# Mitsubishi Simple Motion Module
# MELSEC-Q Series
# QD77GF16

## Sample Screen Manual

Mitsubishi Electric Corporation

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## REVISIONS

**Sample Screen Manual**

| Date | Control No.* | Description |
|---|---|---|
| 2014/1 | BCN-P5999-0179 | First edition |
| 2015/2 | BCN-P5999-0179-2 | Device Specification for Document ID |
| 2015/6 | BCN-P5999-0179-2a | Project data improved |
| | | |
| | | |
| | | |
| | | |

\* The Control No. is noted at the lower right of each page.

**Project data**

| Date | Project data | GT Designer3* | Description |
|---|---|---|---|
| 2014/1 | MITSUBISHI_QD77GF16_V_Ver1_E.GTX | 1.105K | First edition |
| 2015/2 | MITSUBISHI_QD77GF16_V_Ver2_E.GTX | 1.126G | Device Specification for Document ID |
| 2015/6 | MITSUBISHI_QD77GF16_V_Ver2a_E.GTX | 1.128J | Incorrect description on the screen has been revised. |
| | | | |
| | | | |
| | | | |

\* The version number of screen design software used to create the project data is listed. Please use the screen design software with the listed version or later.

## 1. OUTLINE

This manual explains the sample screens of GOT2000 connected to a MELSEC-Q Series PLC (Q06UDEHCPU) via Ethernet. The sample screens can be used for monitoring the status of each axis and the buffer memory (including current values and alarms) of Simple Motion Module (QD77GF16).

## 2. SYSTEM CONFIGURATION

```
GOT2000
• GT27**-V (640 X 480)
• Interface:
    Standard I/F (Ethernet)
• SD card *1
• Battery (GT11-50BAT) *2
```
Ethernet cable *3
```
• Q06UDEHCPU
• QD77GF16
```
```
Servo Amplifier
```
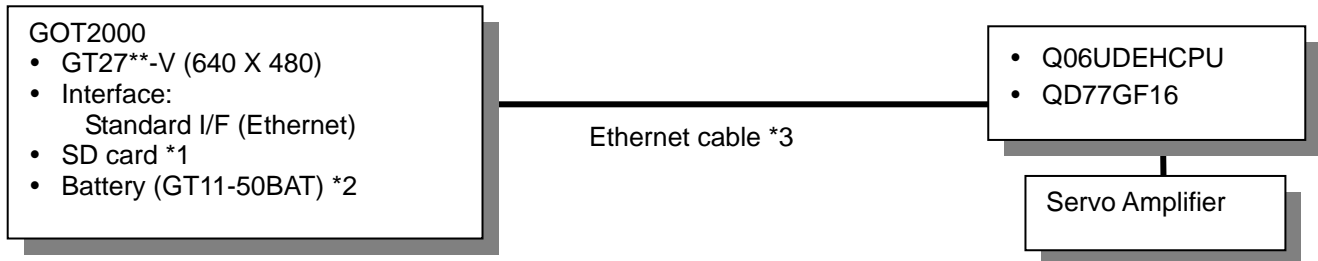
*1: The SD card is used for the document display function.
*2: The battery is used for the backup of the clock data. (The battery is provided with the GOT as standard.)
*3: For more details about the cable, please refer to the "GOT2000 Series Connection Manual (Mitsubishi Products)".

## 3. GOT

### 3.1 System Applications That Are Automatically Selected

| Type | System application name | |
|---|---|---|
| Standard Function | Standard System Application | |
| | Standard Font | Japanese |
| Communication Driver | Ethernet Connection | Ethernet (MELSEC), Q17nNC, CRnD-700, Gateway |
| Extended Function | Standard Font | Chinese (Simplified) |
| | Outline Font | Gothic | Alphanumeric/Kana |
| | | | Japanese (Kanji) |
| | | | Chinese (Simplified) |
| | Document Display | |

### 3.2 Controller Setting of Screen Design Software

**Detail Setting**

| Item | Set value | Remarks |
|---|---|---|
| GOT NET No. | 1 | |
| GOT Station No. | 2 | |
| GOT Ethernet Setting | Refer to table below | |
| GOT Communication Port No. | 5001 | |
| Retry (Times) | 3 | |
| Startup Time (Sec) | 3 | |
| Timeout Time (Sec) | 3 | |
| Delay Time (ms) | 0 | |

**GOT Ethernet Setting**

| Item | Set value | Remarks |
|---|---|---|
| Reflect GOT Ethernet setting in the GOT | Checked | |
| GOT IP Address | 192.168.3.18 | |
| Subnet Mask | 255.255.255.0 | |
| Default Gateway | 0.0.0.0 | |
| Peripheral S/W Communication Port No. | 5015 | |
| Transparent Port No. | 5014 | |

## 3.3 Ethernet Setting of Screen Design Software

| | Host | Net No. | Station | Unit Type | IP Address | Port No. | Communication |
|---|------|---------|---------|-----------|------------|----------|---------------|
| 1 | * | 1 | 1 | QnUD(P)V/QnUDEH | 192.168.3.39 | 5006 | UDP |

## 3.4 Overlap Window Setting of Screen Design Software

[Close the window when switching base screens] of [Detail Setting] for overlap window in [Screen Switching/Window] is enabled to close the window when switching base screens.

## 4. SIMPLE MOTION MODULE

### 4.1 Start I/O Number of Module

The module's start I/O number is set to 0H. For more details about changing the start I/O number, please refer to "7.1 Changing Start I/O Number".
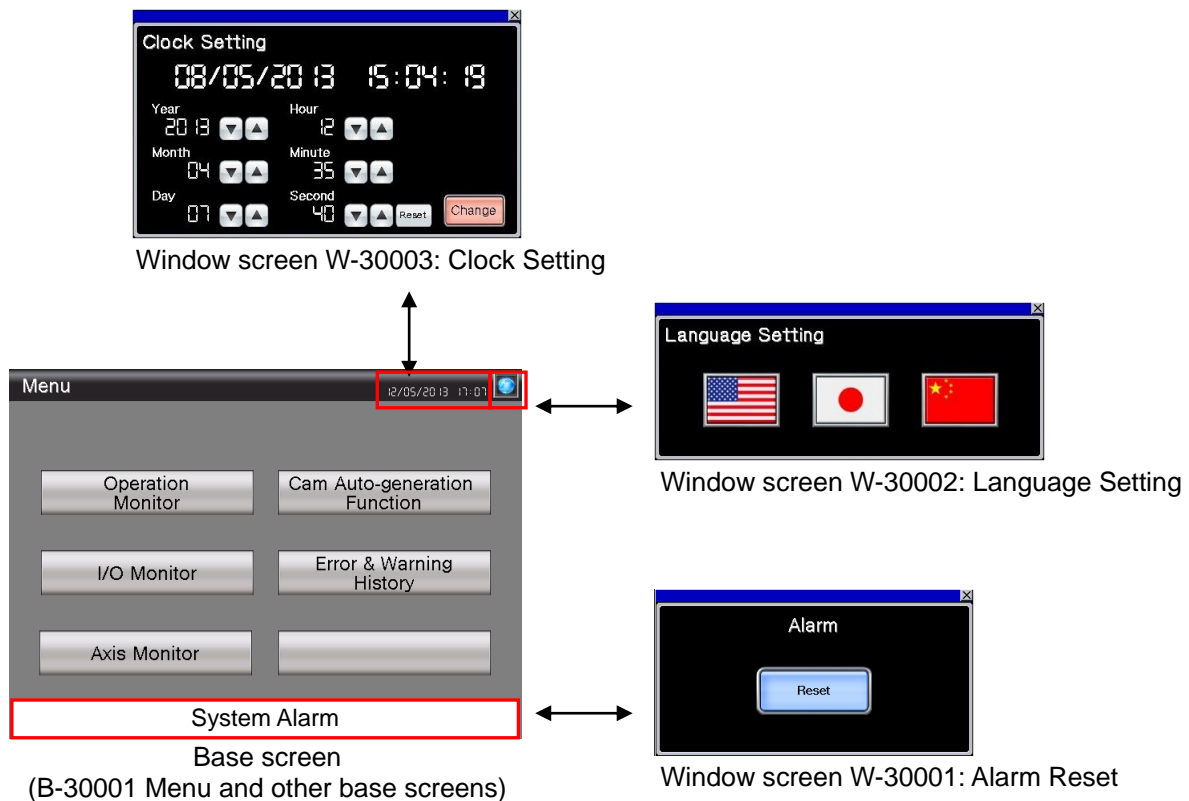
## 5. SCREEN SPECIFICATIONS

### 5.1 Display Language

The language of the text displayed on the screen can be switched between Japanese, English, and Chinese (Simplified). The text strings in each language are registered in the columns No. 1 to No. 3 in the comment group No. 500 as shown below. When the column No. is set in the language switching device, the language corresponding to the column No. will appear.
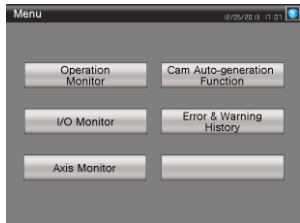
| Column No. | Language |
|------------|----------|
| 1 | English |
| 2 | Japanese |
| 3 | Chinese (Simplified) |

### 5.2 Screen List/Transition

#### 5.2.1 Screen List/Transition (common)



Window screen W-30003: Clock Setting



Window screen W-30002: Language Setting



Base screen
(B-30001 Menu and other base screens)



Window screen W-30001: Alarm Reset
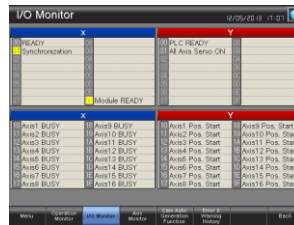
**5.2.2 Screen List/Transition (individual)**
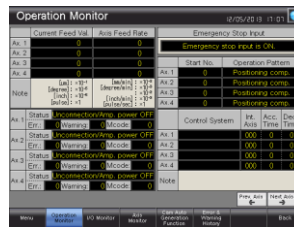


Base screen B-30002: Operation Monitor



Base screen B-30003: I/O Monitor



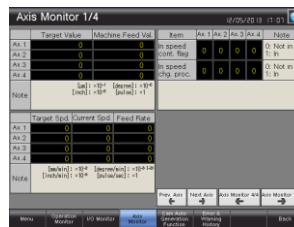Base screen B-30004: Axis Monitor 1/4
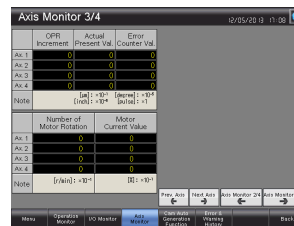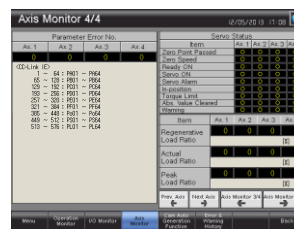


