

Human Machine Interface (HMI) GOT

Alarm Display (Display and Storage)

This training course is intended for those who use the alarm display of the GOT2000 Series HMI for the first time.

In this course, we will learn how to display alarms on the GOT using the alarm display (user) function and how to collect alarm data and store/convert the data using the user alarm observation function with the screen design software GT Designer3.

As prerequisites for this course, you should have already completed the following courses or possess the equivalent knowledge in:

- FA Equipment for Beginners (HMIs)
- GOT2000 Basics (GOT Introduction)
- GT Works3 (GT Designer3) Basics (Screen Design Introduction)
- GT Works3 (GT Designer3) Basics (Elementary Screen Design)
- Alarm Display (Introduction)

The contents of this course are as follows.
We recommend that you start from Chapter 1.

Chapter 1 Overview

We will learn the overview of alarm collection/storage/conversion settings to be configured in this course.

Chapter 2 Alarm Data Collection/Storage/Conversion settings (User Alarm Observation)

We will learn the settings to collect/store/convert alarm data using the user alarm observation function.

Chapter 3 Placing an Alarm Display (User) Object

We will learn how to place an alarm display (user) object and display alarms.

Chapter 4 Creating an Alarm Generation Switch

We will learn how to create a switch to generate pseudo alarms.

Chapter 5 Creating a Switch or Others to Convert an Alarm Log File to a CSV File

We will learn how to create a switch or others to convert an alarm log file to a CSV file.

Chapter 6 Transferring Data to the GOT and Enabling Alarm Collection and Display

We will learn the settings to transfer data to the GOT and enable alarm collection and display.

Chapter 7 Storing/Converting Collected Alarm Data and Checking the Data on the Personal Computer

We will learn how to store the collected alarm data, convert the data to a CSV file, and check the data on the personal computer.

Final Test

Passing grade: 60% or higher.

Following is an explanation of how to use the graphical user interface.

Go to the next page		Go to the next page.
Back to the previous page		Back to the previous page.
Move to the desired page		"Table of Contents" will be displayed, enabling you to navigate to the desired page.
Exit the learning		Exit the learning. Window such as "Contents" screen and the learning will be closed.

Safety precautions

When you learn based on using actual products, please carefully read the safety precautions in the corresponding manuals.

In this chapter, we will learn the configuration of the learning equipment, equipment list, and overview of the alarm collection/display/storage settings.

1.1 Configuration of the learning equipment

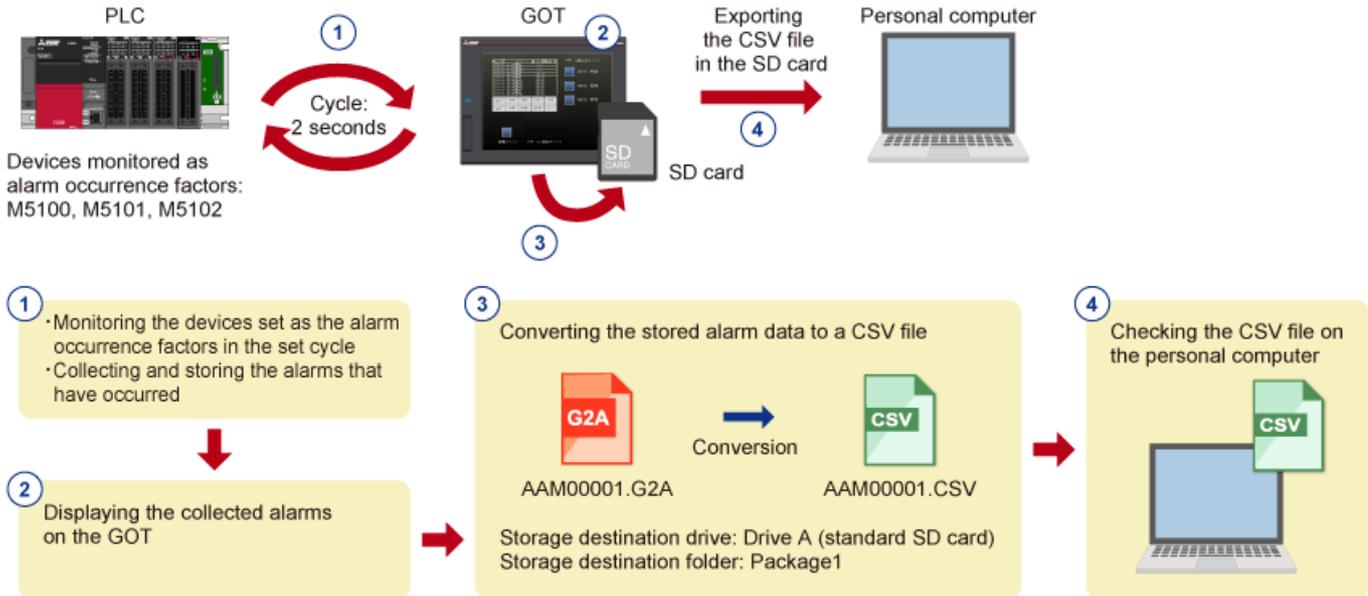
1.2 Learning equipment list

1.3 Overview of the alarm collection/display/storage settings for learning

Photo/illustration	Name	Application/setting
	Personal computer	Used to create GOT project data and transfer the data to the GOT. Also used to create sequence programs to check the operation of the created GOT project data, and write the programs to the programmable controller (PLC).
	GOT Screen Design Software MELSOFT GT Works3	Includes GT Designer3 (software for creating project data) and GT Simulator3 (software for simulating the GOT). Install GT Designer3 on the personal computer. (Model: SW1DND-GTWK3-E)
	Programmable Controller Engineering Software MELSOFT GX Works3	Engineering tool for configuring settings, programming, debugging, and maintenance for PLCs including the MELSEC iQ-R/MELSEC iQ-F Series. Install the software on the personal computer.
	GOT	Displays the created project data on the screen to monitor and operate PLCs. (Model: GT2710-VTBD)
	USB cable	Used to connect the GOT and the personal computer. (Model: GT09-C30USB-5P)
	PLC	Used to run the sequence programs. (Model: R04CPU)
	Ethernet cable	Used to connect the GOT and the PLC. * Use a commercially available Ethernet cable that meets the 100BASE-TX standard (recommended to use Category 5 or higher shielded cable).

Photo/illustration	Name	Application/setting
 A standard SD card with a white label that reads "SD CARD".	SD card	Stores alarm data. Install it on drive A of the GOT. (Model: NZ1MEM-16GBSD)
 A circular battery with a blue casing and a white label, connected to a small circuit board with red and black wires.	Battery	Used to keep the alarm data stored in the buffering area even while the GOT power supply is turned off (power-failure backup). (Model: GT11-50BAT)

In this course, we will learn how to collect and store the generated alarms using the user alarm observation function, how to display the alarms on the GOT using the alarm display (user) function, and how to convert the alarm data to a CSV file to check the data on the personal computer.



In this chapter, we will learn how to collect alarm data and store/convert the data using the user alarm observation function.

