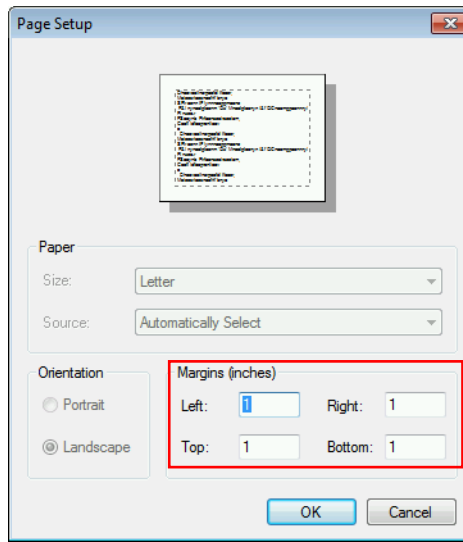
Starts printing.

(2) Margin button

Allows you to set margins. A click on this button opens the Page Setup dialog shown below

You cannot change the paper type or print orientation. Please change from the printer setting in 6.3.4 A) "Report print setting instant value print setting".

\* You can adjust the print image by setting the margin.



(3) Zoom mode selection

Select the print image magnification. You can select one of the following values:

"Auto," "50%," "75%," "100%," "125%," "150%," "200%," and "300%"

(4) Print image

Shows the print image.

(5) Page selection

Use the up and down buttons to turn pages, by one page at a time.

(6) Header1

Record management file name and group name are displayed.

Also, if you enter "Graph title" in "Options", the graph title will be displayed at the top of the record management file name. For options, refer to Section 6.3.4 A) "Report print setting".

(7) Header2

Recorder information, recorder version ([Main], [AI]), Ex.Sec Viewer version, printing date and time are displayed.

(8) Footer

Signature information is displayed.

(9) Data range

Displays the currently displayed daily or monthly report period.

(10) CH information

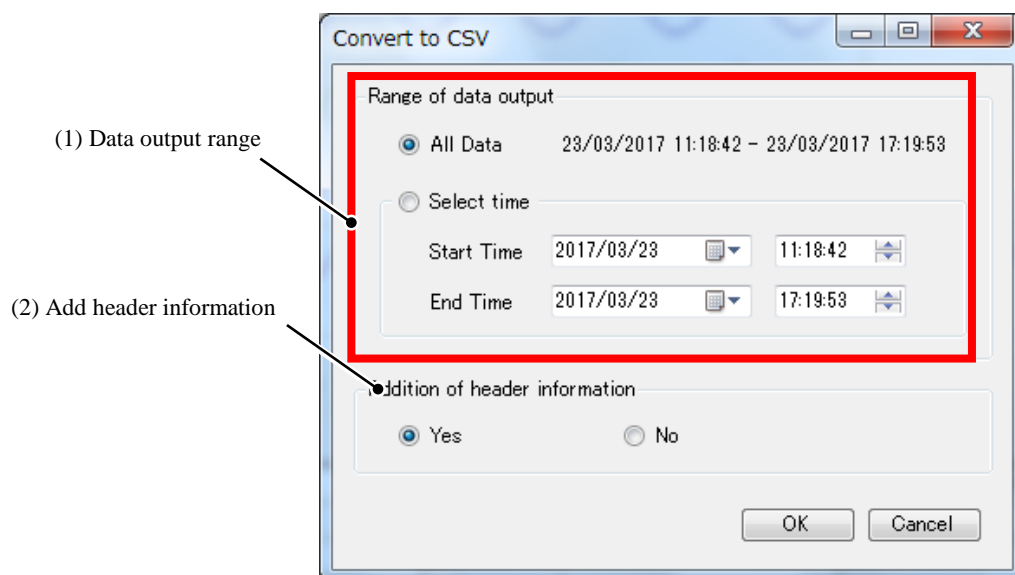
The information of the recorded channel is displayed.

## 6.4 File-related Operation

### 6.4.1 Converting to CSV

The record data can be converted to CSV file format. When you select “Save CSV” from the “File” menu, the Convert to CSV dialog shown in below opens.

You can look up CSV files using Excel (\*) and other applications.



(1) Data output range

Select the range of data to be output.

- All data: All data from recording start to recording stop will be output.
- Range specification: Data in a specified range of time will be output. (The initial data output range is "All data.")

(2) Add header information

Specify whether to add header information, including channel and group information, to the CSV files.

When you click the “OK” button, a dialog opens, prompting you to select the save-to folder.