Base screen B-30001: Menu
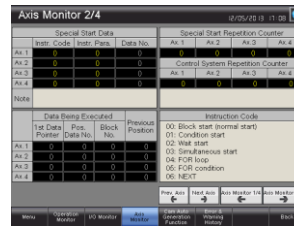


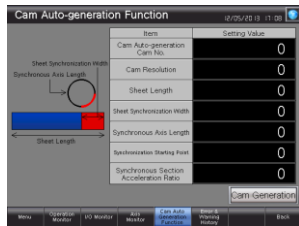Base screen B-30005: Axis Monitor 2/4



Base screen B-30006: Axis Monitor 3/4

To next page



Base screen B-30007: Axis Monitor 4/4

From previous page



Base screen
B-30008: Cam Auto-generation Function
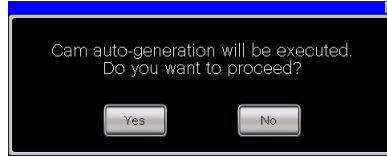


Window screen
W-30010: Cam Auto-generation Check Screen
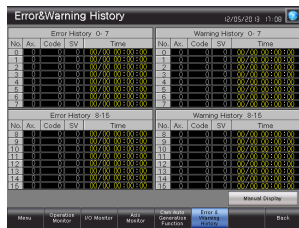


Base screen
B-30010: Error & Warning History
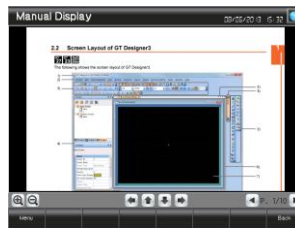


Base screen B-30500:Manual Display

## 5.3 Explanation of Screens
### 5.3.1 Menu (B-30001)
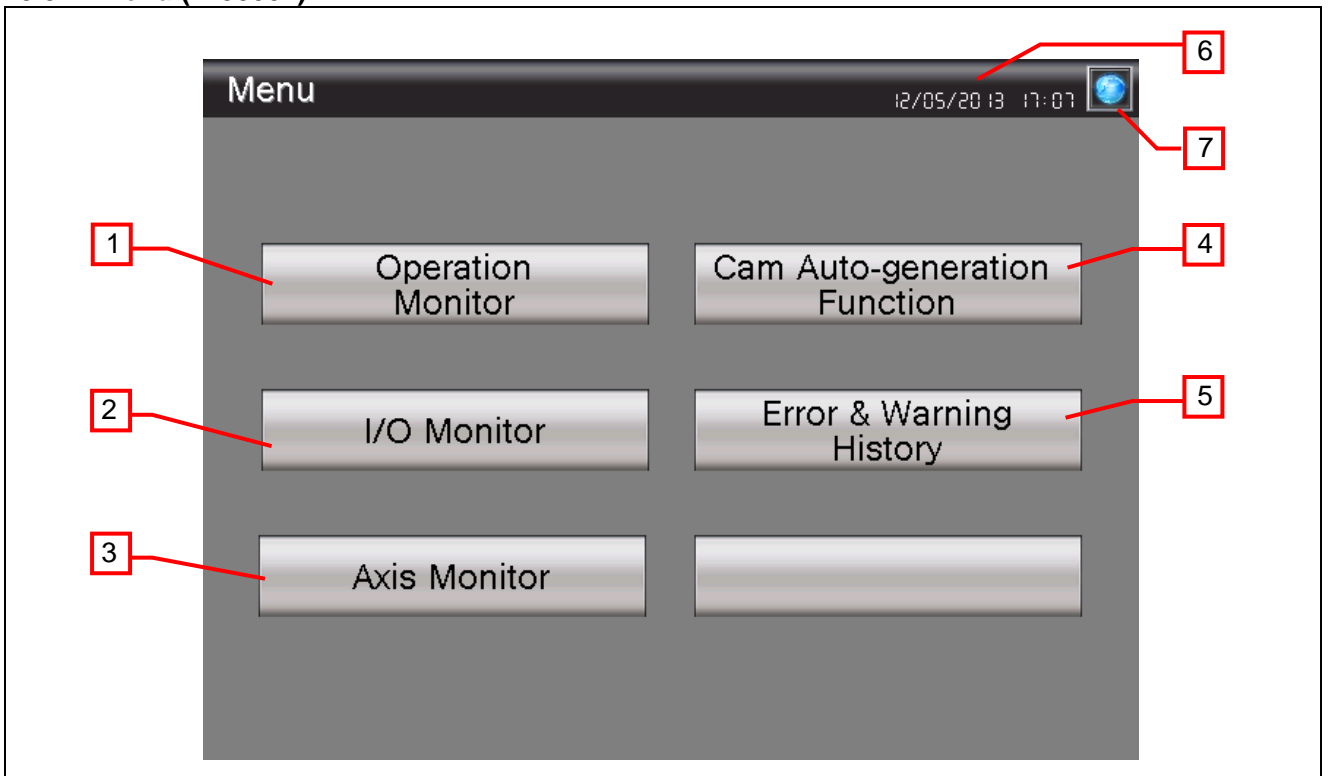


**Outline**

This is the Menu screen.

**Description**

1.    Switches to the [Operation Monitor] screen.
2.    Switches to the [I/O Monitor] screen.
3.    Switches to the [Axis Monitor] screen (1/4).
4.    Switches to the [Cam Auto-generation Function] screen.
5.    Switches to the [Error & Warning History] screen.
6.    Displays the current date and time. Touch the area to open the [Clock Setting] window.
7.    Opens the [Language Setting] window.

**Remarks**

• If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower.   When touching the other part of the message, the [Alarm Reset] window appears.

### 5.3.2 Operation Monitor (B-30002)



**Outline**

This is the QD77GF16 operation monitor screen.

**Description**

1. Displays the following about axis 1 to axis 16.
   - Current Feed Val., Axis Feed Rate
   - Status, Err., Warning, Mcode
   - Emergency Stop Input
   - Start No., Operation Pattern
   - Control System, Int. Axis, Acc. Time, Dec. Time
2. Switches axes to monitor.
3. Switches to each screen. The blue switch indicates the currently displayed screen, thus selecting this switch will not switch the screen.
4. Shows unused switches for base screen switching.
5. Switches to the previously opened screen.
6. Displays the current date and time. Touch the area to open the [Clock Setting] window.
7. Opens the [Language Setting] window.

**Remarks**

- If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower. When touching the other part of the message, the [Alarm Reset] window appears.

**5.3.3 I/O Monitor (B-30003)**
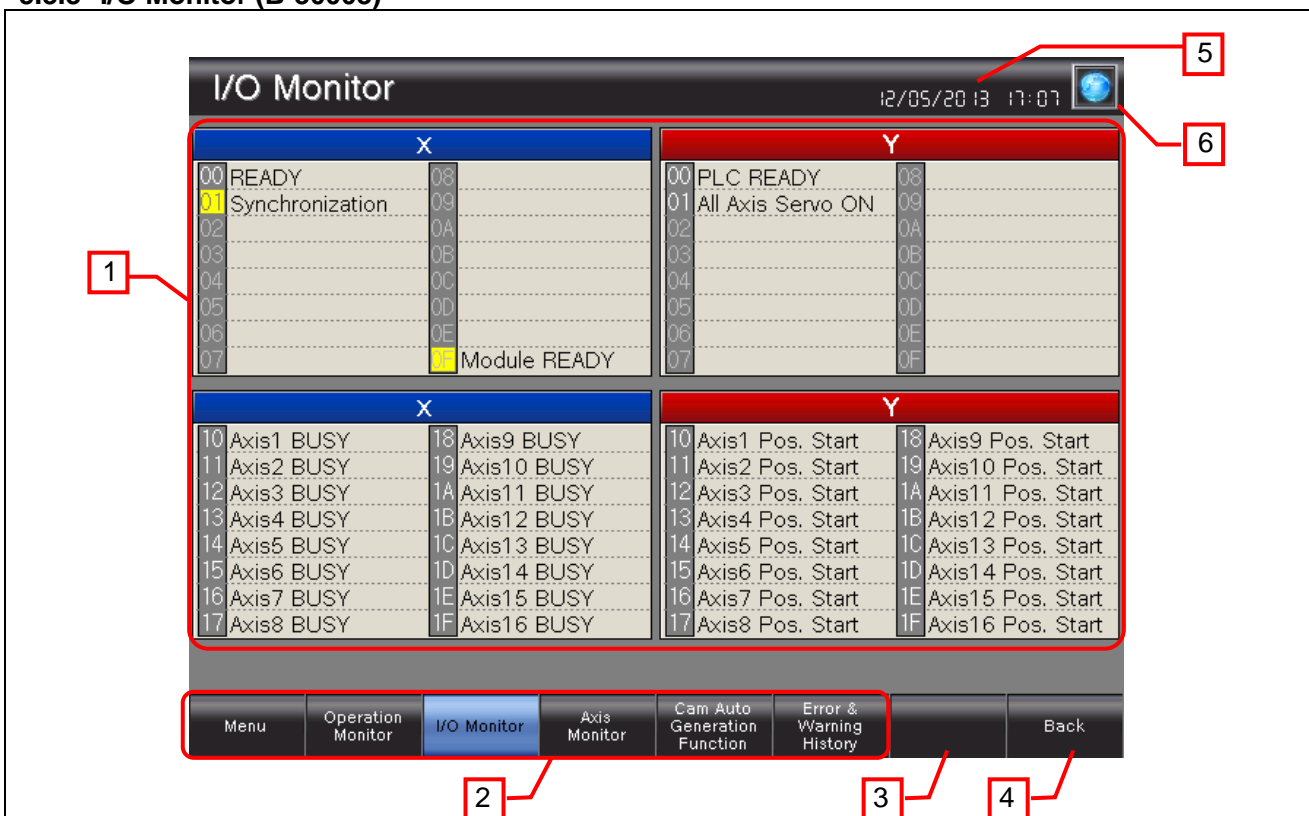


**Outline**

This is the QD77GF16 I/O monitor screen.

**Description**

1. Displays the input/output status.
2. Switches to each screen. The blue switch indicates the currently displayed screen, thus selecting this switch will not switch the screen.
3. Shows unused switches for base screen switching.
4. Switches to the previously opened screen.
5. Displays the current date and time. Touch the area to open the [Clock Setting] window.
6. Opens the [Language Setting] window.

**Remarks**

- If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower. When touching the other part of the message, the [Alarm Reset] window appears.

### 5.3.4 Axis Monitor 1/4 (B-30004)

**Axis Monitor 1/4**   12/05/2013  17:07

| | Target Value | Machine Feed Val. | Item | Ax.1 | Ax.2 | Ax.3 | Ax.4 | Note |
|---|---|---|---|---|---|---|---|---|
| Ax.1 | 0 | 0 | In speed cont. flag | 0 | 0 | 0 | 0 | 0: Not in 1: In |
| Ax.2 | 0 | 0 | | | | | | |
| Ax.3 | 0 | 0 | In speed chg. proc. | 0 | 0 | 0 | 0 | 0: Not in 1: In |
| Ax.4 | 0 | 0 | | | | | | |
| Note | [μm]: ×10⁻¹  [degree]: ×10⁻⁵  [inch]: ×10⁻⁵  [pulse]: ×1 | | | | | | | |

| | Target Spd. | Current Spd. | Feed Rate |
|---|---|---|---|
| Ax.1 | 0 | 0 | 0 |
| Ax.2 | 0 | 0 | 0 |
| Ax.3 | 0 | 0 | 0 |
| Ax.4 | 0 | 0 | 0 |
| Note | [mm/min]: ×10⁻²  [degree/min]: ×10⁻³ ⁽⁻²⁾  [inch/min]: ×10⁻³  [pulse/sec]: ×1 | | |

Prev. Axis ←   Next Axis →   Axis Monitor 4/4 ←   Axis Monitor 2/4 →

Menu | Operation Monitor | I/O Monitor | Axis Monitor | Cam Auto Generation Function | Error & Warning History | | Back

**Outline**

This is the QD77GF16 axis monitor screen (1/4).