2.1 Opening the user alarm observation dialog and setting an alarm ID ([Basic] tab)

2.2 Setting an alarm data collection mode ([Basic] tab)

2.3 Setting the number of alarms to be stored ([Basic] tab)

2.4 Setting a monitoring cycle and the alarm points ([Device] tab)

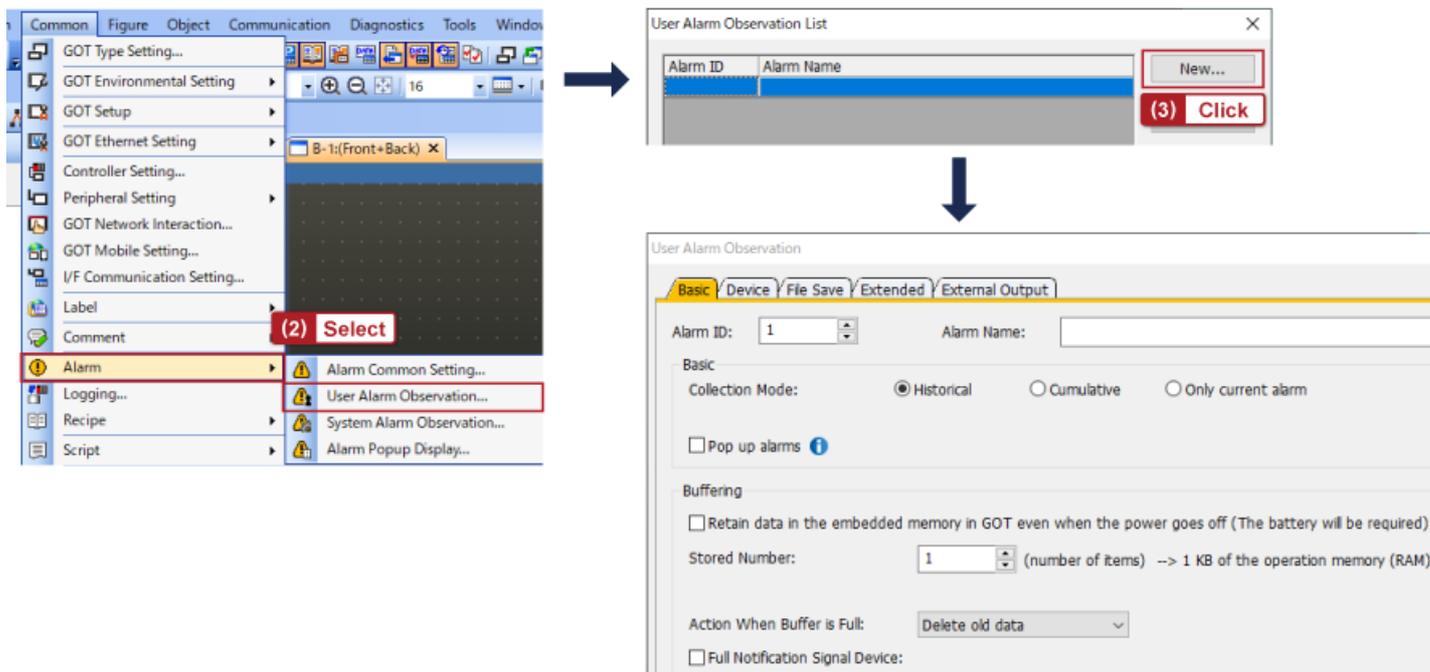
2.5 Setting the monitoring target devices and comments ([Device] tab)

2.6 Alarm data storage settings ([File Save] tab)

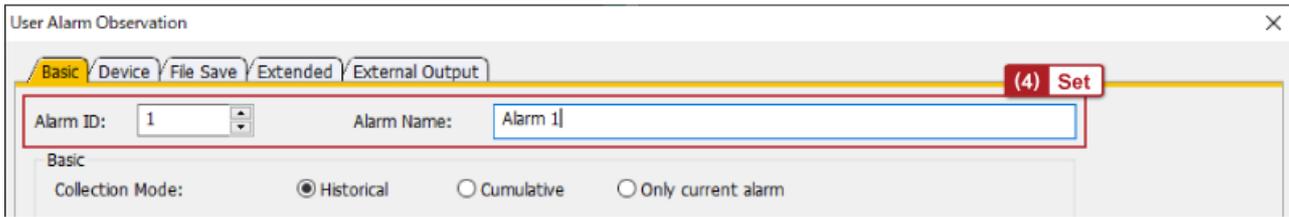
2.7 Configuring the settings to convert an alarm log file ([File Save] tab)

Display the [User Alarm Observation] dialog in GT Designer3 and start each setting.

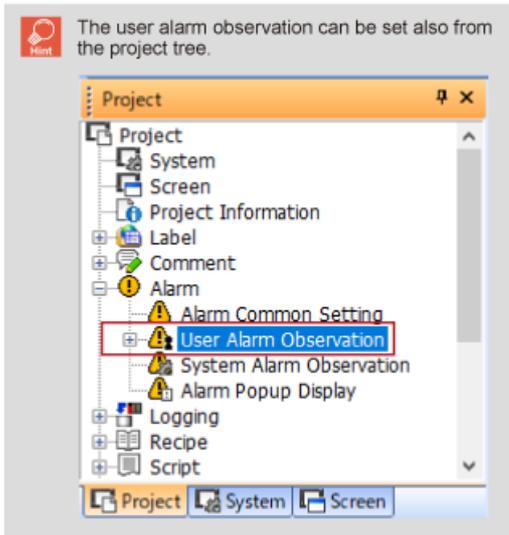
- (1) Start GT Designer3 and create a project.
- (2) Select [Common] → [Alarm] → [User Alarm Observation] from the menu to display [User Alarm Observation List].
- (3) Click [New] to display the [User Alarm Observation] dialog.



(4) Set an alarm ID and name in the [User Alarm Observation] dialog.

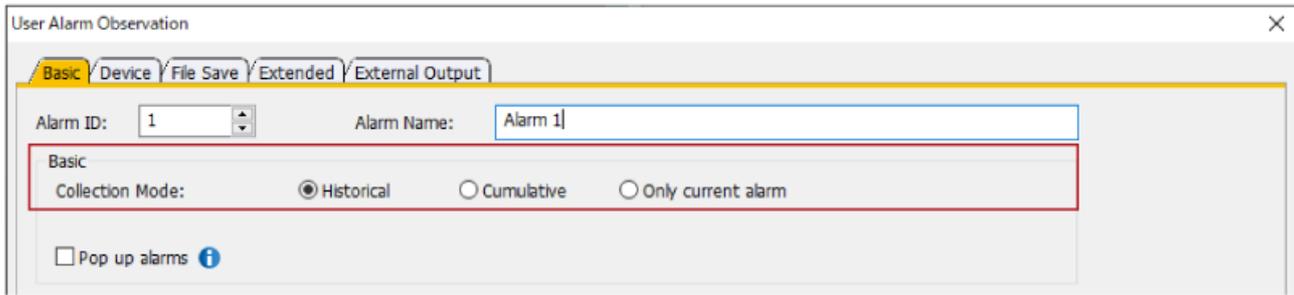


Item	Setting example
Alarm ID	1
Alarm Name	Alarm 1



Set an alarm data collection mode.

(1) Select [Historical].

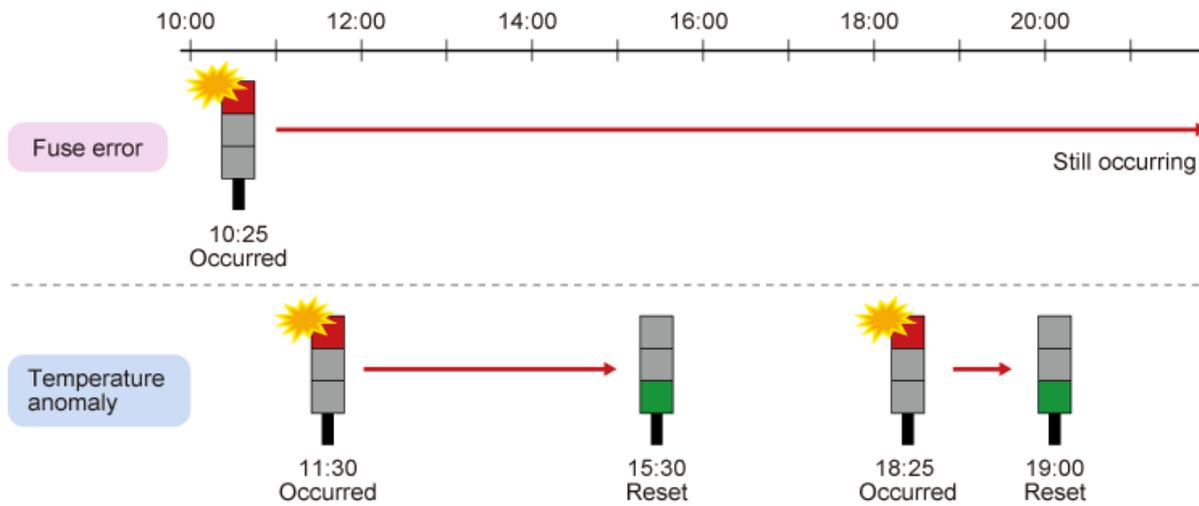


The screenshot shows a dialog box titled "User Alarm Observation" with a close button (X) in the top right corner. The dialog has four tabs: "Basic", "Device", "File Save", "Extended", and "External Output". The "Basic" tab is selected. Below the tabs, there are two input fields: "Alarm ID:" with a dropdown menu showing "1", and "Alarm Name:" with a text box containing "Alarm 1". Below these fields is a section titled "Basic" with a red border. Inside this section, there is a "Collection Mode:" label followed by three radio buttons: "Historical" (which is selected), "Cumulative", and "Only current alarm". Below the "Collection Mode" section, there is a checkbox labeled "Pop up alarms" with an information icon (i) to its right.