When you select the save-to folder, the following three CSV files are created:

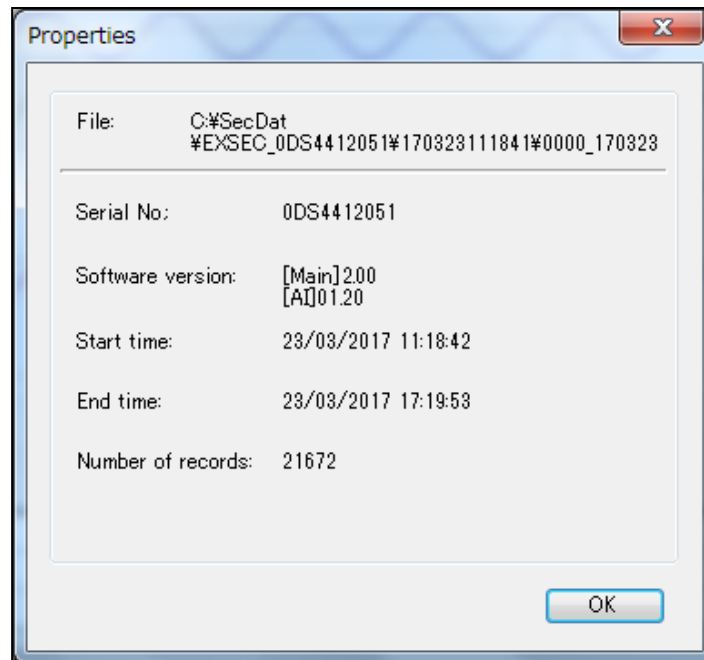
- \*\*\*dmt.csv file : Main trend file
- \*\*\*dst.csv file : Sub trend file
- \*\*\*dms.csv file : Signature information file (Main record)
- \*\*\*dss.csv file : Signature information file (Sub record)
- \*\*\*dme.csv file : Event file

\*For the CSV file output image, refer to Appendix 3"Record Format (ASCII)."

### 6.4.2 Properties

The Properties dialog displays file information. The following items are displayed:

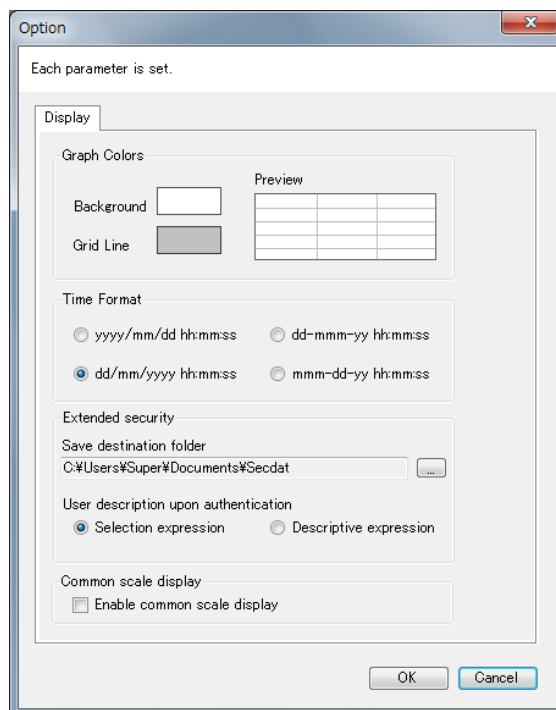
"File path," "Serial number," Software version (of the recorder)," "(Measurement) start time," "(Measurement) end time," "Number of records," and "Record cycle."



## 6.5 Option

You can use Options to configure "View" settings.

After setting changes are completed, click the "OK" button to save the settings.



Item	Setting value/input range	Description
Background color	All colors	Set the background color of "real-time trend window" and "trend window".(*1)
Grid	All colors	Set the cell border color on "real-time trend window" and "trend window".(*1)
Time format	yyyy/mm/dd hh:mm:ss dd/mm/yyyy hh:mm:ss dd-mmm-yy hh:mm:ss mmm-dd-yy hh:mm:ss	Set the time format on the entire Data Viewer, including the format for record data measurement times. (*2)
Save destination folder	Folder reference	Select the folder where you want to import recorded data.
User description upon authentication	Selection expression/ Descriptive expression	Select the method of describing the username at login and signature. Selection expression : It is a method of selecting from the user name set on the recorder and entering it. Descriptive expression : It is a method of entering a user name with a keyboard.
Common scale display	Enable common scale display	When a measurement file is opened, a common scale display is enabled. The common scale display is a function to display it as a common scale if "Unit" and "Scale" are the same.

\*1 Select any color from the Select Color dialog, and preview the results by looking at the graph image displayed on the preview area.