**Description**

1. Displays the following about axis 1 to axis 16.
   - Target Value, Machine Feed Val.
   - Target Spd., Current Spd., Feed Rate
   - In speed cont. flag, In speed chg. proc.
2. Switches axes and axis monitor screens.
3. Switches to each screen. The blue switch indicates the currently displayed screen, thus selecting this switch will not switch the screen.
4. Shows unused switches for base screen switching.
5. Switches to the previously opened screen.
6. Displays the current date and time. Touch the area to open the [Clock Setting] window.
7. Opens the [Language Setting] window.

**Remarks**

- If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower. When touching the other part of the message, the [Alarm Reset] window appears.

### 5.3.5  Axis Monitor 2/4 (B-30005)



**Outline**
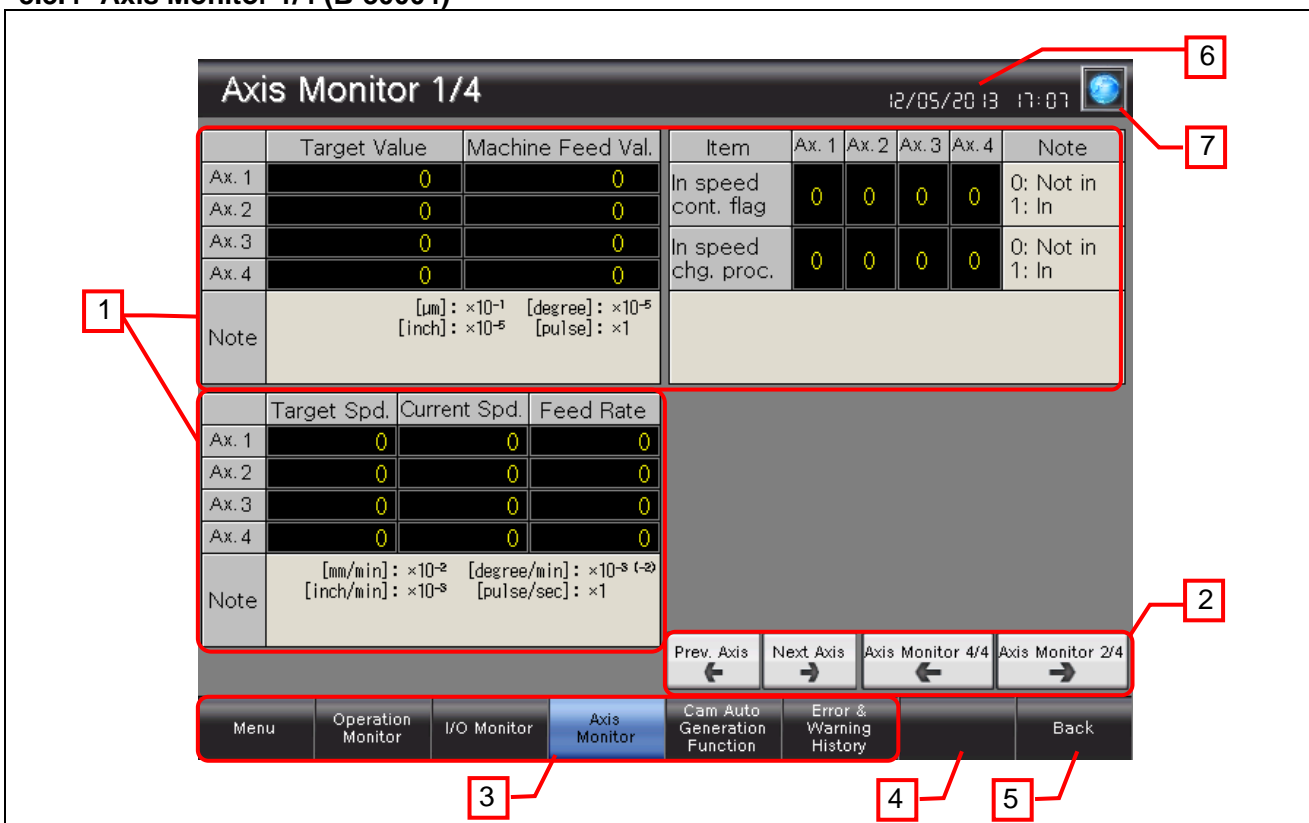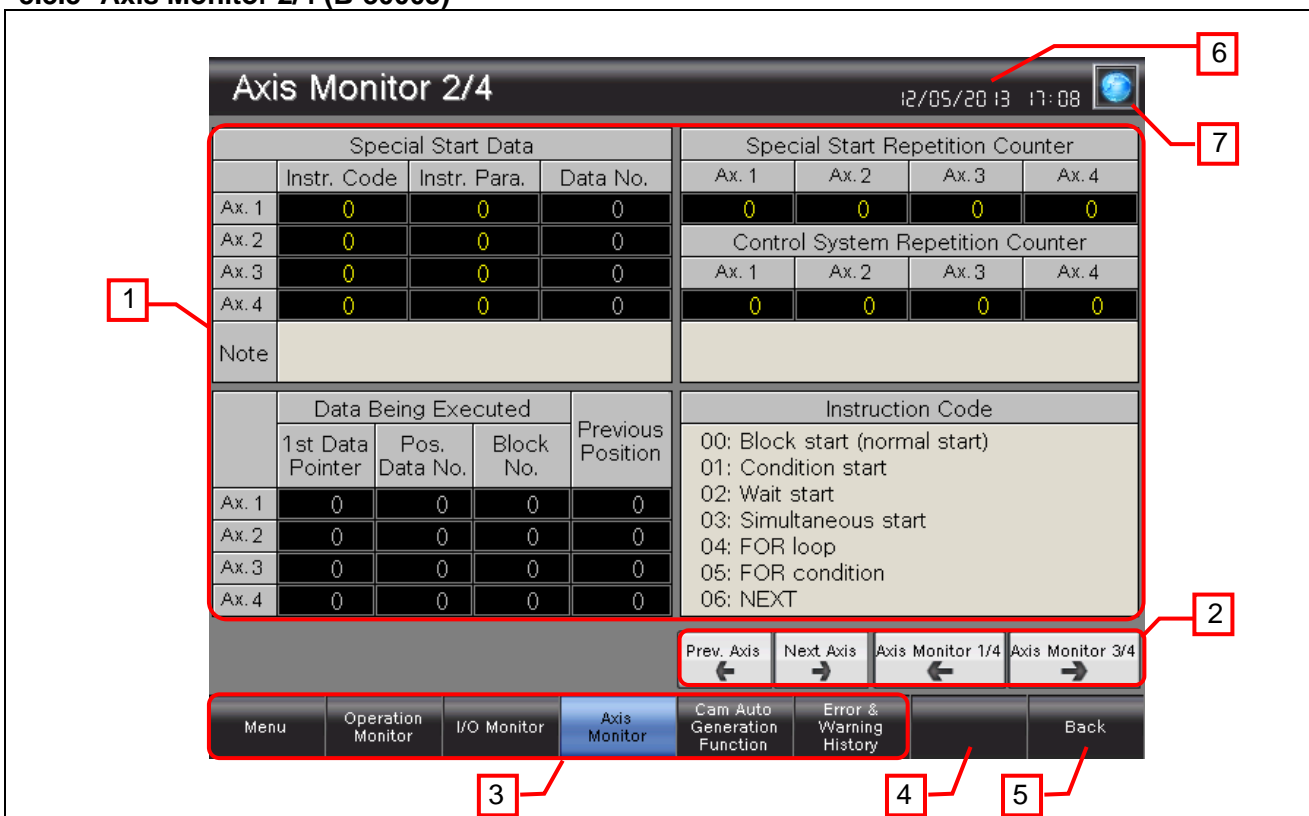
This is the QD77GF16 axis monitor screen (2/4).

**Description**

1. Displays the following about axis 1 to axis 16.
   - Special Start Data (Instr. Code, Instr. Para., Data No.)
   - Data Being Executed (1st Data Pointer, Pos. Data No., Block No.), Previous Position
   - Special Start Repetition Counter, Control System Repetition Counter
2. Switches axes and axis monitor screens.
3. Switches to each screen. The blue switch indicates the currently displayed screen, thus selecting this switch will not switch the screen.
4. Shows unused switches for base screen switching.
5. Switches to the previously opened screen.
6. Displays the current date and time. Touch the area to open the [Clock Setting] window.
7. Opens the [Language Setting] window.

**Remarks**

- If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower. When touching the other part of the message, the [Alarm Reset] window appears.

### 5.3.6 Axis Monitor 3/4 (B-30006)

| | OPR Increment | Actual Present Val. | Error Counter Val. |
|---|---|---|---|
| Ax. 1 | 0 | 0 | 0 |
| Ax. 2 | 0 | 0 | 0 |
| Ax. 3 | 0 | 0 | 0 |
| Ax. 4 | 0 | 0 | 0 |
| Note | [μm]: ×10⁻¹  [inch]: ×10⁻⁵ | [degree]: ×10⁻⁵  [pulse]: ×1 | |

| | Number of Motor Rotation | Motor Current Value |
|---|---|---|
| Ax. 1 | 0 | 0 |
| Ax. 2 | 0 | 0 |
| Ax. 3 | 0 | 0 |
| Ax. 4 | 0 | 0 |
| Note | [r/min]: ×10⁻¹ | [%]: ×10⁻¹ |

Prev. Axis ← | Next Axis → | Axis Monitor 2/4 ← | Axis Monitor 4/4 →

Menu | Operation Monitor | I/O Monitor | Axis Monitor | Cam Auto Generation Function | Error & Warning History | | Back

## Outline

This is the QD77GF16 axis monitor screen (3/4).

## Description

1. Displays the following about axis 1 to axis 16.
   - OPR Increment, Actual Present Val., Error Counter Val.
   - Number of Motor Rotation, Motor Current Value
   - Servo Amplifier S/W No.
2. Switches axes and axis monitor screens.
3. Switches to each screen. The blue switch indicates the currently displayed screen, thus selecting this switch will not switch the screen.
4. Shows unused switches for base screen switching.
5. Switches to the previously opened screen.
6. Displays the current date and time. Touch the area to open the [Clock Setting] window.
7. Opens the [Language Setting] window.

## Remarks

- If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower. When touching the other part of the message, the [Alarm Reset] window appears.