Item	Setting example
Collection Mode	Historical

Three alarm data collection modes ([Historical], [Cumulative], [Only current alarm]) are available. The following explains the differences among the collection modes when an alarm occurs as shown below.

Alarm occurrence example



1) Historical mode

Each user alarm is added to the history when it occurs.

Error date and time	Comment	Restored	Frequency
Jun. 1, 2013 18:25	Temperature anomaly		
Jun. 1, 2013 11:30	Temperature anomaly	15:30	
Jun. 1, 2013 10:25	Fuse error		

Even the same alarm is displayed if it occurs

2) Cumulative mode

Collects the latest user alarm status and the alarm counts and time together for each user alarm.

Error date and time	Comment	Restored	Frequency
Jun. 1, 2013 18:25	Temperature anomaly	19:00	2
Jun. 1, 2013 10:25	Fuse error		1

Occurrences are counted up for same alarms

3) Current alarm only

Only currently occurring alarms are collected.

Error date and time	Comment	Restored	Frequency
Jun. 1, 2013 10:25	Fuse error		

When reset, the alarm is not displayed

Set the number of alarms to be stored.

(1) Set the number of alarm data items to be stored for [Stored Number].

(2) To configure the power-failure backup setting, select [Retain data in the embedded memory in GOT even when the power goes off (The battery will be required)].

Buffering (1)(2) Set

Retain data in the embedded memory in GOT even when the power goes off (The battery will be required)

Stored Number: (number of items) --> 1 KB of the operation memory (RAM) will be used.

Item	Setting example
Stored Number	10

-  • [Stored Number] cannot be smaller than [Alarm Points] to be set in the next section.
- The power-failure backup setting is not available for models to which a battery cannot be installed.

Set a device monitoring cycle and the alarm points.

(1) Set a device monitoring cycle for [Watch Cycle] and the number of monitoring target devices for [Alarm Points].

User Alarm Observation

Basic Device File Save Extended External Output

Watch Cycle: 20 (x100ms) Device Type: Bit

Alarm Points: 3 Device Setting: Continuous

(1) Set

Comment

Basic Alarm Comment

Comment Group No.: 1 Comment No.: Continuous Random

Preview Column No.: 1

Alarm Hierarchy Setting... Additional Setting... Copy... Im Ex

	Device	Alarm Range	Basic Alarm Comment No.	Reset
1		ON	1	YES 0
2		ON	2	YES 0
3		ON	3	YES 0

Item	Setting example
Watch Cycle	20 (x100ms)
Alarm Points	3

Set the monitoring target devices and the display range.

(1) Set the monitoring target devices. In the previous section, we set "3" for [Alarm Points]; therefore, three devices can be set.

User Alarm Observation

Basic Device File Save Extended External Output

Watch Cycle: 20 (x100ms) Device Type: Bit

Alarm Points: 3 Device Setting: Continuous

Comment

Basic Alarm Comment

Comment Group No.: 1 Comment No.: Continuous Random

Preview Column No.: 1

Alarm Hierarchy Setting... Additional Setting... Copy...  

	Device	Alarm Range	Basic Alarm Comment No.	Reset
1	M5100	ON	1	YES 0
2	M5101	ON	2	YES 0
3	M5102	ON	3	YES 0

Item	Setting example
Device	M5100, M5101, M5102

(2) Set the alarm occurrence condition in [Alarm Range].

		(2) Set			
Device	Alarm Range	Basic Alarm Comment No.	Reset		
1	M5100	1	YES	0	
2	M5101	2	YES	0	
3	M5102	3	YES	0	

Item	Setting example
Alarm Range	ON (rise of the bit device)



Alarm range

<When the device type is bit>
Set the alarm condition with the [ON] or [OFF] state of the device.

- [ON]: An alarm occurs on the rising edge of the bit device.
- [OFF]: An alarm occurs on the falling edge of the bit device.

<When the device type is not bit>
• The alarm occurrence condition is the range specified in the [Edit Alarm Range] dialog of [Alarm Range].

Edit Alarm Range X

Alarm Range:

\$V: < ▾ 2 ▾

0 ▾ < ▾ \$V

0 ▾ < ▾ \$V: < ▾ 0 ▾

Other:
 Exp...

Set the comments displayed at alarm occurrence.

(1) Set the comments displayed at alarm occurrence. Click [Edit].

	Device	Alarm Range	Basic Alarm Comment No.			
1	M5100	ON	1	Edit...	YES	0
2	M5101	ON	2		YES	0
3	M5102	ON	3		YES	0

(2) Enter the intended comment in the [Edit Comment] dialog and click the [OK] button.

Edit Comment [X]

Group No.: Comment No.:

Column No.: 0 character(s)
(0 digit(s) (one-byte), 1 line(s))

Comment:

OK **Cancel**

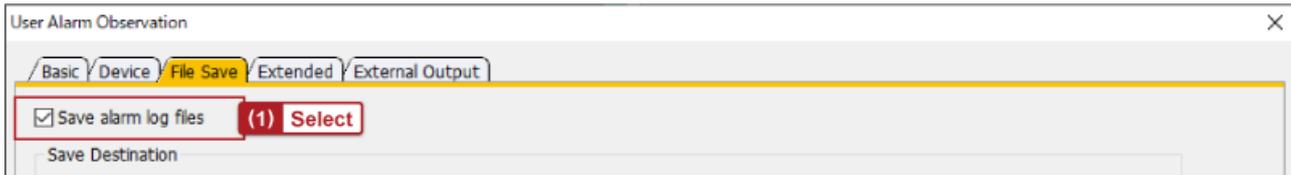
(3) Set the comments for all the three devices.

Alarm Hierarchy Setting...		Additional Setting...		Copy...		<i>I</i> m		<i>E</i> x	
	Device	Alarm Range	Basic Alarm Comment No.		(3) Enter				
1	M5100	ON	1	Error 1	YES		0		
2	M5101	ON	2	Error 2	YES		0		
3	M5102	ON	3	Error 3	YES	Edit...	0		

Item	Setting example
1 (Basic Alarm Comment No.)	Error 1
2 (Basic Alarm Comment No.)	Error 2
3 (Basic Alarm Comment No.)	Error 3

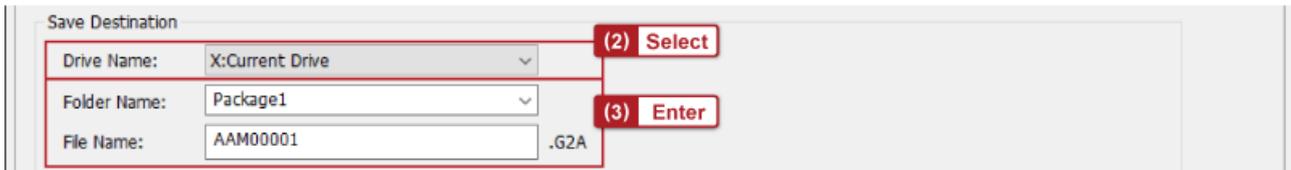
Configure the settings to store alarm data to an alarm log file.

(1) Select [Save alarm log files].



(2) Select a storage destination for [Drive Name].

(3) Enter the storage destination names in [Folder Name] and [File Name].



Item	Setting example
Drive Name	A: Standard SD card
Folder Name	Package1
File Name	AAM00001

(4) Set an alarm data storage timing and a storage trigger device.

Store Trigger (4) Set

Trigger Type: Rise (4) Set

Device: GB100 (4) Set

Item	Setting example
Trigger Type	Rise
Device	GB100

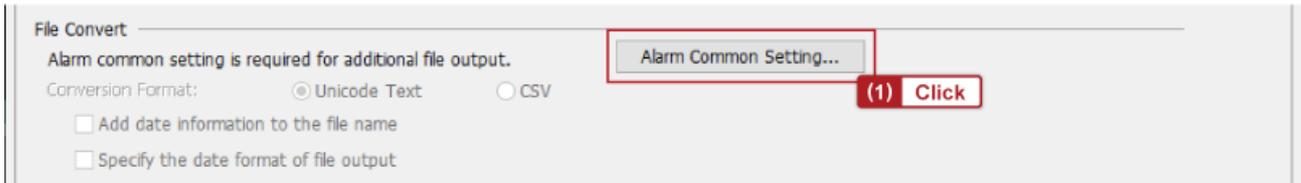


A variety of trigger types are available. Set a storage trigger depending on the purpose.