\*2 Time format examples (representing 13:00:00 on April 1, 2012)

yyyy/mm/dd hh:mm:ss → 2012/04/01 13:00:00  
dd/mm/yyyy hh:mm:ss → 01/04/2012 13:00:00  
dd-mmm-yy hh:mm:ss → 01-Apr-12 13:00:00  
mmm-dd-yy hh:mm:ss → Apr-01-12 13:00:00

# 7.Troubleshooting

No.	Problem	Action
1	Ex.Sec Viewer can't start up.	Please insert the authentication key in PC and start it.
2	I forgot the login password for the administrator account.	Recorder: - If only one administrator account is registered → Contact your dealer or our sales staff. - If two or more administrator accounts are registered → Refer to Section 4.2.10, "Resetting the password (if you forget the password)." Ex.Sec Viewer : Contact your dealer or our sales staff.
3	I forgot the login password for the user account.	Recorder: Refer to Section 4.2.10, "Resetting the password (if you forget the password)." Ex.Sec Viewer : Contact your dealer or our sales staff.
4	The authentication-key does not operate.	Contact your dealer or our sales staff. For details about the authentication-key, refer to Section 5.1.6, "About the authentication-key."
5	I lost my authentication-key.	Contact your dealer or our sales staff.
6	There is no data for extended security.	The extended security function could not be enabled. Refer to Section 4.2.1, "Enabling the extended security function."
7	Recorded data can't be imported.	The extended security function could not be enabled. Refer to Section 4.2.1, "Enabling the extended security function."
8	I mistook the input of signature information.	It can't be canceled after signature. Please sign carefully.
9	I want to change items permitted for the user account.	If you log in using the administrator account, you can edit the relevant account again. Configure settings according to Section 4.3.1, "Registering a user."
10	I want to use the parameters set on Parameter Loader.	Save the parameters in the following file path in the SD card and load the parameters from "System " -> "SD / Param" -> "Param save" and use. Parameter storage destination: "SD / Recorder / Prm"
11	(Use the Parameter Loader) Parameter can't be changed via network.	If the security mode is extended security, you can't change parameters via the network. Save the parameters in the following file path in the SD card and load the parameters from "System " -> "SD / Param" -> "Param save" and use. Parameter storage destination: "SD / Recorder / Prm"
12	Real-time trend of Data Viewer can't be used.	When security mode is extended security, real time trend can not be used. Please import the file to Ex.Sec Viewer and check the recorded data.
13	Recording can't be started with DI.	When the security mode is extended security, recording can not be started / stopped by DI input. In order to start / stop recording with DI input, it is necessary to turn off security mode.
14	Recording stopped automatically.	When the security mode is extended security, the overwrite function is turned off. Therefore, when the remaining capacity of the internal memory and SD card runs out, recording may stop. We recommend the following action. - Insert the SD card and record it. - Periodically check the remaining capacity of the inserted SD card. in the recorder. It is also possible to perform DO output with the function of "Int. SP DO" when the remaining capacity of the SD card becomes 10% or less .(For details, refer to the main unit instruction manual.)

No.	Problem	Action
15	Recording is not stopped, but the recording file is divided.	When the power is turned off during recording, the recording file will be split. It may occur at power failure. Since it is impossible to combine recording files, please confirm, sign, etc for each recording file.
16	I failed to log in 10 consecutive times and the account was locked.	You will not be able to log in for 24 hours when your account is locked. In order to use the account again, it is necessary to log in again after 24 hours, log in as an administrator user, and clear the password. For details on clearing passwords, refer to Section 4.2.10 "Resetting the password (In the case of password forgot)".
17	Trend print, security log print, Max. / Min. / Ave. print direction, paper size can not be changed.	The print direction and paper size settings can be changed from "Printer settings" under "Instant value print" and "Report print".
18	Report can not be output.	This is because you have set the recording type to "Max / Min" and recorded data. . We are sorry, but with this function, it is not possible to create a report from the recorded data of the record type "Max / Min". Set the recording type to "Average" or "instant value" on the main unit, and then record.
19	The trend is not displayed cleanly in the "Max./ Min./ Ave." function.	Please try the following. -Use "Common scale display" in the display menu to reduce the number of displayed scales. -Adjust the data output range. - Adjust the margin.
20	Report print preview window is not displayed.	When the number of data is large, it may take about 5 minutes to display.

# Appendix

## Appendix - 1 Selection List of Permitted Items

The list of operation items that can be permitted for the user account is shown below.

The major item indicates each key in the permitted operation items. The minor items indicate an operation item in the major items.

The relevant setting item indicates a key or operation for a minor item.

