Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly. The precautions given in this manual are concerned with this product. In this manual, the safety precautions are ranked as "WARNING" and "CAUTION".

Note that the caution level may lead to a serious accident according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

### [DESIGN PRECAUTIONS]

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.</td>
</tr>
</tbody>
</table>

- Some failures of the GOT or cable may keep the outputs on or off. Some failures of a touch panel may cause malfunction of the input objects such as a touch switch. An external monitoring circuit should be provided to check for output signals which may lead to a serious accident. Not doing so can cause an accident due to false output or malfunction.

- Do not use the GOT as the warning device that may cause a serious accident. An independent and redundant hardware or mechanical interlock is required to configure the device that displays and outputs serious warning. Not doing so can cause an accident due to false output or malfunction.

- When the GOT detects its backlight failure, the GOT disables the input operation on the touch switch(s). Thus, operators cannot operate the GOT with touches. The GOT backlight failure can be checked with a system signal of the GOT.

- Even when the display section has dimmed due to a failure of the liquid crystal section or the backlight on the GOT, the input operation of the touch switches may still be enabled. This may cause an incorrect operation of the touch switches. For example, if an operator assumes that the display section has dimmed because of the screen save function and touches the display section to cancel the screen save, a touch switch may be activated.
[DESIGN PRECAUTIONS]

⚠️ WARNING

- The display section of the GOT is an analog-resistive type touch panel. Simultaneous pressing of two or more areas on the display section may activate the switch between those areas. Do not press two or more areas simultaneously on the display section. Doing so may cause an accident due to incorrect output or malfunction.

- When programs or parameters of the controller (such as a PLC) that is monitored by the GOT are changed, be sure to shut off the power of the GOT promptly and power on the GOT again. Not doing so can cause an accident due to false output or malfunction.

- If a communication fault (including cable disconnection) occurs during monitoring on the GOT, communication between the GOT and PLC CPU is suspended and the GOT becomes inoperative. A system where the GOT is used should be configured to perform any significant operation to the system by using the switches of a device other than the GOT on the assumption that a GOT communication fault will occur. Not doing so can cause an accident due to false output or malfunction.

⚠️ CAUTION

- Do not bundle the control and communication cables with main-circuit, power or other wiring. Run the above cables separately from such wiring and keep them a minimum of 100mm apart. Not doing so noise can cause a malfunction.

- Do not press the GOT display section with a pointed material as a pen or driver. Doing so can result in a damage or failure of the display section.

- When the GOT is connected to the Ethernet network, the available IP address is restricted according to the system configuration.
  - When multiple GOTs are connected to the Ethernet network: Do not set the IP address (192.168.3.18) for the GOTs and the controllers in the network.
  - When a single GOT is connected to the Ethernet network: Do not set the IP address (192.168.3.18) for the controllers except the GOT in the network.

- Turn on the controllers and the network devices to be ready for communication before they communicate with the GOT. Failure to do so can cause a communication error on the GOT.

- When the GOT is subject to shock or vibration, or some colors appear on the screen of the GOT, the screen of the GOT might flicker.

[MOUNTING PRECAUTIONS]

⚠️ WARNING

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the GOT main unit to/from the panel. Not doing so can cause the unit to fail or malfunction.
### [MOUNTING PRECAUTIONS]

#### CAUTION

- Use the GOT in the environment that satisfies the general specifications described in this manual. Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.
- When mounting the GOT to the control panel, tighten the mounting screws in the specified torque range (0.36N·m to 0.48N·m) with a Phillips-head screwdriver No.2. Undertightening can cause the GOT to drop, short circuit or malfunction. Overtightening can cause a drop, short circuit or malfunction due to the damage of the screws or the GOT.
- Remove the protective film of the GOT. When the user continues using the GOT with the protective film, the film may not be removed.
- Operate and store the GOT in environments without direct sunlight, high temperature, dust, humidity, and vibrations.
- Do not use the GOT in an environment with oil or chemicals. Doing so may cause failure or malfunction due to the oil or chemical entering into the GOT.

### [WIRING PRECAUTIONS]

#### WARNING

- Be sure to shut off all phases of the external power supply used by the system before wiring. Failure to do so may result in an electric shock, product damage or malfunctions.