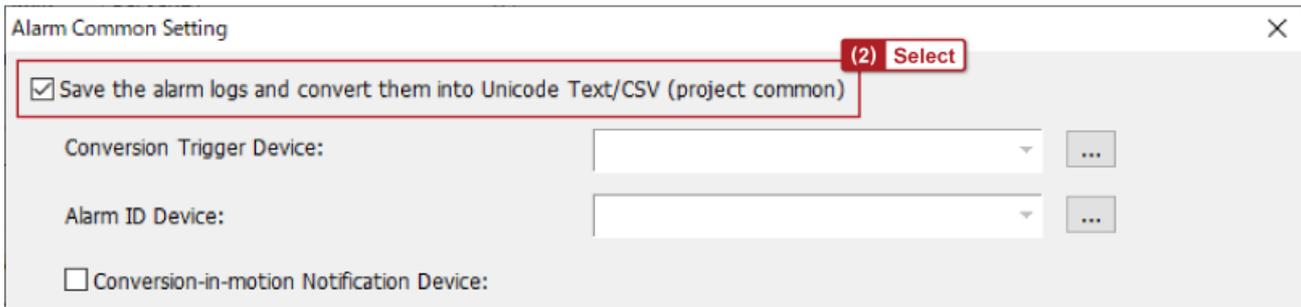
- 1) Rise: Storage is executed when the set device is turned on.
- 2) Fall: Storage is executed when the set device is turned off.
- 3) Sampling: Storage is executed in the set cycle.
- 4) ON Sampling: Storage is executed in the set cycle while the set device is on.
- 5) OFF Sampling: Storage is executed in the set cycle while the set device is off.
- 6) Alarm State Change: Storage is executed when the alarm status changes.

Configure the settings to convert the stored alarm log file to a CSV file.

(1) Click the [Alarm Common Setting] button.



(2) Select [Save the alarm logs and convert them into Unicode Text/CSV (project common)].



(3) Set a conversion trigger device to execute file conversion.

Item	Setting example
Conversion Trigger Device	GB500

(4) Set a device that specifies the target alarm ID for file conversion.

Item	Setting example
Alarm ID Device	GD500

(5) Select a file conversion format and storage destination.

File Convert

Alarm common setting is required for additional file output. [Alarm Common Setting...](#)

Conversion Format: Unicode Text CSV

Add date information to the file name

Specify the date format of file output

Destination: Same as log file Change

Drive Name:

Folder Name:

File Name: .CSV

(5) Select

Item	Setting example
Conversion Format	CSV
Destination	Same as log file

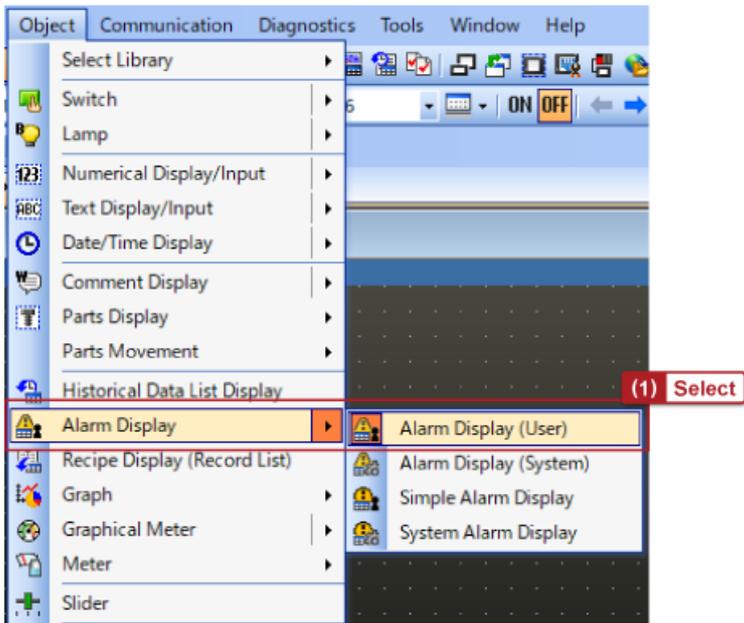
-  Hint
- Select [Add date information to the file name] to add the date to the file name.
 - Select [Specify the date format of file output] to enable selection for the format of the date and time to be displayed.

In this chapter, we will place an alarm display (user) object and configure the settings to display alarms.

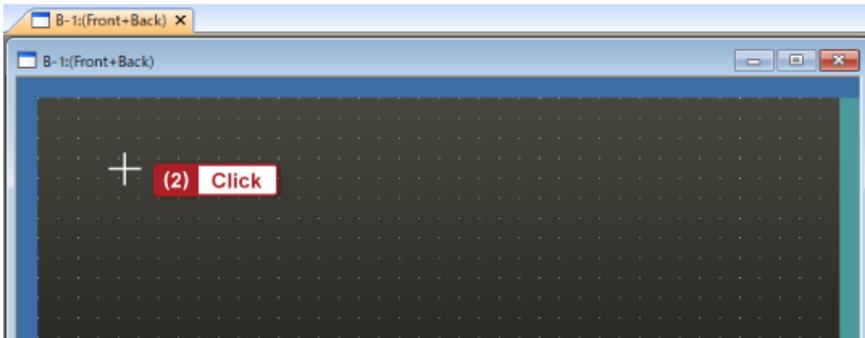
3.1 Placing an alarm display (user) object

Place an alarm display (user) object to enable display of alarms.

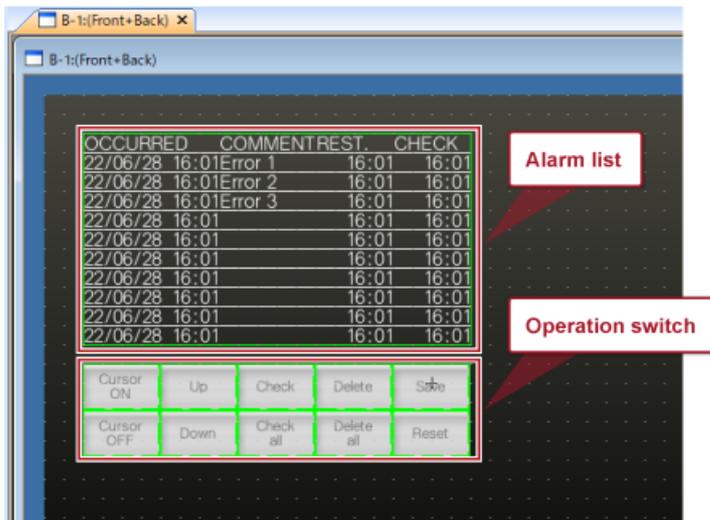
(1) Select [Object] → [Alarm Display] → [Alarm Display (User)] from the menu.



(2) Click anywhere on the base screen to place the alarm display (user) object.



(3) The alarm display (user) object is placed.

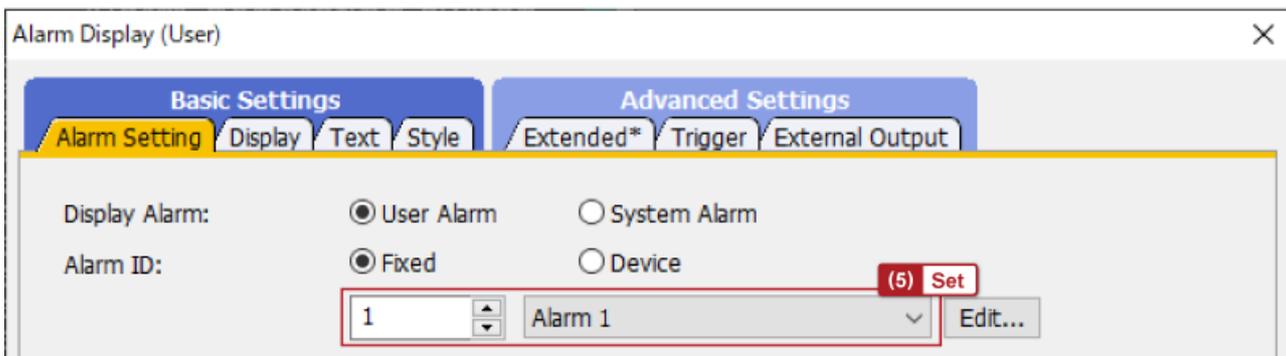


When you place an alarm display (user), the operation switches for the frequently used functions are also placed.