### 5.3.7 Axis Monitor 4/4 (B-30007)
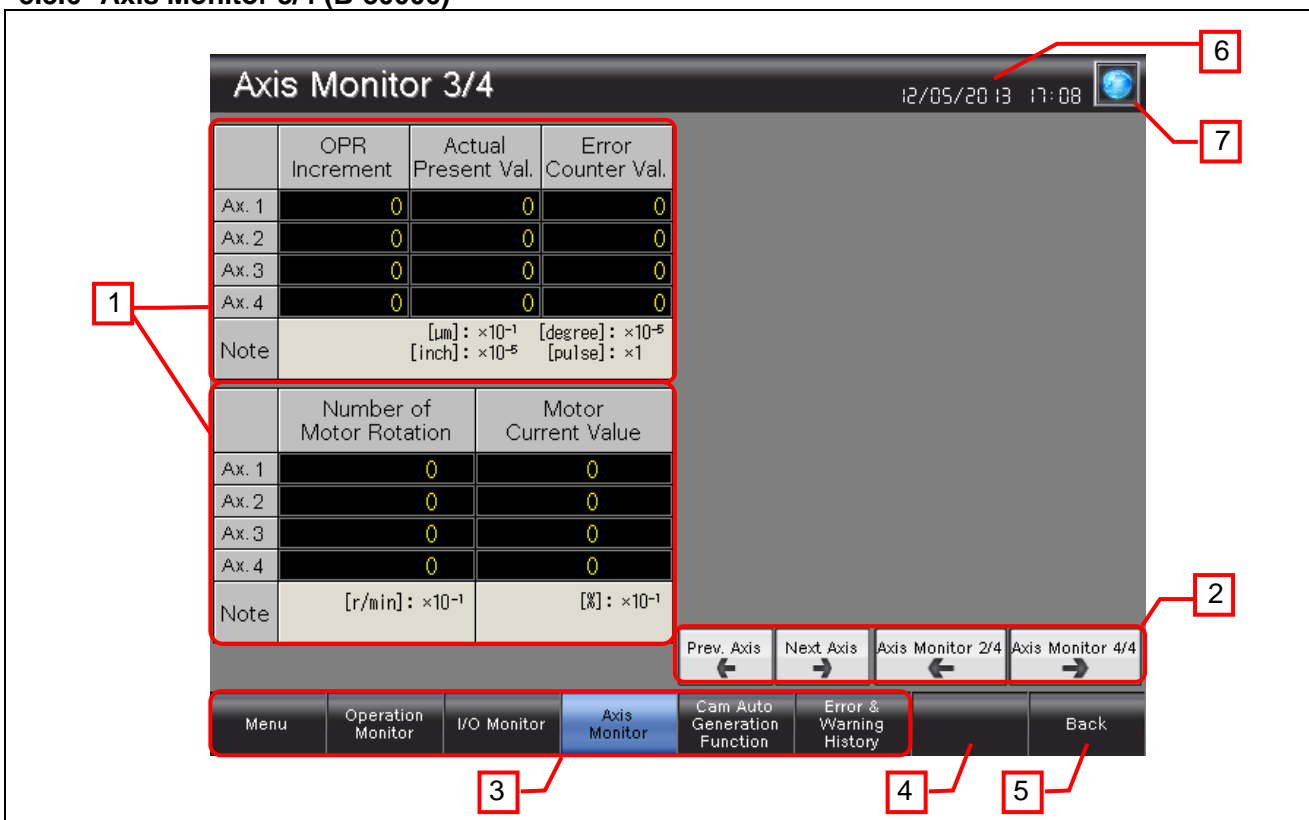


#### Outline
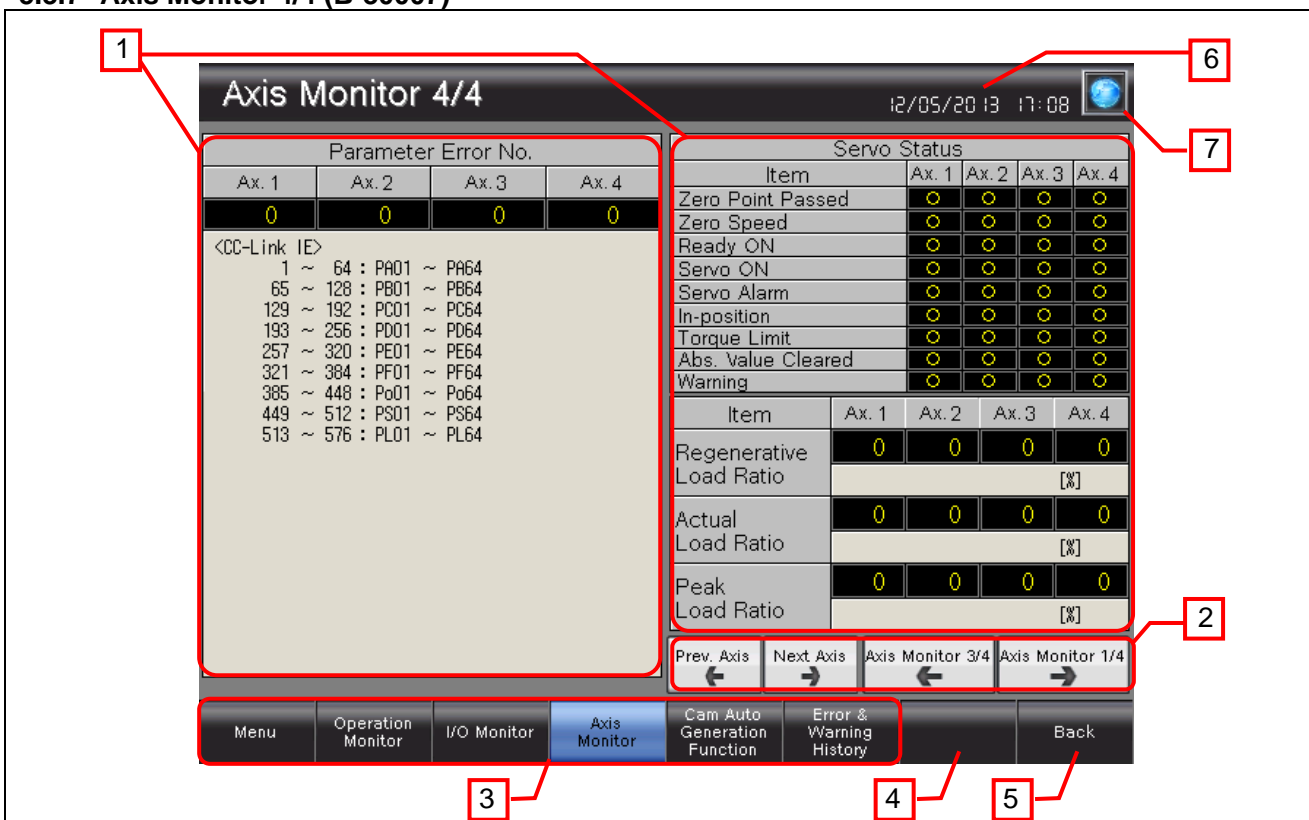
This is the QD77GF16 axis monitor screen (4/4).

#### Description

1. Displays the following about axis 1 to axis 16.
   - Parameter Error No.
   - Servo Status
   - Regenerative Load Ratio, Actual Load Ratio, Peak Load Ratio
2. Switches axes and axis monitor screens.
3. Switches to each screen. The blue switch indicates the currently displayed screen, thus selecting this switch will not switch the screen.
4. Shows unused switches for base screen switching.
5. Switches to the previously opened screen.
6. Displays the current date and time. Touch the area to open the [Clock Setting] window.
7. Opens the [Language Setting] window.

#### Remarks

- If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower. When touching the other part of the message, the [Alarm Reset] window appears.

### 5.3.8 Cam Auto-generation Function (B-30008)
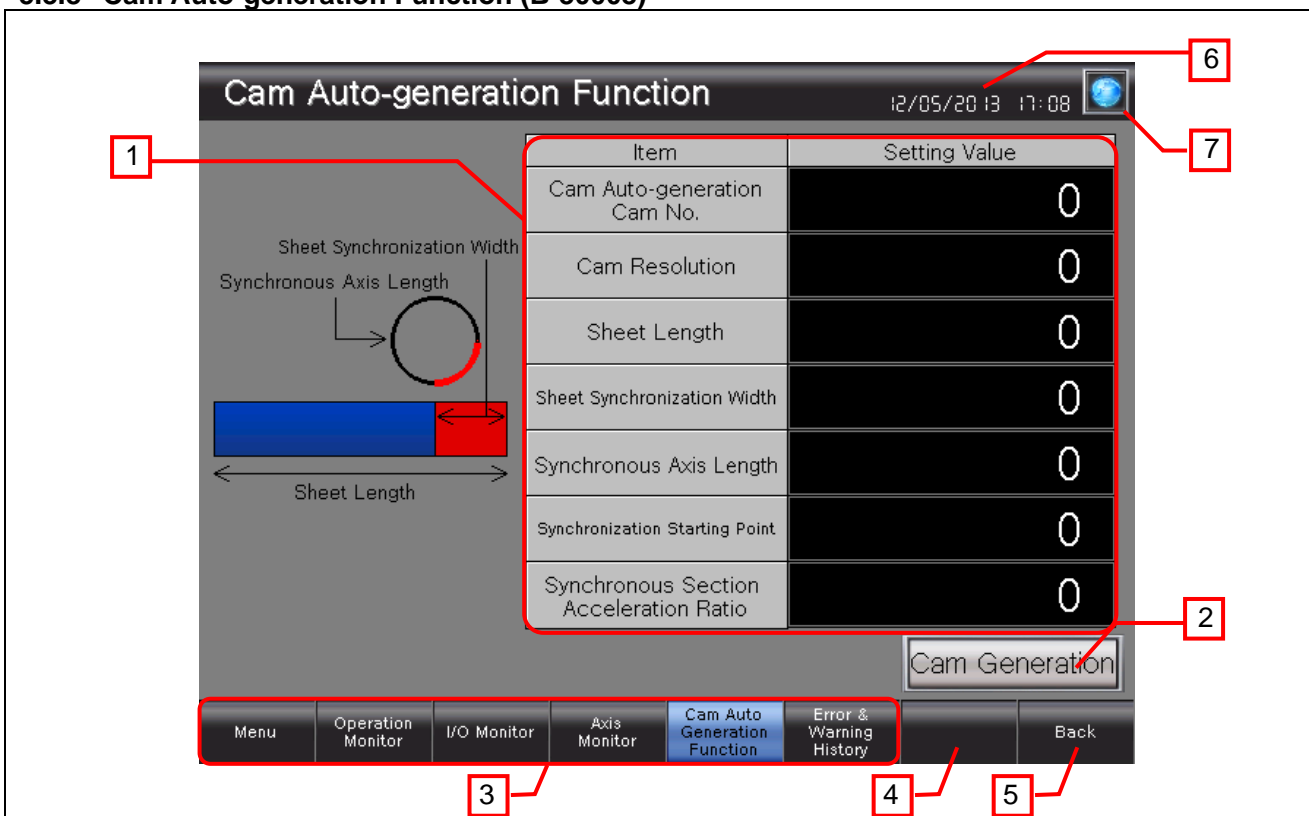


#### Outline

This is the QD77GF16 cam auto-generation screen.

#### Description

1. Sets parameters that are required for cam auto-generation.
2. Executes cam generation.
3. Switches to each screen. The blue switch indicates the currently displayed screen, thus selecting this switch will not switch the screen.
4. Shows unused switches for base screen switching.
5. Switches to the previously opened screen.
6. Displays the current date and time. Touch the area to open the [Clock Setting] window.
7. Opens the [Language Setting] window.

#### Remarks

- If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower. When touching the other part of the message, the [Alarm Reset] window appears.
- When GOT is started, the cam auto-generation type device is set to 1 with the project script. For more details about scripts, please refer to "5.6 Script List".