#### CAUTION

- Please make sure to ground FG terminal of the GOT power supply section by applying 100Ω or less which is used exclusively for the GOT. Not doing so may cause an electric shock or malfunction.
- Correctly wire the GOT power supply section after confirming the rated voltage and terminal arrangement of the product. Not doing so can cause a fire or failure.
- Tighten the terminal screws of the GOT power supply section in the specified torque range (0.5N·m to 0.6N·m). Undertightening can cause a short circuit or malfunction. Overtightening can cause a short circuit or malfunction due to the damage of the screws or the GOT.
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the GOT. Not doing so can cause a fire, failure or malfunction.
- Plug the communication cable into the GOT interface or the connector of the connected unit, and tighten the mounting screws and the terminal screws in the specified torque range. Undertightening can cause a short circuit or malfunction. Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.
[TEST OPERATION PRECAUTIONS]

⚠️ WARNING

- Before performing the test operations of the user creation monitor screen (such as turning ON or OFF bit device, changing the word device current value, changing the settings or current values of the timer or counter, and changing the buffer memory current value), read through the manual carefully and make yourself familiar with the operation method. During test operation, never change the data of the devices which are used to perform significant operation for the system. False output or malfunction can cause an accident.

[STARTUP/MAINTENANCE PRECAUTIONS]

⚠️ WARNING

- When power is on, do not touch the terminals. Doing so can cause an electric shock or malfunction.
- Before starting cleaning or terminal screw retightening, always switch off the power externally in all phases.
  Not doing so can cause the unit to fail or malfunction.
  Undertightening can cause a short circuit or malfunction.
  Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.

⚠️ CAUTION

- Do not disassemble or modify the unit. Doing so can cause a failure, malfunction, injury or fire.
- Do not touch the conductive and electronic parts of the unit directly. Doing so can cause a unit malfunction or failure.
- The cables connected to the unit must be run in ducts or clamped. Not doing so can cause the unit or cable to be damaged due to the dangling, motion or accidental pulling of the cables or can cause a malfunction due to a cable connection fault.
- When unplugging the cable connected to the unit, do not hold and pull from the cable portion. Doing so can cause the unit or cable to be damaged or can cause a malfunction due to a cable connection fault.
- Do not drop the module or subject it to strong shock. A module damage may result.
- Before touching the unit, always touch grounded metals, etc. to discharge static electricity from human body, etc. Not doing so can cause the unit to fail or malfunction.
[TOUCH PANEL PRECAUTIONS]

⚠️ CAUTION

- For the analog-resistive film type touch panels, normally the adjustment is not required. However, the difference between a touched position and the object position may occur as the period of use elapses. When any difference between a touched position and the object position occurs, execute the touch panel calibration.

- When any difference between a touched position and the object position occurs, other object may be activated. This may cause an unexpected operation due to incorrect output or malfunction.

[PRECAUTIONS WHEN THE DATA STORAGE IS IN USE]

⚠️ WARNING

- If the SD card mounted on drive A of the GOT is removed while the GOT is accessed, processing for the GOT might be interrupted about for 20 seconds. The GOT cannot be operated during this period. The functions that run in the background including a screen updating, alarm, logging, scripts, and others are also interrupted. Since this interruption makes an impact to the system operation, it might cause failure. After inhibiting access to the SD card on the GOT utility screen, check that the SD card access LED is off and remove the SD card.

[PRECAUTIONS WHEN THE DATA STORAGE IS IN USE]

⚠️ CAUTION

- If the data storage mounted on the GOT is removed while the GOT is accessed, the data storage and files are damaged. To remove the data storage from the GOT, check that the access to the data storage in SD card access LED, the system signal, and others is not performed.

- When removing the SD card from the GOT, make sure to support the SD card by hand as it may pop out. Failure to do so may cause the SD card to drop from the GOT, resulting in a failure or break.

- Before removing the USB device from the GOT, follow the procedure for removal on the utility screen of the GOT. After the successful completion dialog is displayed, remove the USB device by hand carefully. Failure to do so may cause the USB device to drop from the GOT, resulting in a failure or break.

[DISPOSAL PRECAUTIONS]

⚠️ CAUTION

- When disposing of this product, treat it as industrial waste.
## TRANSPORTATION PRECAUTIONS

<table>
<thead>
<tr>
<th>CAUTION</th>
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</thead>
<tbody>
<tr>
<td>Make sure to transport the GOT main unit and/or relevant unit(s) in the manner they will not be exposed to the impact exceeding the impact resistance described in the general specifications of this manual, as they are precision devices. Failure to do so may cause the unit to fail. Check if the unit operates correctly after transportation.</td>
</tr>
<tr>
<td>When fumigants that contain halogen materials such as fluorine, chlorine, bromine, and iodine are used for disinfecting and protecting wooden packaging from insects, they cause malfunction when entering our products. Please take necessary precautions to ensure that remaining materials from fumigant do not enter our products, or treat packaging with methods other than fumigation (heat method). Additionally, disinfect and protect wood from insects before packing products.</td>
</tr>
</tbody>
</table>
INTRODUCTION

Thank you for choosing Mitsubishi Electric Graphic Operation Terminal (GOT).
Before using the product, read this manual carefully and make sure you understand the functions and performance of the GOT for correct use.