(4) Double-click the alarm list to display the [Alarm Display (User)] dialog.



(5) Set an alarm ID of the display target.



Item	Setting example
Alarm ID	1

In this chapter, we will create a switch to generate pseudo alarms.

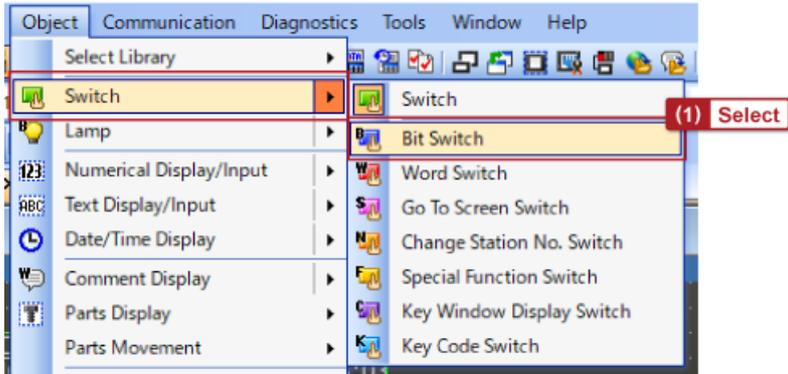
4.1 Placing an alarm generation bit switch

Place an alarm generation bit switch.

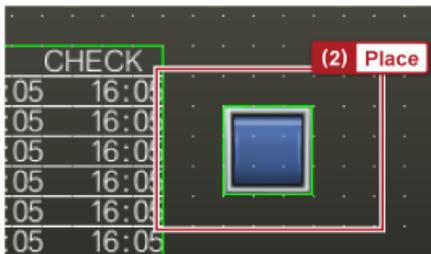
* This operation is exclusive to this training course to generate pseudo alarms.

Create a switch to turn on "M5100", "M5101", or "M5102" set for the monitoring target devices.

(1) Select [Object] → [Switch] → [Bit Switch] from the menu.



(2) Click empty space on the base screen to place the bit switch.



(3) Double-click the switch to open the setting dialog and configure the relevant settings.

Bit Switch

Basic Settings | Advanced Settings

Device | Style | Text | Extended | Trigger

Switch Action

Device: M5100

Action

Momentary Alternate Set Reset

Add

Lamp (Timing to change shape/text)

Key Touch State Bit-ON/OFF Word Range

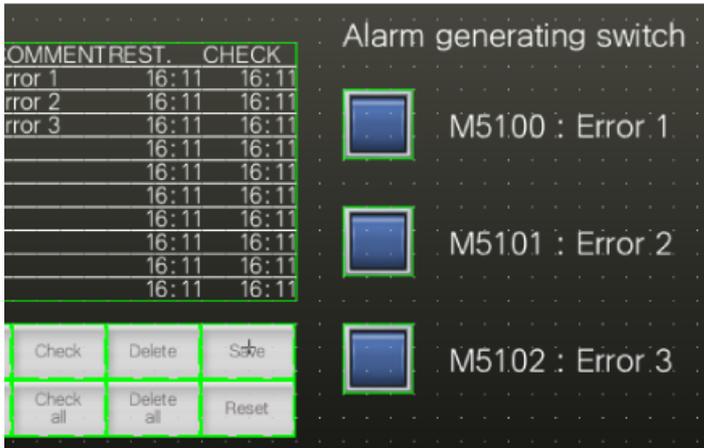
Device: M5100

Item	Setting example
Device	M5100
Action	Alternate
Lamp	Bit-ON/OFF

(4) Create two more switches in the same way as steps (1) to (3) and set "M5101" for [Device] of one switch and set "M5102" for [Device] of the other switch.

Item	Setting example
Device	M5101, M5102
Action	Alternate
Lamp	Bit-ON/OFF

(5) Set a name for each switch as required to identify the switches easily.



In this chapter, we will create a switch to convert an alarm log file to a CSV file and a numerical input to specify an alarm ID.

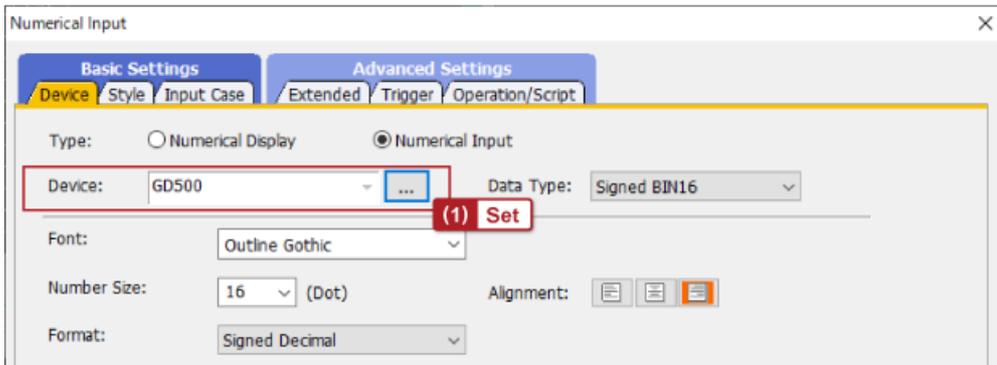
5.1 Creating a numerical input to specify a conversion target alarm ID

5.2 Creating a switch to convert an alarm log file

5.1 Creating a numerical input to specify a conversion target alarm ID

Create a numerical input to specify a conversion target alarm ID for [Alarm ID Device] which is set in the [Alarm Common Setting] dialog in Chapter 2.7.

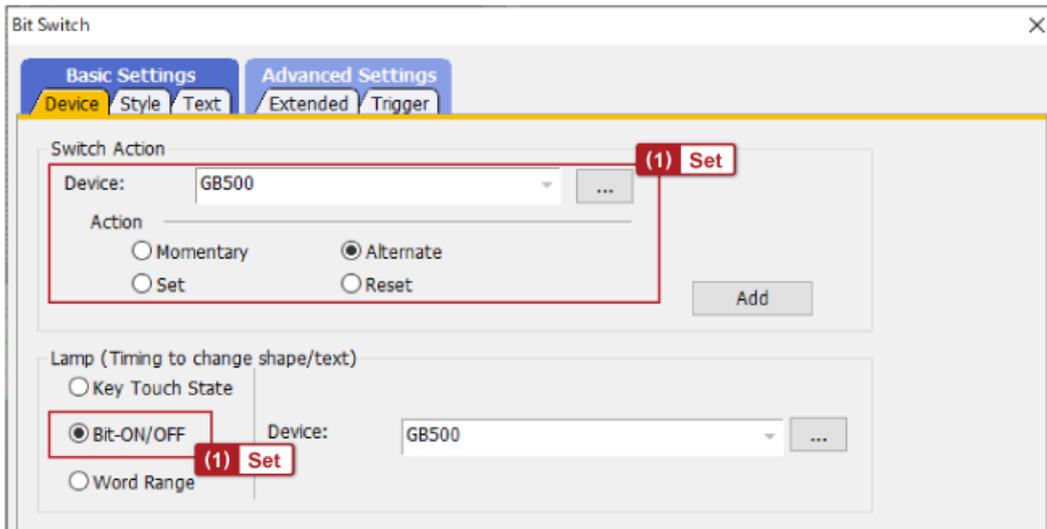
(1) Place a numerical input object on the screen and set the device specified for [Alarm ID Device].



Item	Setting example
Device	GD500

Create a switch to turn on or off [Conversion Trigger Device] which is set in the [Alarm Common Setting] dialog in Chapter 2.7.

(1) Place a bit switch on the screen and set the device specified for [Conversion Trigger Device].