### 5.3.9 Error & Warning History (B-30010)
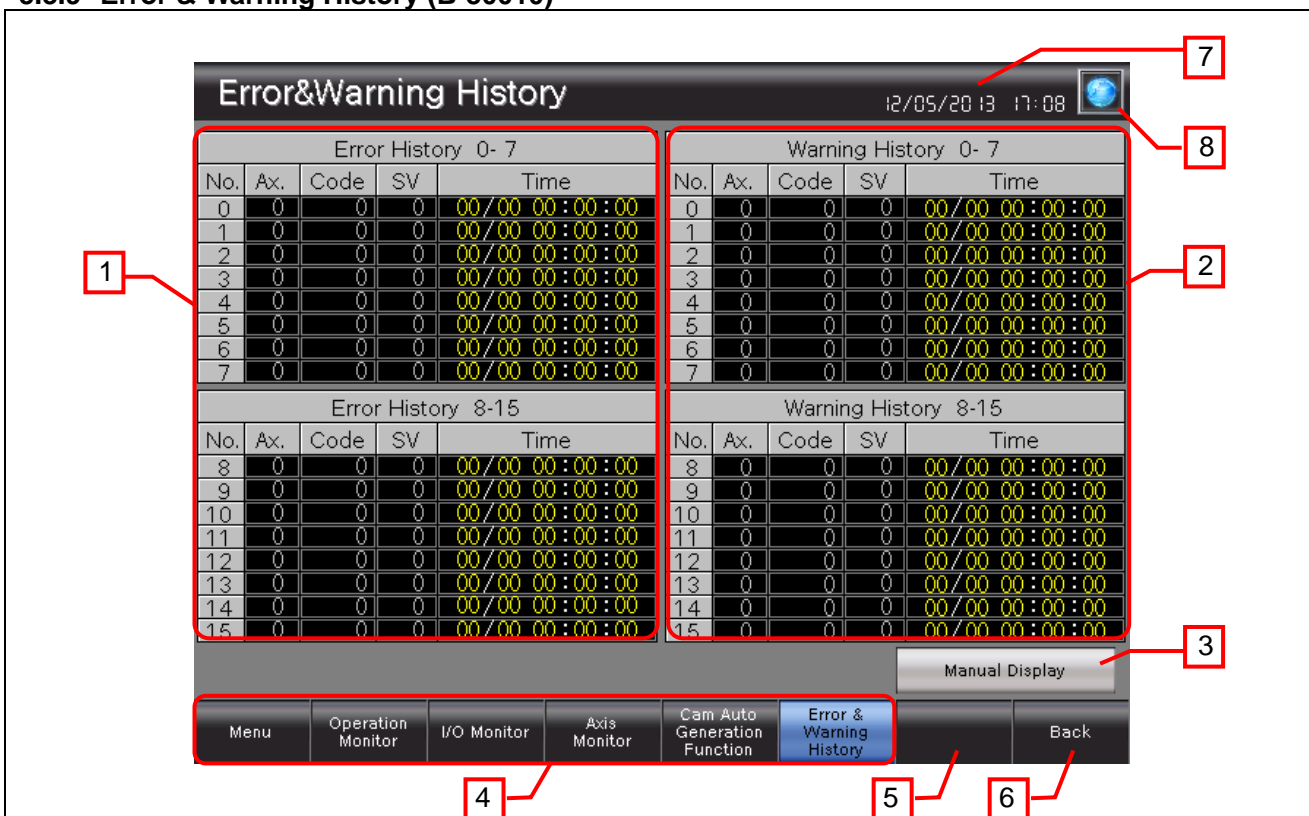


#### Outline

This is the QD77GF16 error & warning history screen.

#### Description

1. Displays the error history.
2. Displays the warning history.
3. Switches to the [Manual Display] screen.
4. Switches to each screen. The blue switch indicates the currently displayed screen, thus selecting this switch will not switch the screen.
5. Shows unused switches for base screen switching.
6. Switches to the previously opened screen.
7. Displays the current date and time. Touch the area to open the [Clock Setting] window.
8. Opens the [Language Setting] window.

#### Remarks

- If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower. When touching the other part of the message, the [Alarm Reset] window appears.

### 5.3.10 Manual Display (B-30500)
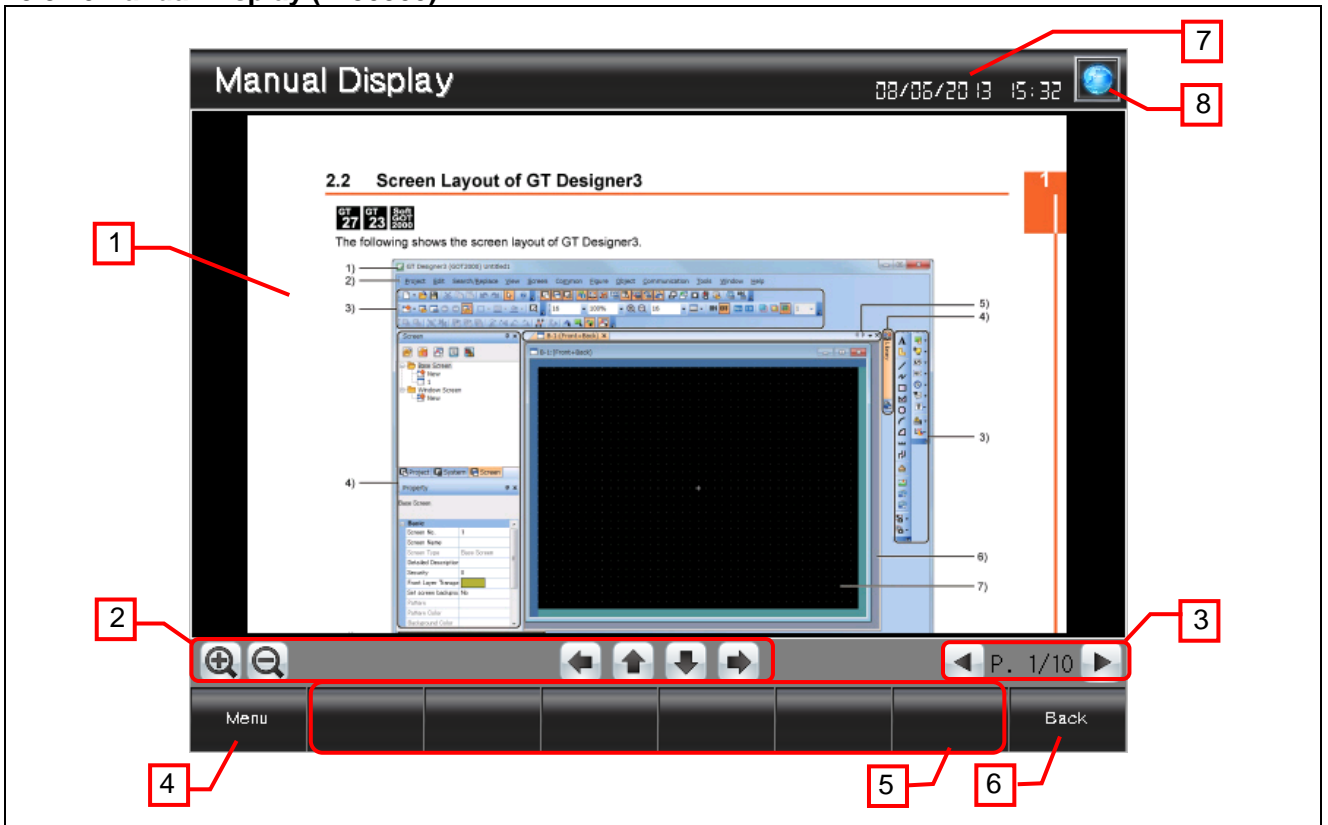


**Outline**

This screen displays the manual of the currently displayed language.

**Description**

1. Manual Display displays a document with document ID (201 to 203) according to the language. The page 1 is displayed when the screen is displayed initially. While touching the document, flicking to 8 directions will scroll the document to 8 directions. While displaying the edge of the document, flicking the document will switch pages. Pinching out and in will zoom in and out the document in 3 steps (large, middle, and small).
2. These switches operate the displayed document.
   - 🔍➕ 🔍➖ : Enlarges or reduces the displayed document.
   - ⬅ ➡ : Scrolls the displayed document to the left or right.
   - ⬆ ⬇ : Scrolls the displayed document up or down.
3. These switches operate the displayed document page.
   - P. 1 : Displays the page number of the displayed document. Touch the value to change the page number.
   - ◀ ▶ : Switches to the previous or next page of the displayed document.
4. Switches to each screen. The blue switch indicates the currently displayed screen, thus selecting this switch will not switch the screen.
5. Shows unused switches for base screen switching.
6. Switches to the previously opened screen.
7. Displays the current date and time. Touch the area to open the [Clock Setting] window.
8. Opens the [Language Setting] window.

**Remarks**

・The language setting reflect documents for Manual display. The relation of the column No. of the comment group No., languages and document (Document ID) is shown below.

| Column No. of the comment group No | Language | Document ID |
|---|---|---|
| 1 | English | 201 |
| 2 | Japanese | 202 |
| 3 | Chinese (Simplified) | 203 |

・When GOT is started, the document page is set to No. "1" and the Document ID is set to "201" with the project script. For more details about scripts, please refer to "5.6 Script List".

・The page feed switches are set not to exceed the total number of document pages by object script. For more details about scripts, please refer to "5.6 Script List".

・The document data for the manual display should be prepared by the customers. For more details, please refer to "5. MANUAL DISPLAY".

・If a system alarm occurs, the alarm message will appear at the bottom of the screen. When touching the left end of the message, the display position of the message changes in the order of upper, center, and lower. When touching the other part of the message, the [Alarm Reset] window appears.

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**5.3.11 Alarm Reset (W-30001)**
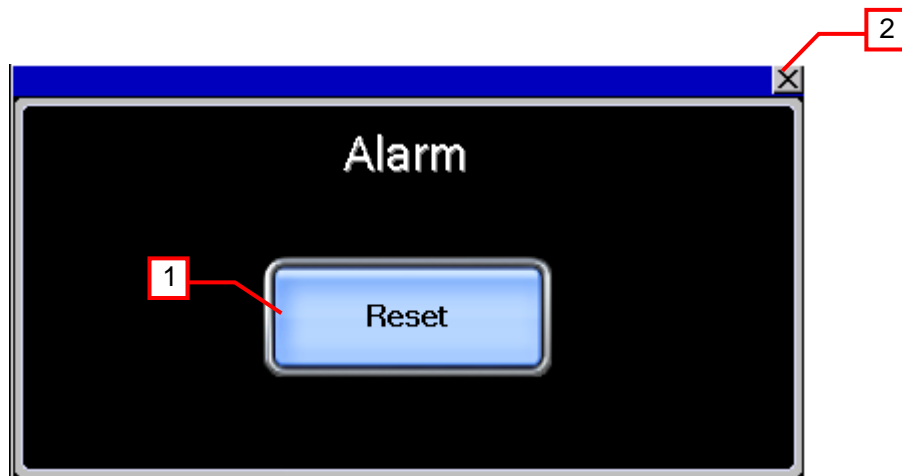


Outline

This window screen allows resetting the system alarm.