No.	Major item	Sub item	Key,Operation
1	Parameter	Input	Parameter - Input CH - Input
2		Scaling	Parameter - Input CH - Scaling
3		Display(Input)	Parameter - Input CH - Display
4		Scale(Input)	Parameter - Input CH - Scale
5		Alarm value(Input)	Parameter - Input CH - Alarm value
6		Alarm action(Input)	Parameter - Input CH - Alarm action
7		REC/CALC(Input)	Parameter - Input CH - REC/CALC
8		Copy(Input)	Parameter - Input CH - Copy
9		F value	Parameter - Calc.CH - F value
10		Timer	Parameter - Calc.CH - Timer
11		Display(Calc)	Parameter - Calc.CH - Display
12		Scale(Calc)	Parameter - Calc.CH - Scale
13		Alarm value(Calc)	Parameter - Calc.CH - Alarm value
14		Alarm action(Calc)	Parameter - Calc.CH - Alarm action
15		REC/CALC(Calc)	Parameter - Calc.CH - REC/CALC
16		Copy(Calc)	Parameter - Calc.CH - Copy
17		Group name	Parameter - Display - Group name
18		Group CH	Parameter - Display - Group CH
19		Graph display	Parameter - Display - Graph display
20		Auto display	Parameter - Display - Auto display
21		Setting(Main)	Parameter - Record - Setting(Main)
22		Setting(Sub)	Parameter - Record - Setting(Sub)
23		Schedule	Parameter - Record - Schedule
24		Unit	Parameter - Other - Unit
25		Message	Parameter - Other - Message
26		DI	Parameter - Other - DI
27		Progress time	Parameter - Other - Progress time
28		ProductsDisplay	Parameter - Other - ProductsDisplay
29		Int,SP DO	Parameter - Other - Int,SP DO
30		Param initial	Parameter - Other - Param initial
31		Wizard	Parameter - Other - Wizard
32	System	Param Save	System - SD/Param - 設定値保存
33		Param load	System - SD/Param - 設定値読込
34		Log output	System - SD/Param - Log output
35		Ethernet1	System - Comm. - Ethernet1
36		Ethernet2	System - Comm. - Ethernet2
37		SNTP1	System - Comm. - SNTP1
38		SNTP2	System - Comm. - SNTP2
39		FTP	System - Comm. - FTP
40		Remote AI	System - Comm. - Remote AI
41		Modbus1	System - Comm. - Modbus1



No.	Major item	Sub item	Key,Operation
42	System	Modbus2	System - Comm. - Modbus2
43		ModbusMas	System - Comm. - ModbusMas
44		LCD	System - Device/Other - LCD
45		Clock	System - Device/Other - Clock
46		FUNC key	System - Device/Other - FUNC key
47		File format	System - Device/Other - File format
48		Jump menu	System - Device/Other - Jump menu
49		Mode	System - Device/Other - Mode
50		Language	System - Device/Other - Language
51		Version	System - Device/Other - Version
52		Key Lock	System - Security - Key Lock
53		Security Mode	System - Security - Security Mode
54	Trend	Signature	Signature operation with Ex.Sec Viewer (support software)
55	Hard buttun	REC key	The REC key of the hard button
56		FUNC key	The FUNC key of the hard button

## Appendix 2 List of Security Logs

No.	Log	When logs are generated
1	Power ON	When the power is turned on
2	Power OFF	When the power is turned off
3	Record start	When recording starts
4	Record stop	When recording ends
5	Login	When the user logs in
6	Logout	When the user logs out
7	fail: Login	When login fails
8	Clear: Event log	When the event history is cleared
9	Clear: Ethernet log	When the transmission history is cleared
10	Add: Comment	When a comment is added to the historical trend
11	Edit: Comment	When an existing comment is edited in the historical trend
12	Delete: Comment	When a comment is deleted from the historical trend
13	Execute: mV Calibration	When mV is calibrated (setting not released to users)
14	Execute: Volt Calibration	When V is calibrated (setting not released to users)
15	Execute: RTD Calibration	When RTD is calibrated (setting not released to users)
16	Execute: RJC Calibration	When RJC is calibrated (setting not released to users)
17	Set: Input CH-Input	When the OK key on the "Input" setting screen in the Input CH is touched
18	Set: Input CH-Scaling	When the OK key on the " Scaling " setting screen in the Input CH is touched
19	Set: Input CH-Display	When the OK key on the " Display " setting screen in the Input CH is touched
20	Set: Input CH-Scale	When the OK key on the " Scale " setting screen in the Input CH is touched
21	Set: Input CH-Alarm value	When the OK key on the " Alarm value " setting screen in the Input CH is touched
22	Set: Input CH-Alarm action	When the OK key on the " Alarm action " setting screen in the Input CH is touched
23	Set: Input CH-REC/CALC	When the OK key on the " REC/CALC " setting screen in the Input CH is touched
24	Execute: Input CH-Copy	When "Copy" in the Input CH is executed
25	Set: Calc. CH-F value	When the OK key on the " F value " setting screen in the Calc.CH is touched
26	Set: Calc. CH-Timer	When the OK key on the " Timer " setting screen in the Calc.CH is touched
27	Set: Calc. CH-Display	When the OK key on the " Display " setting screen in the Calc.CH is touched
28	Set: Calc. CH-Scale	When the OK key on the " Scale " setting screen in the Calc.CH is touched
29	Set: Calc. CH-Alarm value	When the OK key on the " Alarm value " setting screen in the Calc.CH is touched
30	Set: Calc. CH-Alarm action	When the OK key on the " Alarm action " setting screen in the Calc.CH is touched
31	Set: Calc. CH-REC/CALC	When the OK key on the " REC/CALC " setting screen in the Calc.CH is touched
32	Execute: Calc. CH-Copy	When "Copy" in the Calc.CH is executed
33	Set: Display-Group name	When the OK key on the " Group name " setting screen in the Display is touched
34	Set: Display-Group CH	When the OK key on the " Group CH " setting screen in the Display is touched