Item	Setting example
Device	GB500
Action	Alternate
Lamp	Bit-ON/OFF

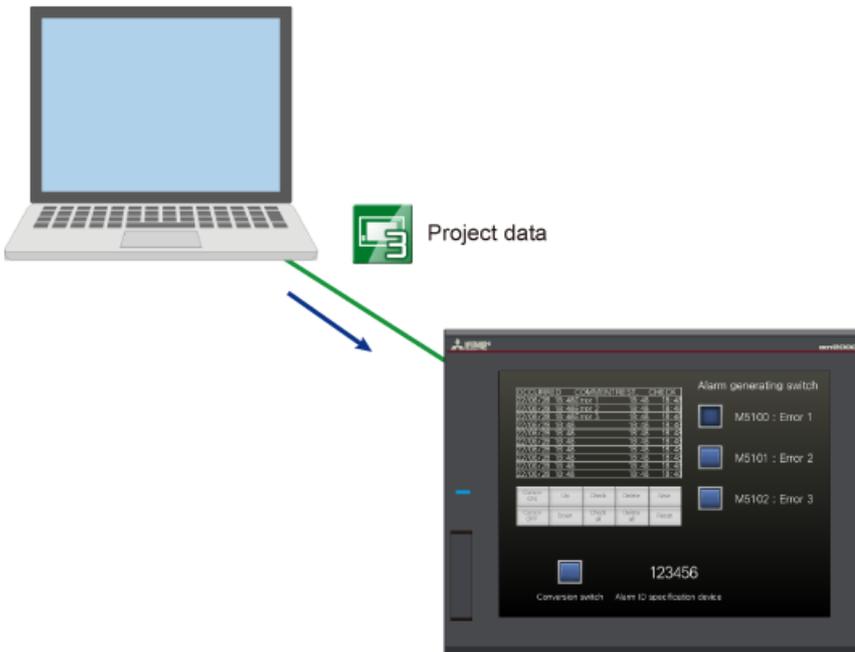
In this chapter, we will transfer the created project data to the GOT, collect alarms, and display the alarms on the GOT.

6.1 Data transfer to the GOT

6.2 Connecting the GOT and the PLC with the Ethernet cable

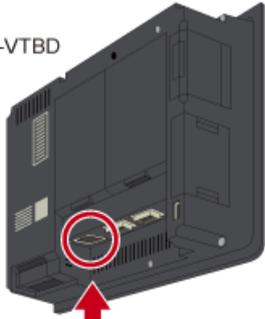
6.3 Starting alarm data collection

Transfer the created GOT project data to the GOT.



Connect the GOT and the PLC with the Ethernet cable.

GOT
GT2710-VTBD



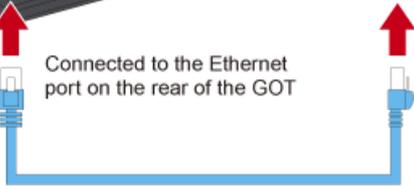
Connected to the Ethernet
port on the rear of the GOT

PLC
MELSEC IQ-R (R04CPU)



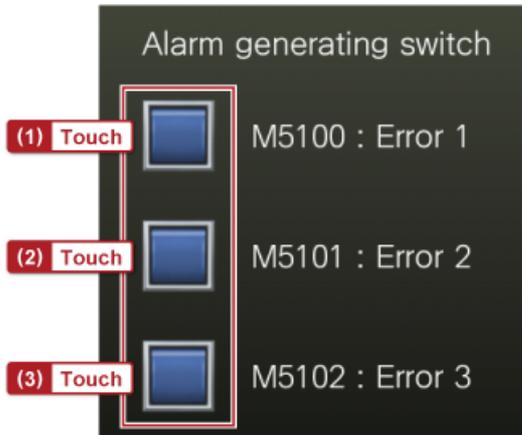
Connected to the Ethernet
port on the front of the PLC

Ethernet cable



Touch the bit switch to generate/collect alarms.

- (1) Touch the alarm generation switch [M5100] to turn it on and touch the switch again to turn it off.
- (2) Touch the alarm generation switch [M5101] to turn it on and touch the switch again to turn it off.
- (3) Touch the alarm generation switch [M5102] to turn it on and touch the switch again to turn it off.
- (4) Repeat steps (1) to (3) to generate some alarms.



(5) The alarms collected in the set monitoring cycle are displayed on the screen.

OCCURRED	COMMENT	REST.	CHECK
22/07/07 13:48	Error 1	13:48	-
22/07/07 13:48	Error 3	13:48	-
22/07/07 13:48	Error 2	13:48	-
22/07/07 13:47	Error 1	13:47	-
22/07/07 13:47	Error 3	13:47	-
22/07/07 13:47	Error 2	13:47	-
22/07/07 13:47	Error 1	13:47	-
22/07/07 13:47	Error 3	13:47	-
22/07/07 13:47	Error 2	13:47	-
22/07/07 13:47	Error 1	13:47	-

Cursor ON	Up	Check	Delete	Save
Cursor OFF	Down	Check all	Delete all	Reset

In this chapter, we will store the collected alarm data, convert the data to a CSV file, and check the data on the personal computer.

7.1 Storing the alarm data

7.2 Checking the stored alarm log file

7.3 Converting the alarm log file to a CSV file

7.4 Checking the alarm data in the CSV file on the personal computer

Store the collected alarm data to an alarm log file.

(1) Touch the [Save] switch to store the collected alarm data.

The screenshot displays an alarm management interface. On the left is a table of alarm events, and on the right is a section for 'Alarm generating switch' with three entries. At the bottom is a control panel with various buttons.

OCCURRED	COMMENT	REST.	CHECK
22/07/07 13:48	Error 1	13:48	-
22/07/07 13:48	Error 3	13:48	-
22/07/07 13:48	Error 2	13:48	-
22/07/07 13:47	Error 1	13:47	-
22/07/07 13:47	Error 3	13:47	-
22/07/07 13:47	Error 2	13:47	-
22/07/07 13:47	Error 1	13:47	-
22/07/07 13:47	Error 3	13:47	-
22/07/07 13:47	Error 2	13:47	-
22/07/07 13:47	Error 1	13:47	-

Alarm generating switch

- M5100 : Error 1
- M5101 : Error 2
- M5102 : Error 3

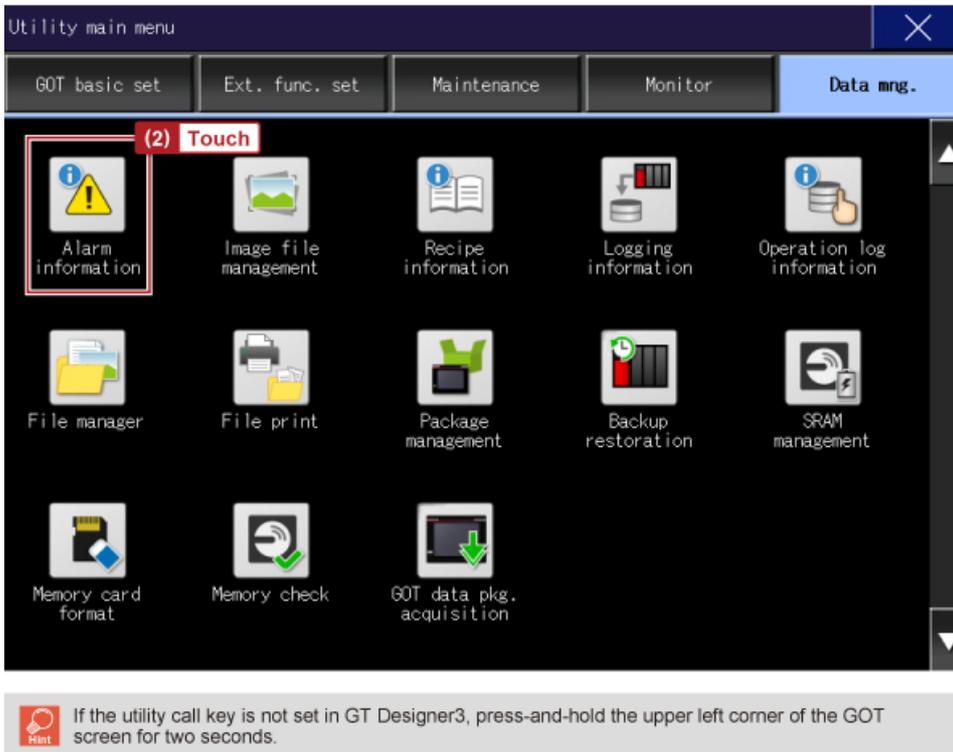
Control Panel:

Cursor ON	Up	Check	Delete	Save
Cursor OFF	Down	Check all	Delete all	Reset

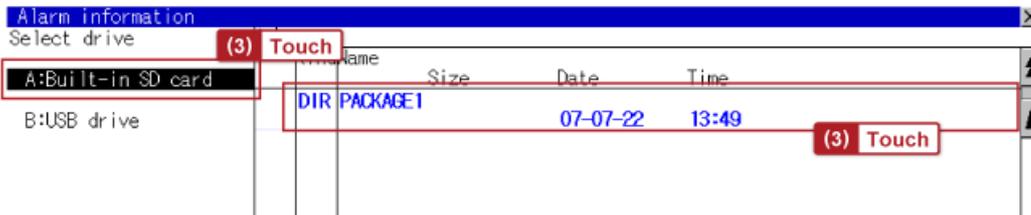
(1) Touch to save

Check the alarm log file stored in the SD card.