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About Manual

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- Screen creation software manuals

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- GOT SIMPLE series manuals

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<tbody>
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<td>GOT SIMPLE Series User's Manual</td>
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<tbody>
<tr>
<td>Obtaining information of Mitsubishi products applicable to the GOT</td>
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<td>Connecting Mitsubishi products to the GOT</td>
<td>GOT2000 Series Connection Manual (Mitsubishi Product) For GT Works3 Version1</td>
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<td>Connecting multiple controllers to one GOT (Multi-channel function)</td>
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<tr>
<td>Obtaining information of Non-Mitsubishi products applicable to the GOT</td>
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<tr>
<td>Connecting peripheral devices including a bar code reader to the GOT</td>
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<table>
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<tr>
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<tr>
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<tr>
<td>Creating a screen displayed on the GOT</td>
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<tr>
<td>Obtaining useful functions to increase efficiency of drawing</td>
<td>GT Designer3 (GOT2000) Help</td>
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</table>
Abbreviations and Generic Terms

## GOT

<table>
<thead>
<tr>
<th>Abbreviations and generic terms</th>
<th>Description</th>
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<td></td>
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<tr>
<td>GS21</td>
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<tr>
<td>GS2110-W</td>
<td>GS2110-WTBD</td>
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<td>GT27</td>
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<tr>
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<tr>
<td>GT2308-V</td>
<td>GT2308-VTBA, GT2308-VTBD</td>
</tr>
<tr>
<td>GT SoftGOT2000</td>
<td>GT SoftGOT2000 Version1</td>
</tr>
</tbody>
</table>

## Option

<table>
<thead>
<tr>
<th>Abbreviations and generic terms</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD card</td>
<td>L1MEM-2GBSD, L1MEM-4GBSD</td>
</tr>
</tbody>
</table>

## Software

### (1) Software related to GOT

<table>
<thead>
<tr>
<th>Abbreviations and generic terms</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GT Works3</td>
<td>SW1DNC-GTW3-J, SW1DND-GTW3-J, SW1DNC-GTW3-E, SW1DND-GTW3-E, SW1DND-GTW3-C</td>
</tr>
<tr>
<td>GT Designer3 Version1</td>
<td>Screen drawing software GT Designer3 for GOT2000/GOT1000 series</td>
</tr>
<tr>
<td>GT Designer3</td>
<td>Screen drawing software for GOT2000 series included in GT Works3</td>
</tr>
<tr>
<td>GT Designer3 (GOT2000)</td>
<td>Screen drawing software for GOT2000 series included in GT Works3</td>
</tr>
<tr>
<td>GT Designer3 (GOT1000)</td>
<td>Screen drawing software for GOT1000 series included in GT Works3</td>
</tr>
<tr>
<td>GT Simulator3</td>
<td>Screen simulator GT Simulator3 for GOT2000/GOT1000/GOT900 series</td>
</tr>
</tbody>
</table>
(2) Other software