Description

1. Resets the system alarm, and closes the window screen after 1 second.
2. Closes the window screen.

Remarks

BCN-P5999-0179-2a

**5.3.12 Language Setting (W-30002)**



**Outline**

This window screen allows selecting the GOT language.

**Description**

1.  Switches the language, and closes the window screen.
2.  Closes the window screen.

**Remarks**

・ The system language and Document ID for manual display also switched corresponding to the display language.

**5.3.13 Clock Setting (W-30003)**
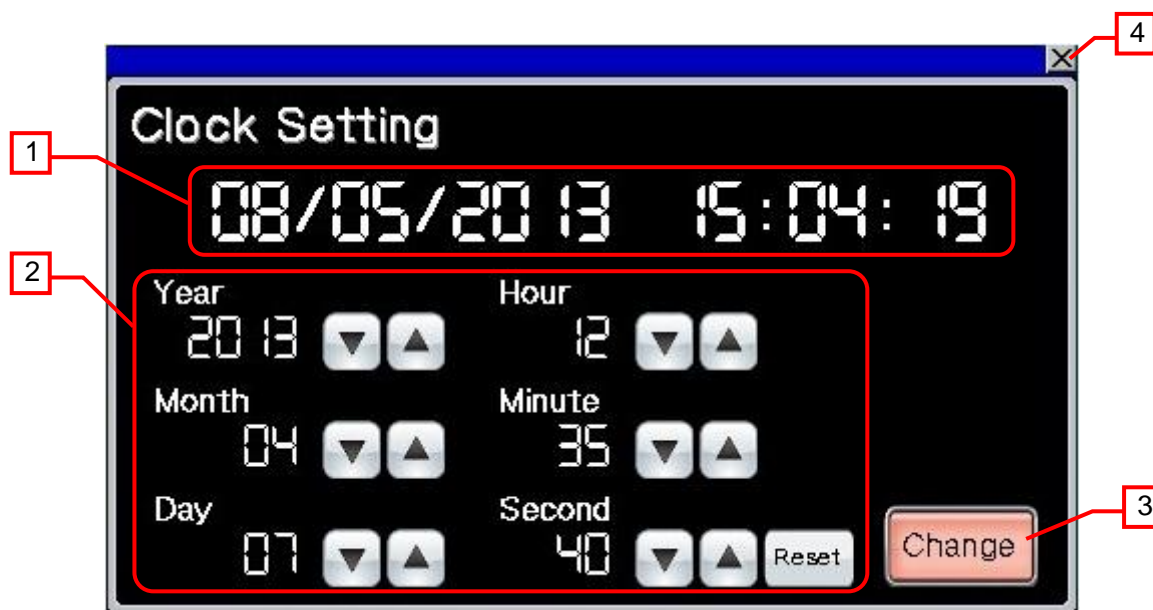
**Outline**

This window screen allows changing the GOT clock data.

**Description**

1. Displays the current date and time.
2. Use ▼▲ switches to change the date and time. Hold down the switches to increment or decrement the value continuously. The [Reset] switch resets the seconds.
3. Applies the set date and time to the GOT clock data, and closes the window screen after 1 second.
4. Closes the window screen.

**Remarks**

• The date and time at window opening are initially set as the clock data to be newly set.
• Object scripts are set for the numerical display of the year, month, date, hour, minute and second in the clock data to be newly set. For more details about scripts, please refer to "5.6 Script List".

**5.3.14  Cam Auto-generation Check Screen (W-30010)**



Cam auto-generation will be executed.
Do you want to proceed?

[1]  [2]  [3]

Yes    No
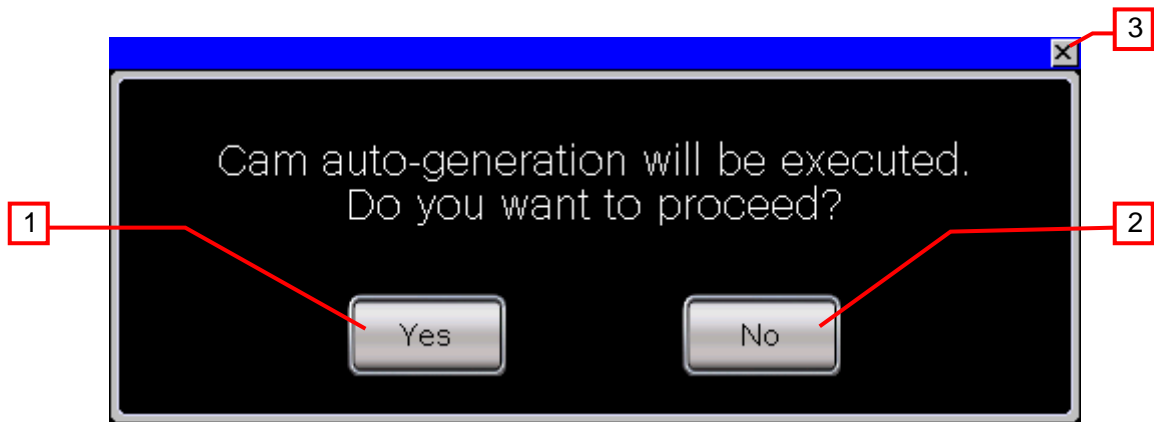
**Outline**

Check before executing cam auto-generation.

**Description**

1.    Executes cam auto-generation.
2.    Closes the window screen.
3.    Closes the window screen.

**Remarks**

## 5.4 Device List

Some of the devices specified for the on-screen switches, lamps, or others are also used for common settings of functions such as scripts. Using [Batch Edit] is recommended to change these devices in a batch. For more details about using [Batch Edit], please refer to "8.1 Changing Start I/O Number" and the "GT Designer3 (GOT2000) Help".

### 5.4.1  Devices of the controller

| Type | Device No. | Application |
|---|---|---|
| Bit | X0000 | Input Signal READY |
| | X0001 | Input Signal Sync Flag |
| | X000F | Input Signal Module READY |
| | X0010 | Input Signal BUSY_Axis 1 |
| | X0011 | Input Signal BUSY_Axis 2 |
| | X0012 | Input Signal BUSY_Axis 3 |
| | X0013 | Input Signal BUSY_Axis 4 |
| | X0014 | Input Signal BUSY_Axis 5 |
| | X0015 | Input Signal BUSY_Axis 6 |
| | X0016 | Input Signal BUSY_Axis 7 |
| | X0017 | Input Signal BUSY_Axis 8 |
| | X0018 | Input Signal BUSY_Axis 9 |
| | X0019 | Input Signal BUSY_Axis 10 |
| | X001A | Input Signal BUSY_Axis 11 |
| | X001B | Input Signal BUSY_Axis 12 |
| | X001C | Input Signal BUSY_Axis 13 |
| | X001D | Input Signal BUSY_Axis 14 |
| | X001E | Input Signal BUSY_Axis 15 |
| | X001F | Input Signal BUSY_Axis 16 |
| | Y0000 | Output Signal PLC READY |
| | Y0001 | Output Signal All Axis Servo ON |
| | Y0010 | Output Signal Positioning Start_Axis 1 |
| | Y0011 | Output Signal Positioning Start_Axis 2 |
| | Y0012 | Output Signal Positioning Start_Axis 3 |
| | Y0013 | Output Signal Positioning Start_Axis 4 |
| | Y0014 | Output Signal Positioning Start_Axis 5 |
| | Y0015 | Output Signal Positioning Start_Axis 6 |
| | Y0016 | Output Signal Positioning Start_Axis 7 |
| | Y0017 | Output Signal Positioning Start_Axis 8 |
| | Y0018 | Output Signal Positioning Start_Axis 9 |
| | Y0019 | Output Signal Positioning Start_Axis 10 |
| | Y001A | Output Signal Positioning Start_Axis 11 |
| | Y001B | Output Signal Positioning Start_Axis 12 |
| | Y001C | Output Signal Positioning Start_Axis 13 |
| | Y001D | Output Signal Positioning Start_Axis 14 |
| | Y001E | Output Signal Positioning Start_Axis 15 |
| | Y001F | Output Signal Positioning Start_Axis 16 |
| Word | U00-G2400+100n (n = 0 to 15) | Current Feed Val. (Axis 1 to 16) |
| | U00-G2402+100n (n = 0 to 15) | Machine Feed Val. (Axis 1 to 16) |
| | U00-G2406+100n (n = 0 to 15) | Error (Axis 1 to 16) |
| | U00-G2407+100n (n = 0 to 15) | Warning (Axis 1 to 16) |
| | U00-G2408+100n (n = 0 to 15) | M Code (Axis 1 to 16) |
| | U00-G2409+100n (n = 0 to 15) | Status (Axis 1 to 16) |
| | U00-G2410+100n (n = 0 to 15) | Current Speed (Axis 1 to 16) |
| | U00-G2412+100n (n = 0 to 15) | Axis Feed Rate (Axis 1 to 16) |
| | U00-G2418+100n (n = 0 to 15) | Target Value (Axis 1 to 16) |
| | U00-G2420+100n (n = 0 to 15) | Target Speed (Axis 1 to 16) |
| | U00-G2427+100n (n = 0 to 15) | Instr. Code (Axis 1 to 16) |
| | U00-G2428+100n (n = 0 to 15) | Instr. Para. (Axis 1 to 16) |
| | U00-G2429+100n (n = 0 to 15) | Start No. (Axis 1 to 16) |
| | U00-G2430+100n (n = 0 to 15) | In Speed Control (Axis 1 to 16) |
| | U00-G2431+100n (n = 0 to 15) | In Speed Change Process (Axis 1 to 16) |
| | U00-G2432+100n (n = 0 to 15) | Special Start Counter (Axis 1 to 16) |