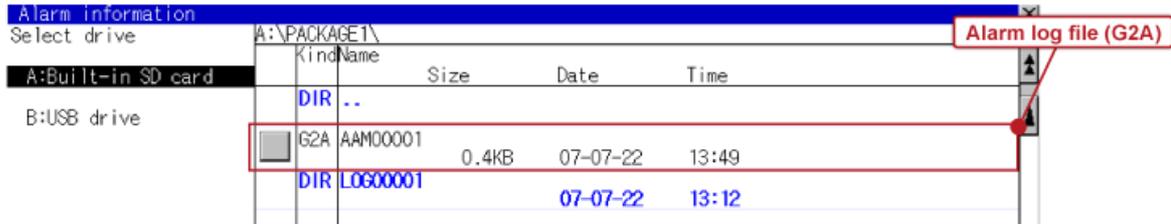
- (1) Touch the utility call key on the GOT to display the utility screen.
- (2) Touch [Data mng.] → [Alarm information].



(3) Touch [A:Built-in SD card] → [PACKAGE1].



(4) Check that the file [AAM00001] has been created.

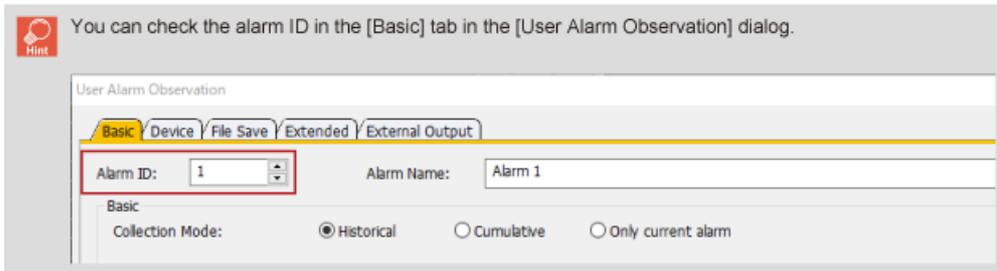


Convert the alarm log file to a CSV file.

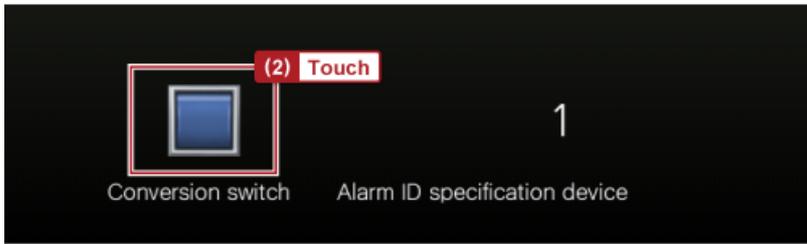
(1) In the numerical input for which [Alarm ID Device] is set, enter the alarm ID of the alarm log file to be converted to a CSV file.



Item	Setting example
Alarm ID	1



(2) Touch the alarm log file conversion switch to convert the alarm log file to a CSV file.

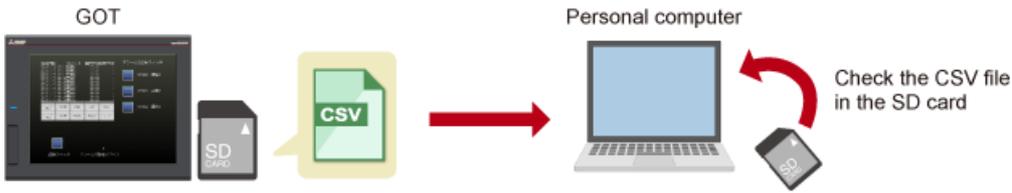


(3) Touch the alarm log file conversion switch again to turn off the switch.

7.4 Checking the alarm data in the CSV file on the personal computer

Check the alarm data outputted to a CSV file on the personal computer.

(1) Remove the SD card from the GOT and set it on the personal computer.



(2) Find the CSV file using Explorer of the personal computer and double-click the file.

(3) The alarm data details are displayed.

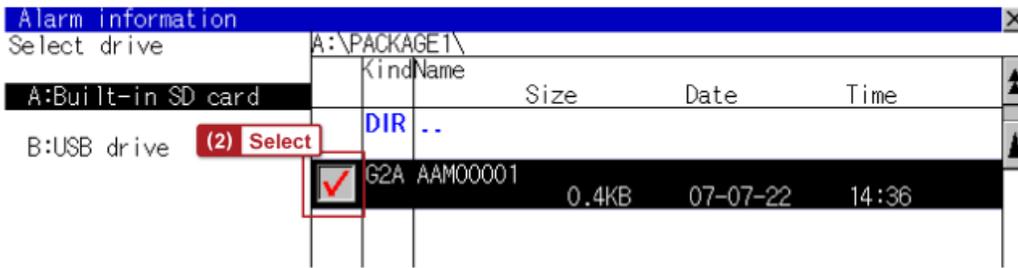
Example: Display of Microsoft® Excel

	A	B	C	D	E	F	G
1	GT2K_ALARM_LOG_HISTORY		0				
2	ALARM_ID		1				
3	ALARM_NAME	Alarm 1					
4	RECORD_NUM		10				
5	COMMENT_GROUP_GENERAL_ID		1				
6	COMMENT_GROUP_MIDDLE_ID		0				
7	COMMENT_GROUP_UPPER_ID		0				
8	COMMENT_GROUP_DETAIL_ID		0				
9	ALARM_HISTORY_NUM		10				
10	NOT_RESUMED_NUM		0				
11	UNCONFIRMED_NUM		10				
12	DATE_ORDER	YYYY/MM/DD hh:mm:ss					
13	LOCAL_TIME						
14	TIME_INF_ORDER						
15	UPPER_NO	MIDDLE_NO	COMMENT_NO	COMMENT	STATUS	OCCURRED	RESTORED
16	0	0	0	1 Error 1	R	2022/7/7 14:35	2022/7/7 14:35
17	0	0	0	2 Error 2	R	2022/7/7 14:35	2022/7/7 14:36
18	0	0	0	3 Error 3	R	2022/7/7 14:36	2022/7/7 14:36
19	0	0	0	1 Error 1	R	2022/7/7 14:36	2022/7/7 14:36
20	0	0	0	2 Error 2	R	2022/7/7 14:36	2022/7/7 14:36
21	0	0	0	3 Error 3	R	2022/7/7 14:36	2022/7/7 14:36
22	0	0	0	1 Error 1	R	2022/7/7 14:36	2022/7/7 14:36
23	0	0	0	2 Error 2	R	2022/7/7 14:36	2022/7/7 14:36
24	0	0	0	3 Error 3	R	2022/7/7 14:36	2022/7/7 14:36
25	0	0	0	1 Error 1	R	2022/7/7 14:36	2022/7/7 14:36

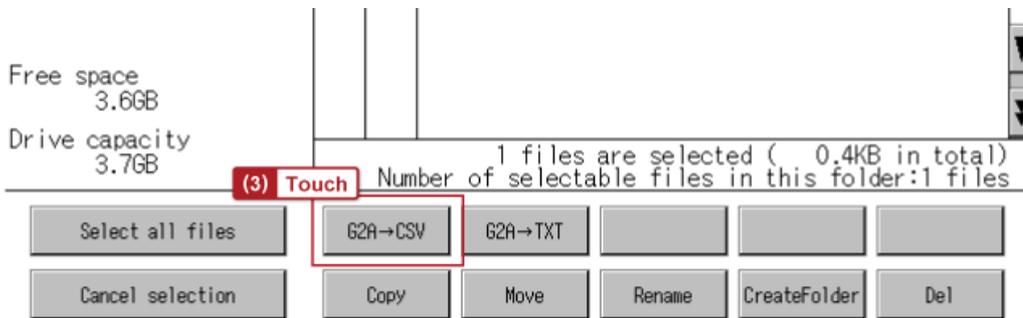
Appendix 1 | Converting an alarm log file to a CSV file (Utility) - 1

The following shows how to convert an alarm log file to a CSV file on the utility screen.