No.	Log	When logs are generated
35	Set: Display-Graph display	When the OK key on the " Graph display " setting screen in the Display is touched
36	Set: Display-Auto display	When the OK key on the " Auto display " setting screen in the Display is touched
37	Set: Record-Setting(Main)	When the OK key on the " Setting(Main) " setting screen in the Record is touched
38	Set: Record-Setting(Sub)	When the OK key on the " Setting(Sub)" setting screen in the Record is touched
39	Set: Record-Schedule	When the OK key on the " Schedule " setting screen in the Record is touched
40	Add: Others-Unit	When a new unit is added in the "Unit" setting in Others
41	Edit: Others-Unit	When an existing unit is edited in the " Unit" setting in Others
42	Delete: Others-Unit	When an existing unit is deleted in the " Unit " setting in Others
43	Set: Others-Message	When the OK key on the " Message " setting screen in the Others is touched
44	Set: Others-DI	When the OK key on the " DI " setting screen in the Others is touched
45	Set: Others-ProductsDisplay	When the OK key on the " ProductsDisplay " setting screen in the Others is touched
46	Set: Others-Int.SP DO	When the OK key on the " Int.SP DO " setting screen in the Others is touched
47	Set: Others-Progress time	When the OK key on the " Progress time " setting screen in the Others is touched
48	Execute: Others-Progress Time-Manual reset	When " Manual reset " in the Progress Time is executed
49	Execute: Others-Param initial	When " Param initial " in the Others is executed
50	Execute: SD/Param-SD remove	When " SD remove " in the SD/Param is executed
51	Execute: SD/Param-SD format	When " SD format " in the SD/Param is executed
52	Execute: SD/Param-Param save	When " Param save " in the SD/Param is executed
53	Execute: SD/Param-Param load	When " Param load " in the SD/Param is executed
54	Execute: Log output	When " Log output " is executed
55	Set: Comm.-Ethernet1	When the OK key on the " Ethernet1 " setting screen in the Comm. is touched
56	Set: Comm.-Ethernet2	When the OK key on the " Ethernet2 " setting screen in the Comm. is touched
57	Set: Comm.-SNTP1	When the OK key on the " SNTP1 " setting screen in the Comm. is touched
58	Execute: Comm.-SNTP1 Cal Start	When " Cal Start " in the SNTP1 is executed
59	Set: Comm.-SNTP2	When the OK key on the " SNTP2 " setting screen in the Comm. is touched
60	Add: Comm.-FTP user	When a new FTP user is added in the "FTP" setting in Comm.
61	Edit: Comm.-FTP user	When an existing FTP user is edited in the "FTP" setting in Comm.
62	Delete: Comm.-FTP user	When an existing FTP user is deleted in the "FTP" setting in Comm.
63	Set: Comm.-Remote AI	When the OK key on the " Remote AI " setting screen in the Comm. is touched
64	Set: Comm.-Modbus1	When the OK key on the " Modbus1" setting screen in the Comm. is touched
65	Set: Comm.-Modbus2	When the OK key on the " Modbus2" setting screen in the Comm. is touched
66	Set: Device/Other-LCD	When the OK key on the " LCD " setting screen in the Device/Other is touched
67	Set: Device/Other-Clock	When the OK key on the " Clock " setting screen in the Device/Other is touched
68	Set: Device/Other-FUNK key	When the OK key on the " FUNK key " setting screen in the Device/Other is touched
69	Set: Device/Other-File format	When the OK key on the " File format " setting screen in the Device/Other is touched
70	Add: Device/Other-Jump menu	When a new jump menu is added in the "Jump menu" setting in Device/Others