| Type | Device No. | Application |
|------|-----------|-------------|
| Word | U00-G2433+100n (n = 0 to 15) | Control System Counter (Axis 1 to 16) |
| | U00-G2434+100n (n = 0 to 15) | 1st Data Pointer (Axis 1 to 16) |
| | U00-G2435+100n (n = 0 to 15) | Pos. Data No. (Axis 1 to 16) |
| | U00-G2436+100n (n = 0 to 15) | Block No. (Axis 1 to 16) |
| | U00-G2437+100n (n = 0 to 15) | Previous Position (Axis 1 to 16) |
| | U00-G2438+100n (n = 0 to 15) | Acc. Time, Dec. Time, Operation Pattern, Control System (Axis 1 to 16) |
| | U00-G2441+100n (n = 0 to 15) | Int. Axis (Axis 1 to 16) |
| | U00-G2448+100n (n = 0 to 15) | OPR Increment (Axis 1 to 16) |
| | U00-G2450+100n (n = 0 to 15) | Actual Present Value (Axis 1 to 16) |
| | U00-G2452+100n (n = 0 to 15) | Error Counter Value (Axis 1 to 16) |
| | U00-G2454+100n (n = 0 to 15) | Number of Motor Rotation (Axis 1 to 16) |
| | U00-G2456+100n (n = 0 to 15) | Motor Current Value (Axis 1 to 16) |
| | U00-G2470+100n (n = 0 to 15) | Parameter Error No. (Axis 1 to 16) |
| | U00-G2476+100n (n = 0 to 15) | Zero Speed, Zero Point Passed (Axis 1 to 16) |
| | U00-G2477+100n (n = 0 to 15) | Ready ON, Servo ON, Servo Alarm, In-Position, Torque Limit, Abs. Value Cleared, Warning (Axis 1 to 16) |
| | U00-G2478+100n (n = 0 to 15) | Regenerative Load Ratio (Axis 1 to 16) |
| | U00-G2479+100n (n = 0 to 15) | Actual Load Ratio (Axis 1 to 16) |
| | U00-G2480+100n (n = 0 to 15) | Peak Load Ratio (Axis 1 to 16) |
| | U00-G4093+4p ( p = 0 to 15) | Error History_ Axis (No.0 to No.15) |
| | U00-G4094+4p ( p = 0 to 15) | Error History_ Code (No.0 to No.15) |
| | U00-G4095+4p ( p = 0 to 15) | Error History_ Day, Hour (No.0 to No.15) |
| | U00-G4096+4p ( p = 0 to 15) | Error History_ Minute, Second (No.0 to No.15) |
| | U00-G4158+4p ( p = 0 to 15) | Warning History_ Axis (No.0 to No.15) |
| | U00-G4159+4p ( p = 0 to 15) | Warning History_ Code (No.0 to No.15) |
| | U00-G4160+4p ( p = 0 to 15) | Warning History_ Day, Hour (No.0 to No.15) |
| | U00-G4161+4p ( p = 0 to 15) | Warning History_ Minute, Second (No.0 to No.15) |
| | U00-G4231 | Emergency Stop Input |
| | U00-G4256+p ( p = 0 to 15) | Error History_ Month (No.0 to No.15) |
| | U00-G4272+p ( p = 0 to 15) | Warning History_ Month (No.0 to No.15) |
| | U00-G31300+p ( p = 0 to 15) | Error History_ SV (No.0 to No.15) |
| | U00-G31316+p ( p = 0 to 15) | Warning History_ SV (No.0 to No.15) |
| | U00-G53200 | Cam Auto-generation Request |
| | U00-G53201 | Cam Auto-generation Cam No. |
| | U00-G53202 | Cam Auto-generation Type |
| | U00-G53204 | Cam Resolution |
| | U00-G53206 | Sheet Length |
| | U00-G53208 | Sheet Synchronization Width |
| | U00-G53210 | Synchronous Axis Length |
| | U00-G53212 | Synchronization Starting Point |
| | U00-G53214 | Synchronous Section Acceleration Ratio |

### 5.4.2 GOT internal devices

| Type | Device No. | Application |
|------|-----------|-------------|
| Bit | GB40 | Script Trigger (Always ON) |
| | GD60031.b13 | GOT Error Reset Signal |
| | GS512.b0 | Time Change Signal |
| Word | GD60000 | Base Screen Switching |
| | GD60001 | Overlap Window 1 Screen Switching |
| | GD60004 | Overlap Window 2 Screen Switching |
| | GD60021 | Language Switching |
| | GD60022 | System Language Switching |
| | GD60031, GD60041 | System Information |
| | GD60080 to GD60082 | Document Display |
| | GD61000 | 4 Axis Switching Offset Device (Monitor Value) |
| | GD61001 | 4 Axis Switching Offset Device (Axis Display) |

| Type | Device No. | Application |
|---|---|---|
| Word | GD63990 to GD63995 | Clock Digital Switch |
| | GS513 to GS516 | Changed Time |
| | GS650 to GS652 | Current Time |
| | TMP950 to TMP996 | For Script Operation |

## 5.5  Comment List

| Comment group No. | Comment No. | Where comments are used |
|---|---|---|
| 500 | No. 1 to No. 17 | B-30001 to B-30500 |
| | No. 551 to No. 941 | B-30002 |
| | No. 951 to No. 1000 | B-30003 |
| | No. 1011 to No. 1033 | B-30004 |
| | No. 1041 to No. 1068 | B-30005 |
| | No. 1071 to No. 1086 | B-30006 |
| | No. 1091 to No. 1118 | B-30007 |
| | No. 1121 to No. 1129 | B-30010 |
| | No. 1201 to No. 1202 | W-30001 |
| | No. 1203 | W-30002 |
| | No. 1204 to No. 1211 | W-30003 |
| | No. 1251 to No. 1262 | B-30008 |
| | No. 1351 to No. 1353 | W-30010 |

## 5.6  Script List

| Item | Setting |
|---|---|
| Project Script | Specified |
| Screen Script | B-30500 |
| Object script | B-30500, W-30003 |

### 5.6.1  Project script

| Script No. | 30001 | Script name | Script30001 |
|---|---|---|---|
| Comment | Initial Setting | | |
| Data type | Signed BIN16 | Trigger type | Rise, GB40 |

```
[w:GD60080]=201; //Set Document ID to 201
[w:GD60081]=1;   //Set Document page No. to 1
[w:U00-G53202] = 1; //Set Cam Auto-generation Type
```

**Base Screen 30500**

| Script No. | 30002 | Script name | Script30002 |
|---|---|---|---|
| Comment | DocumentDisplayProcessOfLastPage | | |
| Data type | Unsigned BIN16 | Trigger type | Ordinary |

```
//Check the total number of document pages is not 0.
if([w:GD60082]!=0){
  //Compare the current page number to the total number of document pages to see if the current page
number exceeds the total number.
  if([w:GD60081]>[w:GD60082]){
   //Set the last page to display.
   [w:GD60081]=[w:GD60082];
  }
}
```

### 5.6.2 Object script
**Base Screen 30500**

| Object | Switch | Object ID *1 | 20039 |
|---|---|---|---|
| Script user ID | 1 | | |
| Data type | Unsigned BIN16 | Trigger type | Device Writing |
| //Do not exceed the total number of the document pages.<br>if([u16:GD60081] >= [u16:GD60082]){<br>   [u16:GD60081] = [u16:GD60082] - 1;<br>} | | | |

**Window screen 30003**

| Object | Numerical Display | Object ID *1 | 20018 |
|---|---|---|---|
| Script user ID | 1 | | |
| Data type | Unsigned BIN16 | Trigger type | Rise, GB40 |

```
//Obtain Today's Year & Month from Clock Data
[w:TMP950] = [w:GS650] & 0xF000; //Obtain Tenths Digit of "Last 2-Digits of Year" from Clock Data for Setting
[w:TMP960] = [w:TMP950] >> 12; //Decimal Alignment
[w:TMP968] = [w:TMP960] * 10;//BCD->BIN
[w:TMP951] = [w:GS650] & 0x0F00; //Obtain Ones Digit of "Last 2-Digits of Year" from Clock Data for Setting
[w:TMP961] = [w:TMP951] >> 8;//BCD->BIN
[w:TMP973] = 2000 + [w:TMP968] +   [w:TMP961]; //Set Year to TMP973 as BIN
[w:GD63990] = [w:TMP973]; //Set Year

[w:TMP952] = [w:GS650] & 0x00F0; //Obtain Tenths Digit of Month from Clock Data for Setting
[w:TMP962] = [w:TMP952] >> 4; //Decimal Alignment
[w:TMP969] = [w:TMP962] * 10;//BCD->BIN
[w:TMP953] = [w:GS650] & 0x000F; //Obtain Ones Digit of Month from Clock Data for Setting
[w:TMP974] = [w:TMP969] +   [w:TMP953]; //Set Month to TMP974 as BIN
[w:GD63991] = [w:TMP974]; //Set Month

[w:TMP954] = [w:GS651] & 0xF000; //Obtain Tenths Digit of "Last 2-Digits of Day" from Clock Data for Setting
[w:TMP963] = [w:TMP954] >> 12; //Decimal Alignment
[w:TMP970] = [w:TMP963] * 10;//BCD->BIN
[w:TMP955] = [w:GS651] & 0x0F00; //Obtain Ones Digit of "Last 2-Digits of Day" from Clock Data for Setting
[w:TMP964] = [w:TMP955] >> 8;//BCD->BIN
[w:TMP975] =[w:TMP970] +   [w:TMP964]; //Set Day to TMP975 as BIN
[w:GD63992] = [w:TMP975]; //Set Day

[w:TMP956] = [w:GS651] & 0x00F0; //Obtain Tenths Digit of Hour from Clock Data for Setting
[w:TMP965] = [w:TMP956] >> 4; //Decimal Alignment
[w:TMP971] = [w:TMP965] * 10;//BCD->BIN
[w:TMP957] = [w:GS651] & 0x000F; //Obtain Ones Digit of Hour from Clock Data for Setting
[w:TMP976] = [w:TMP971] +   [w:TMP957]; //Set Hour to TMP976 as BIN
[w:GD63993] = [w:TMP976]; //Set Hour

[w:TMP958] = [w:GS652] & 0xF000; //Obtain Tenths Digit of "Last 2-Digits of Minute" from Clock Data for
Setting
[w:TMP966] = [w:TMP958] >> 12; //Decimal Alignment
[w:TMP972] = [w:TMP966] * 10;//BCD->BIN
[w:TMP959] = [w:GS652] & 0x0F00; //Obtain Ones Digit of "Last 2-Digits of Minute" from Clock Data for Setting
[w:TMP967] = [w:TMP959] >> 8;//BCD->BIN
[w:TMP977] =[w:TMP972] +   [w:TMP967]; //Set Minute to TMP977 as BIN
[w:GD63994] = [w:TMP977]; //Set Minute

[w:TMP993] = [w:GS652] & 0x00F0; //Obtain Tenths Digit of Second from Clock Data for Setting
[w:TMP995] = [w:TMP993] >> 4; //Decimal Alignment
[w:TMP996] = [w:TMP995] * 10;//BCD->BIN
[w:TMP994] = [w:GS652] & 0x000F; //Obtain Ones Digit of Second from Clock Data for Setting
[w:TMP978] = [w:TMP996] +   [w:TMP994]; //Set Second to TMP978 as BIN
[w:GD63995] = [w:TMP978]; //Set Second
```

| Object | Numerical Display | Object ID *1 | 20019 |
|---|---|---|---|
| Script user ID | 2 | | |
| Data type | Unsigned BIN16 | Trigger type | Ordinary |

```
//BIN -> BCD Conversion

[w:TMP979] = [w:GD63990] - 2000; //Last 2-Digits of Year

[w:TMP980] = (([w:TMP979] / 10) << 4) + ([w:TMP979] % 10);     //Year BIN -> BCD
[w:TMP981] = (([w:GD63991] / 10) << 4) + ([w:GD63991] % 10);    //Month BIN -> BCD
[w:TMP982] = (([w:GD63992] / 10) << 4) + ([w:GD63992] % 10);    //Day BIN -> BCD
[w:TMP983] = (([w:GD63993] / 10) << 4) + ([w:GD63993] % 10);    //Hour BIN -> BCD
[w:TMP984] = (([w:GD63994] / 10) << 4) + ([w:GD63994] % 10);    //Minute BIN -> BCD
[w:TMP985] = (([w:GD63995] / 10) << 4) + ([w:GD63995] % 10);    //Second BIN -> BCD
```

| Object | Numerical Display | Object ID *1 | 20020 |
|---|---|---|---|
| Script user ID | 3 | | |
| Data type | Unsigned BIN16 | Trigger type | Ordinary |

```
//Year & Month Setting

[w:GS513] = ([w:TMP980] << 8) + [w:TMP981];    //Set Year & Month to Change Time Device
```