- (1) Display the utility screen. Select [Data mng.] → [Alarm information].
- (2) Select the checkbox on the left of the conversion target alarm log file.



- (3) Touch the [G2A→CSV] button at the bottom of the screen.

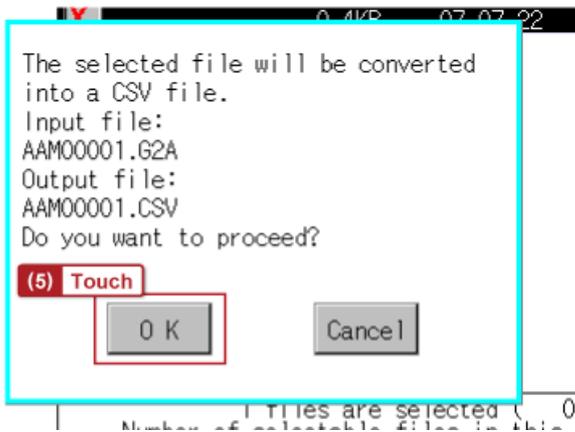


Appendix 1 | Converting an alarm log file to a CSV file (Utility) - 2

(4) Touch the [Exec.] button.



(5) The confirmation screen appears. Touch [OK].



Appendix 1 | Converting an alarm log file to a CSV file (Utility) - 3

(6) A CSV file is created from the alarm log file (G2A).

The screenshot shows a file explorer window titled "Alarm information" with the address bar set to "A:\PACKAGE1\". The left sidebar shows drive selection, with "A:Built-in SD card" selected. The main pane displays a table of files and folders:

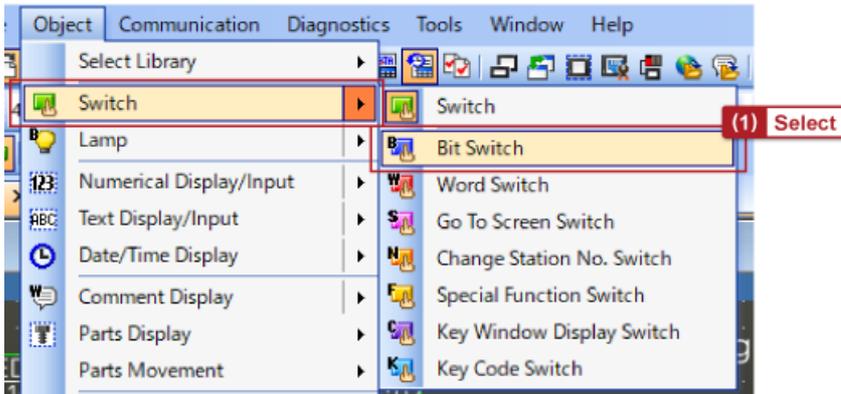
Kind	Name	Size	Date	Time
DIR	..			
<input checked="" type="checkbox"/>	CSV AAM00001	1.1KB	07-07-22	14:44
<input type="checkbox"/>	G2A AAM00001	0.4KB	07-07-22	14:36

Below the table, it states "1 files are selected (1.1KB in total)" and "Number of selectable files in this folder:2 files". At the bottom, there are several buttons: "Select all files", "Cancel selection", "G2A→CSV", "G2A→TXT", "Copy", "Move", "Rename", "CreateFolder", and "Del". A red callout box labeled "CSV file" points to the selected file row.

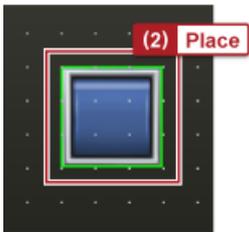
Appendix 2 Creating a switch to store alarms - 1

The following shows how to create a switch to store alarms.

(1) Select [Object] → [Switch] → [Bit Switch] from the menu.

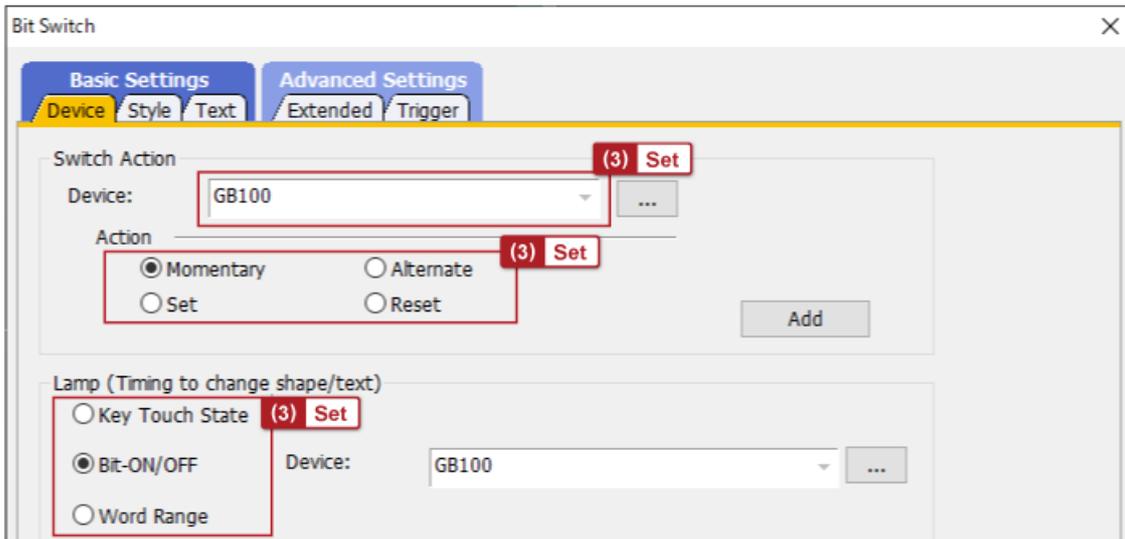


(2) Click empty space on the base screen to place the bit switch.



Appendix 2 Creating a switch to store alarms - 2

(3) Double-click the switch to open the setting dialog and configure the relevant settings. In [Device], enter the device set for the storage trigger in the user alarm observation dialog. (Set GB100 in this training course.)



(4) Provide a text that identifies the switch as required to improve usability.



Now that you have completed all of the lessons of the **Alarm Display (Display and Storage)** course, you are ready to take the final test. If you are unclear on any of the topics covered, please take this opportunity to review those topics.

There are a total of 3 questions (6 items) in this Final Test.

You can take the final test as many times as you like.

Score results

The number of correct answers, the number of questions, the percentage of correct answers, and the pass/fail result will appear on the score page.

		1	2	3	4	5	6	7	8	9	10	
Retry	Final Test 1	✓	✓	✓	✗							Total questions: 28
	Final Test 2	✓	✓	✓	✓							Correct answers: 23
	Final Test 3	✓										Percentage: 82 %
	Final Test 4	✓	✓									
	Final Test 5	✓	✓									
Retry	Final Test 6	✓	✗	✗	✗							
	Final Test 7	✓	✓	✓	✓							
	Final Test 8	✓	✓	✓	✓	✓						
	Final Test 9	✓	✓	✓	✓							
Retry	Final Test 10	✗										

To pass the test, **60%** of correct answers is required.

Complete the following sentences.

In this course, we learned the settings to collect and store generated alarms using the [Q1] observation function. In the [Q1] observation, you can set the monitoring target devices and [Q2] to be displayed at alarm occurrence.

Q1

User alarm



Q2

Comment



Select all correct answers from the options.

Select the file format that allows conversion from an alarm log file.

Q1

Unicode text file

CSV file

DOC file

PDF file

Complete the following sentence.

Alarm data collection modes include [Q1] (adding each user alarm to the history at occurrence), [Q2] (collecting the latest user alarm status and the alarm counts and time together for each user alarm), and [Q3] (collecting currently occurring user alarms only).

Q1

Historical



Q2

Cumulative



Q3

Only current alarm



You have completed the Final Test. Your results are as follows.
To end the Final Test, proceed to the next page

	1	2	3	4	5	6	7	8	9	10
Final Test 1	✓	✓								
Final Test 2	✓									
Final Test 3	✓	✓	✓							

Total questions: **6**

Correct answers: **6**

Percentage: **100 %**

Clear

You have completed the **Alarm Display (Display and Storage) course.**

Thank you for taking this course.

We hope you enjoyed the lessons and the information you acquired in this course will be useful in the future.

You can review the course as many times as you want.

Review

Close