No.	Log	When logs are generated
71	Delete: Device/Other-Jump menu	When an existing jump menu is deleted in the "Jump menu" setting in Device/Others
72	Set: Device/Other-Mode	When the OK key on the " Mode " setting screen in the Device/Other is touched
73	Set: Device/Other-Language	When the OK key on the " Language " setting screen in the Device/Other is touched
74	Set: Security-Security Mode	When the OK key on the " Security Mode " setting screen in the Security is touched
75	Set: Security-Key lock	When the OK key on the " Key lock " setting screen in the Security is touched
76	Add: Security-User Regist	When a new user is added in the " user Regist." setting in Security
77	Edit: Security-User Regist	When an existing user is edited in the "user Regist." setting in Security
78	Delete: Security-User Regist	When an existing user is deleted in the " user Regist." setting in Security
79	Execute: Remote AI Retry	When the remote AI is reconnected
80	Execute: ModbusMas Retry	When the Modbus master is reconnected
81	Execute: Addition reset	When accumulation is reset with the FUNC button
82	Auto Logout	When no operations are performed for five minutes (only when "Auto + Manual" is set to the logout setting in the extended security mode)
83	Execute: Register production information.	Setting in production information setting by FUNC button When key is touched
84	Set: ModbusMas.-Rd(Cyclic)	When the OK key on the " Rd (Cyclic)" setting screen in the ModbusMas. is touched
85	Set: ModbusMas.-Write Param	When the OK key on the " Write Param" setting screen in the ModbusMas. is touched
86	Set: ModbusMas.-Wrt (Cyclic)	When the OK key on the " Wrt (Cyclic)" setting screen in the ModbusMas. is touched
87	Set: ModbusMas.-Wrt (Display)	When the OK key on the " Wrt (Display)" setting screen in the ModbusMas. is touched
88	Set: ModbusMas.-Wrt (Event)	When the OK key on the " Wrt (Event)" setting screen in the ModbusMas. is touched
89	Execute: Button1 (Write Operation)	When "Button 1" is touched on the write operation screen
90	Execute: Button2 (Write Operation)	When "Button 2" is touched on the write operation screen
91	Execute: Button3 (Write Operation)	When "Button 3" is touched on the write operation screen
92	Execute: Button4 (Write Operation)	When "Button 4" is touched on the write operation screen
93	Execute: Button5 (Write Operation)	When "Button 5" is touched on the write operation screen
94	Execute: Button6 (Write Operation)	When "Button 6" is touched on the write operation screen
95	Execute: Button7 (Write Operation)	When "Button 7" is touched on the write operation screen
96	Execute: Button8 (Write Operation)	When "Button 8" is touched on the write operation screen



## 2. Event data file (\*\*dme.csv)

SerialNur	0DS4412051				
Version	[Main]1.	(1)			
	70c				
	[AI]01.2				
	0				
Date	Time	Alarm	CH	Level	Status
Date	Time	Message	Status		
31/03/20	20:26:44	System	Record Start		
31/03/20	20:26:50	Alarm	1	1	H occurrence
31/03/20	20:27:23	Alarm	1	1	H recovery
31/03/20	20:28:02	Alarm	1	1	H occurrence
31/03/20	20:28:35	Alarm	1	1	H recovery
31/03/20	20:29:14	Alarm	1	1	H occurrence
31/03/20	20:29:47	Alarm	1	1	H recovery
31/03/20	20:30:26	Alarm	1	1	H occurrence
31/03/20	20:30:59	Alarm	1	1	H recovery
31/03/20	20:31:38	Message	DEMO	(3)	
31/03/20	20:32:11	Alarm	1	1	H occurrence
31/03/20	20:32:50	Alarm	1	1	H recovery
31/03/20	20:33:23	System	Record Stop		

### (1) Header information 1

The "Serial number," "Main version," "AI version," of the record data are output.

### (2) Event data (alarm)

The "Alarm type," "Alarm-source channel," "Alarm level," and "Status" of each alarm that occurred during recording are output.

\* For information on alarms, refer to Instruction Manual for the Paperless Recorder.

### (3) Event data (message)

The "Message type" and "Message text" of each message generated during recording are output.

\* For information on alarms, refer to Instruction Manual for the Paperless Recorder.