| Object | Numerical Display | Object ID *1 | 20021 |
|---|---|---|---|
| Script user ID | 4 | | |
| Data type | Unsigned BIN16 | Trigger type | Ordinary |

```
//Date & Time Setting

[w:GS514] = ([w:TMP982] << 8) + [w:TMP983];    //Set Date & Time to Change Time Device
```

| Object | Numerical Display | Object ID *1 | 20022 |
|---|---|---|---|
| Script user ID | 5 | | |
| Data type | Unsigned BIN16 | Trigger type | Ordinary |

```
//Minute & Second Setting

[w:GS515] = ([w:TMP984] << 8) + [w:TMP985];    //Set Minute & Second to Change Time Device
```

| Object | Numerical Display | Object ID *1 | 20023 |
|---|---|---|---|
| Script user ID | 6 | | |
| Data type | Unsigned BIN16 | Trigger type | Ordinary |

```
//Day of Week Setting

[w:TMP986] = [w:GD63990];   //Year (BIN)
[w:TMP987] = [w:GD63991];   //Month (BIN)
[w:TMP988] = [w:GD63992];   //Day (BIN)

if(([w:TMP987] == 1) || ([w:TMP987] == 2)){ //Correction Processing to Calculate January and February as
13th/14th Month
   [w:TMP986] =[w:TMP986] - 1; //Subtract 1 from Year
   [w:TMP987] =[w:TMP987] + 12; //Add 12 to Month
}

[w:TMP989] = [w:TMP986]/4; //Create Items Required for Zeller's Congruence
[w:TMP990] = [w:TMP986]/100; //Create Items Required for Zeller's Congruence
[w:TMP991] = [w:TMP986]/400; //Create Items Required for Zeller's Congruence
[w:TMP992] = (13*[w:TMP987]+8)/5; //Create Items Required for Zeller's Congruence

//Calculate Day of Week Using Zeller's Congruence and Set the Day to Change Time Device
[w:GS516] = ([w:TMP986]+[w:TMP989]-[w:TMP990]+[w:TMP991]+[w:TMP992]+[w:TMP988])%7;
```

*1 The Object ID might be changed when a screen is utilized.

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# 6. MANUAL DISPLAY

Manuals can be displayed using the document display function. For more details about the document display function, please refer to the "GT Designer3 (GOT2000) Help". Please note that the document display function does not support language switching. Therefore, in the sample screens, the language of document is switched by switching the document (Document ID) specified for a display language.

## 6.1 Preparing Document Data for Manual Display

Example: Displaying a English manual (document) for Manual Display on the base screen B-30500

(1) Convert the manual (Word or Excel, etc.) to be displayed into the document data (JPEG file) that can be used with the document display function by using Document Converter. Set the Document Converter's [Document ID] to 201.
*For details of the relation between Document ID and Display language, please refer to the table below.
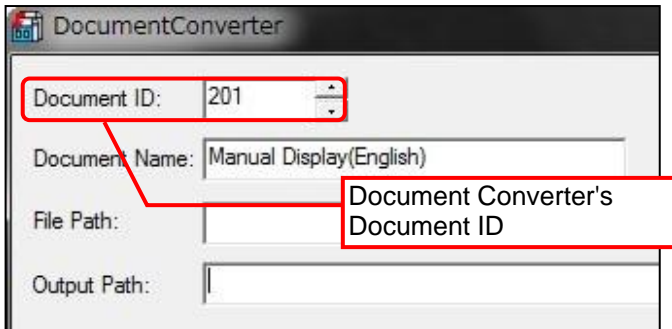


| Column No. of the comment group No | Language | Document ID |
|---|---|---|
| 1 | English | 201 |
| 2 | Japanese | 202 |
| 3 | Chinese (Simplified) | 203 |

*Please use Document Converter 2.09k or later. The total number pages and pages switches cannot work properly with 2.08 or older versions.

(2) The document data is generated in the 201 folder in the DOCIMG. Save the entire DOCIMG folder into the SD card root directory without changing the folder configuration inside the DOCIMG folder.
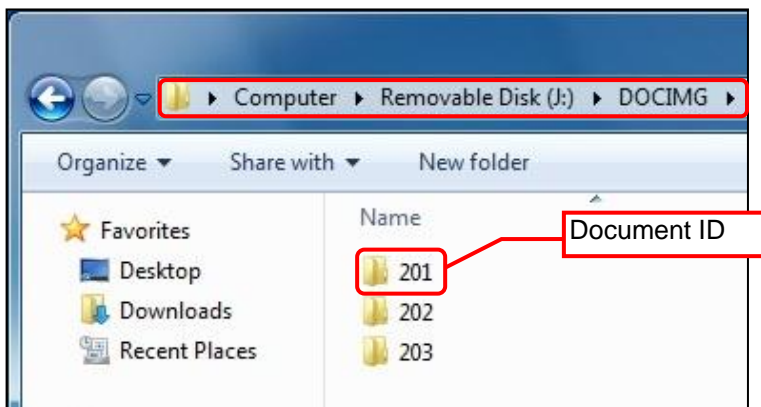


SD card folder configuration

Note: In case the total number of pages is 100 or more.
This sample is made with the assumption that the total number of pages is up to 99 pages. If it exceeds 99 pages, please modify the format of numerical input (the number of "#") that displays the total number of pages and the page number of the currently displayed page.

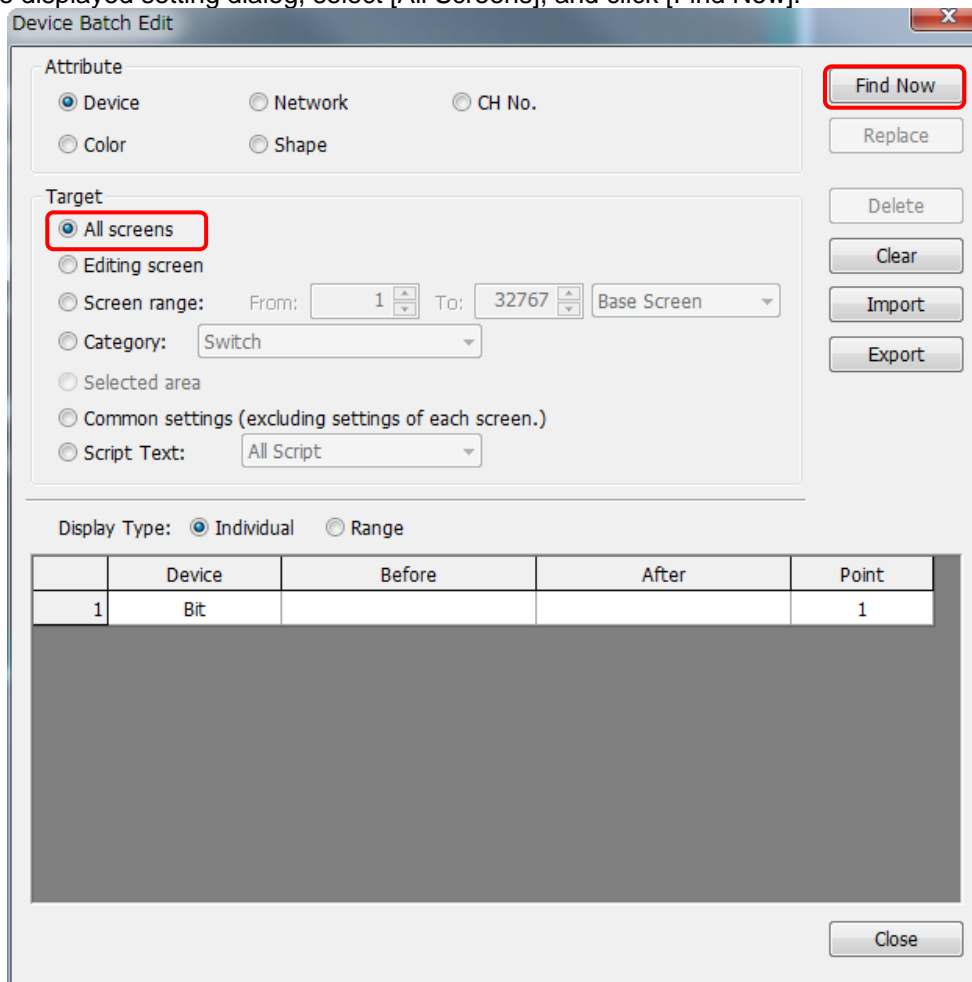BCN-P5999-0179-2a

# 7. OTHERS

## 7.1  Changing Start I/O Number

Follow the procedure below to change the start I/O number of the module to a value other than 0H.
(Example: Changing the start I/O number from 0H to 20H)

(1)   Select [Search/Replace] - [Batch Edit] - [Device] menu.

(2)   In the displayed setting dialog, select [All Screens], and click [Find Now].

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(3) Set the [After] device and [Point], and execute the batch edit.
- Changing the start I/O number of the buffer memory
  Set [Before] to U00-G2406, [After] to U02-G2406, and [Point] to 30532, and click [Replace]. U00-G2406 to U00-G32937 will be changed to U02-G2406 to U02-G32937.
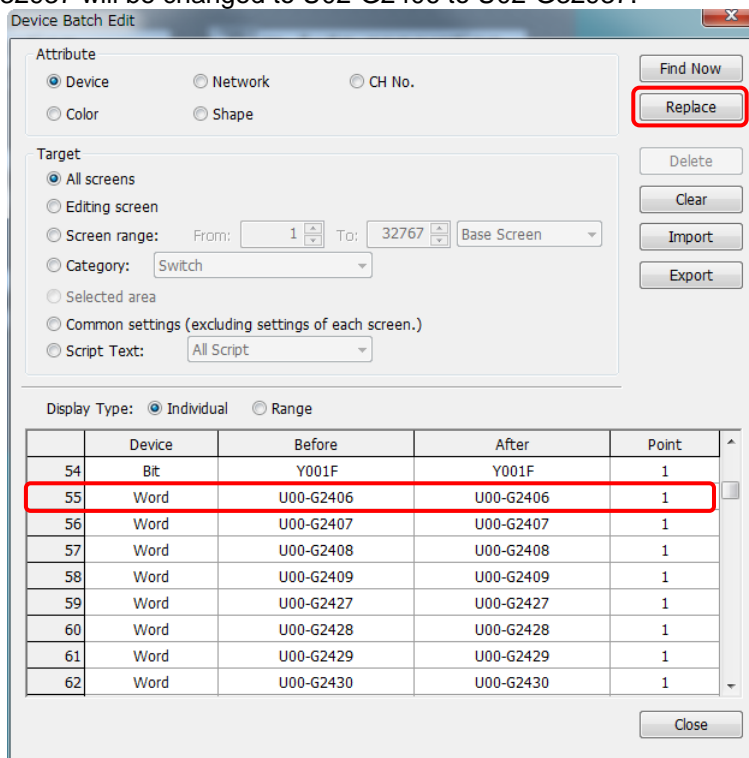


- Changing the start I/O number of the I/O signal
  To change the input signal (X device), set [Before] to X0000, [After] to X0020, and [Point] to 32, and click [Replace]. X0000 to X001F will be changed to X0020 to X003F.
  To change the output signal (Y device), set [Before] to Y0000, [After] to Y0020, and [Point] to 32, and click [Replace]. Y0000 to Y001F will be changed to Y0020 to Y003F.



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