## 3. Signature information file (\*\*dms.csv,\*\*dss.csv)

SerialNur	0DS4412051				
Version	[Main]1.	(1)			
	70b				
	[AI]01.2				
	0				
	Status	User name	Note	Date	Comment
Sign1	Pass	Operator1	No.0001	05/04/2017 18:47:56	TEST fin.
Sign2	Pass	Engineer	John	05/04/2017 18:48:23	confirmed
Sign3	Pass	Administrator	Bob	05/04/2017 18:49:48	Approved

### (1) Header information

The "Serial number," "Main version," "AI version," of the record data are output.

### (2) signature information

"Signature state", "signer", "arbitrary character", "signature date and time" and "comment" are output as signature information.

\*signature information, refer to Section 5.3.4" Signature ".

## Appendix 4 Extended security function list for 21 CFR Part 11

Items	21 CFR Part11 Requirements	Support status of extended security function
§11.10.	Controls for closed systems.	
§11.10. (a)	Validation of systems to ensure accuracy, reliability, consistent intended performance, and the ability to discern invalid or altered records.	<b>✗ Unsupported</b> It is necessary for the customer to construct the system.
§11.10. (b)	The ability to generate accurate and complete copies of records in both human readable and electronic form suitable for inspection, review, and copying by the agency. Persons should contact the agency if there are any questions regarding the ability of the agency to perform such review and copying of the electronic records.	<b>○ Supported</b> Recorded data is saved as custom binary data. By using the special PC software "Ex.Sec Viewer", you can browse recorded data, check the audit trail, print, and transfer data.
§11.10. (c)	Protection of records to enable their accurate and ready retrieval throughout the records retention period.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system. You should back up the data periodically by using export function.
§11.10. (d)	Limiting system access to authorized individuals.	<b>○ Supported</b> You can set up access restrictions by user name, password, level, and you can register up to 20 accounts. In addition, it is also possible to apply restrictions on operation items to the account whose level is "user".
§11.10. (e)	Use of secure, computer-generated, time-stamped audit trails to independently record the date and time of operator entries and actions that create, modify, or delete electronic records. Record changes shall not obscure previously recorded information. Such audit trail documentation shall be retained for a period at least as long as that required for the subject electronic records and shall be available for agency review and copying.	<b>○ Supported</b> The operation log is always recorded by the audit trail function. It is output in binary format with recorded data. When data falsification etc. are detected, it becomes impossible to browse the data, so secure management is possible.
§11.10. (f)	Use of operational system checks to enforce permitted sequencing of steps and events, as appropriate.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system.
§11.10. (g)	Use of authority checks to ensure that only authorized individuals can use the system, electronically sign a record, access the operation or computer system input or output device, alter a record, or perform the operation at hand.	<b>○ Supported</b> You can set up access restrictions by user name, password, level, and you can register up to 20 accounts. In addition, it is also possible to apply restrictions on operation items to the account whose level is "user".
§11.10. (h)	Use of device (e.g., terminal) checks to determine, as appropriate, the validity of the source of data input or operational instruction.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system.
§11.10. (i)	Determination that persons who develop, maintain, or use electronic record/electronic signature systems have the education, training, and experience to perform their assigned tasks.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system.
§11.10. (j)	The establishment of, and adherence to, written policies that hold individuals accountable and responsible for actions initiated under their electronic signatures, in order to deter record and signature falsification.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system.
§11.10. (k)	Use of appropriate controls over systems documentation including: (1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance. (2) Revision and change control procedures to maintain an audit trail that documents time-sequenced development and modification of systems documentation.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system.

Items	21 CFR Part11 Requirements	Support status of extended security function
§11.30.	Controls for open systems.	
§11.30.	Persons who use open systems to create, modify, maintain, or transmit electronic records shall employ procedures and controls designed to ensure the authenticity, integrity, and, as appropriate, the confidentiality of electronic records from the point of their creation to the point of their receipt. Such procedures and controls shall include those identified in §11.10, as appropriate, and additional measures such as document encryption and use of appropriate digital signature standards to ensure, as necessary under the circumstances, record authenticity, integrity, and confidentiality.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system. The extended security function is a closed system.
§11.50.	Signature manifestations.	
§11.50.	(a) Signed electronic records shall contain information associated with the signing that clearly indicates all of the following: (1) The printed name of the signer; (2) The date and time when the signature was executed; and (3) The meaning (such as review, approval, responsibility, or authorship) associated with the signature. (b) The items identified in paragraphs (a)(1), (a)(2), and (a)(3) of this section shall be subject to the same controls as for electronic records and shall be included as part of any human readable form of the electronic record (such as electronic display or printout).	<b>○ Supported</b> Electronic signature is possible on the dedicated PC software "Ex.Sec Viewer". The electronic signature information is as follows. - Signature status (Pass / Fail) - Signer name - Signature time - Comment Up to three signatures are possible for one recorded data.
§11.70.	Signature/record linking.	
§11.70.	Electronic signatures and handwritten signatures executed to electronic records shall be linked to their respective electronic records to ensure that the signatures cannot be excised, copied, or otherwise transferred to falsify an electronic record by ordinary means.	<b>○ Supported</b> Electronic signatures are automatically linked with recorded data when signed. Since it is linked, it can't be deleted and copied.
§11.100.	General requirements.	
§11.100. (a)	Each electronic signature shall be unique to one individual and shall not be reused by, or reassigned to, anyone else.	<b>○ Supported</b> Electronic signatures are possible only for registered accounts. When signing, login operation is required. It is also possible to prohibit the signature of the user level account.
§11.100. (b)	Before an organization establishes, assigns, certifies, or otherwise sanctions an individual's electronic signature, or any element of such electronic signature, the organization shall verify the identity of the individual.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system.
§11.100. (c)	Persons using electronic signatures shall, prior to or at the time of such use, certify to the agency that the electronic signatures in their system, used on or after August 20, 1997, are intended to be the legally binding equivalent of traditional handwritten signatures.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system.
§11.100. (1)	The certification shall be submitted in paper form and signed with a traditional handwritten signature, to the Office of Regional Operations (HFC-100), 5600 Fishers Lane, Rockville, MD 20857.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system.
§11.100. (2)	Persons using electronic signatures shall, upon agency request, provide additional certification or testimony that a specific electronic signature is the legally binding equivalent of the signer's handwritten signature.	<b>✗ Unsupported</b> It is necessary for the customer to manage the system.



Items	21 CFR Part11 Requirements	Support status of extended security function
§11.200.	Electronic signature components and controls.	
§11.200.(a)	<p>Electronic signatures that are not based upon biometrics shall:</p> <p>(1) Employ at least two distinct identification components such as an identification code and password.</p> <p>(i) When an individual executes a series of signings during a single, continuous period of controlled system access, the first signing shall be executed using all electronic signature components; subsequent signings shall be executed using at least one electronic signature component that is only executable by, and designed to be used only by, the individual.</p> <p>(ii) When an individual executes one or more signings not performed during a single, continuous period of controlled system access, each signing shall be executed using all of the electronic signature components.</p> <p>(2) Be used only by their genuine owners; and</p> <p>(3) Be administered and executed to ensure that attempted use of an individual's electronic signature by anyone other than its genuine owner requires collaboration of two or more individuals.</p>	<p><b>(1)、(2) : ○Supported</b></p> <p>This device restricts access by using a combination of two elements, a user name and a password. Also, duplication of combination of user name and password is prohibited. Every time you sign it you will be required to enter these two elements.</p> <p><b>(3) : ✕Unsupported</b></p> <p>It is necessary for the customer to manage the system.</p>
§11.200.(b)	Electronic signatures based upon biometrics shall be designed to ensure that they cannot be used by anyone other than their genuine owners.	<b>✕ Unsupported</b>
§11.300.	Controls for identification codes/passwords.	
§11.300. (a)	Maintaining the uniqueness of each combined identification code and password, such that no two individuals have the same combination of identification code and password.	<p><b>○Supported</b></p> <p>Duplication of combination of user name and password is prohibited on this device.</p>
§11.300.(b)	Ensuring that identification code and password issuances are periodically checked, recalled, or revised (e.g., to cover such events as password aging).	<p><b>○Supported</b></p> <p>The expiration date of the password can be arbitrarily set from 1 to 365 days. If it expires, you will need to enter the previous password and enter the new password to be registered.</p>
§11.300.(c)	Following loss management procedures to electronically deauthorize lost, stolen, missing, or otherwise potentially compromised tokens, cards, and other devices that bear or generate identification code or password information, and to issue temporary or permanent replacements using suitable, rigorous controls.	<p><b>✕ Unsupported</b></p> <p>It is necessary for the customer to manage the system.</p>
§11.300.(d)	Use of transaction safeguards to prevent unauthorized use of passwords and/or identification codes, and to detect and report in an immediate and urgent manner any attempts at their unauthorized use to the system security unit, and, as appropriate, to organizational management.	<p><b>○Supported</b></p> <p>The following functions are provided to prevent unauthorized login.</p> <p>If the password mistake has been made ten consecutive times, the login operation of the target account is prohibited for 24 hours.</p>
§11.300.(e)	Initial and periodic testing of devices, such as tokens or cards, that bear or generate identification code or password information to ensure that they function properly and have not been altered in an unauthorized manner.	<p><b>✕ Unsupported</b></p> <p>It is necessary for the customer to manage the system.</p>