<table>
<thead>
<tr>
<th>Abbreviations and generic terms</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GX Works3</td>
<td>SW::DND-GXW3-E (-EA) type programmable controller engineering software ((\square) indicates a version.)</td>
</tr>
<tr>
<td>GX Works2</td>
<td>SW::DNC-GXW2-□ type programmable controller engineering software ((\square) indicates a version.)</td>
</tr>
<tr>
<td>GX Simulator3</td>
<td>Simulation function of GX Works3</td>
</tr>
<tr>
<td>GX Simulator2</td>
<td>Simulation function of GX Works2</td>
</tr>
<tr>
<td>GX Simulator</td>
<td>SW::D5C-LLT-E (-EV) type ladder logic test tool function software package (SW::D5C-LLT (-V) or later versions) ((\square) indicates a version.)</td>
</tr>
<tr>
<td>GX Developer</td>
<td>SW::D5C-GPPW-E (-EV)/SW::D5F-GPPW (-V) type software package ((\square) indicates a version.)</td>
</tr>
<tr>
<td>GX LogViewer</td>
<td>SW::DNN-VIEWER-E type software package ((\square) indicates a version.)</td>
</tr>
<tr>
<td>PX Developer</td>
<td>SW::D5C-FBDQ-E type FBD software package for process control ((\square) indicates a version.)</td>
</tr>
<tr>
<td>MT Works2</td>
<td>Motion controller engineering environment MELSOFT MT Works2 (SW::DNDMTW2-E) ((\square) indicates a version.)</td>
</tr>
<tr>
<td>MT Developer</td>
<td>SW::RNC-GSV type integrated start-up support software for motion controller Q series ((\square) indicates a version.)</td>
</tr>
<tr>
<td>CW Configurator</td>
<td>C Controller module configuration and monitor tool (SW1DND-RCCPU-E) ((\square) indicates a version.)</td>
</tr>
<tr>
<td>MR Configurator2</td>
<td>SW::DNC-MRC2-E type servo configuration software ((\square) indicates a version.)</td>
</tr>
<tr>
<td>MR Configurator</td>
<td>MRZJW-(\square)-SETUP type servo configuration software ((\square) indicates a version.)</td>
</tr>
<tr>
<td>FR Configurator</td>
<td>Inverter setup software (FR-SW-(\square)-SETUP-WE) ((\square) indicates a version.)</td>
</tr>
<tr>
<td>NC Configurator2</td>
<td>CNC parameter setting support tool (FCSB1221)</td>
</tr>
<tr>
<td>NC Configurator</td>
<td>CNC parameter setting support tool</td>
</tr>
<tr>
<td>FX Configurator-FP</td>
<td>Parameter setting, monitoring, and testing software packages for FX3U-20SSC-H (SW::D5CFXSCE) ((\square) indicates a version.)</td>
</tr>
<tr>
<td>FX3U-ENET-L Configuration tool</td>
<td>FX3U-ENET-L type Ethernet module setting software (SW1D5-FXENETL-E)</td>
</tr>
<tr>
<td>RT ToolBox2</td>
<td>Robot program creation software (3D-11C-WINE)</td>
</tr>
<tr>
<td>MX Component</td>
<td>MX Component Version:: (SW::D5C-ACT-E, SW::D5C-ACT-EA) ((\square) indicates a version.)</td>
</tr>
<tr>
<td>MX Sheet</td>
<td>MX Sheet Version:: (SW::D5C-SHEET-E, SW::D5C-SHEET-EA) ((\square) indicates a version.)</td>
</tr>
<tr>
<td>CPU Module Logging Configuration Tool</td>
<td>CPU module logging configuration tool (SW1DNN-LLUTL-E)</td>
</tr>
</tbody>
</table>

Others

<table>
<thead>
<tr>
<th>Abbreviations and generic terms</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIEMENS</td>
<td>Siemens AG</td>
</tr>
<tr>
<td>PLC</td>
<td>Programmable controller manufactured by each corporation</td>
</tr>
</tbody>
</table>
1. OVERVIEW

1. About GOT

A GOT is installed on the panel surface of a control panel or operating panel and connects to the PLC within the control panel. The GOT carries out switch operation, lamp display, data display, message display, etc.

For the display screen, two kinds of screens are available: user screen and utility screen.

(1) User screen

The user screen is a screen drawn by drawing software. The objects "Touch switch", "Lamp display", "Comment display", and "Numeric display" can be arbitrarily arranged on the display. Moreover, multiple screens created within drawing software can be individually selected or overlapped for the display.

For details, refer to the following.

➢ GT Designer3 (GOT2000) Help

(2) Utility Screen

The utility screen is a factory drawn horizontal screen that cannot be edited. The utility screen can be displayed on the GOT by installing the standard monitor OS from drawing software or an SD card to the GOT. Such as [Brightness] and [Time setting] can be set from the utility screen.

For details, refer to the following.

➢ 9. to 22.
1.1 Features

Monitoring for turning on or off bit devices of a PLC, forcibly turning on or off the bit devices of a PLC, monitoring the word device set value/current value and changing that numeric values are easily made.

(1) The display unit is used for engineers' stage replacement, setting change and troubleshooting or for operation guidance to an operator.
   - Monitor
   - Forcibly turning on or off
   - Set value change
   - Trouble check

(2) Improved monitoring performance and connectivity to FA devices
   - Multiple languages are displayed using the Unicode2.1-compatible fonts and beautiful characters are drawn using the TrueType and high quality fonts
   - Two types of display modes are available: 65536-color display and monochrome
     A fine and beautiful full-color display which shows even small characters clearly, is enabled in the 65536-color display by adopting the high intensity, wide viewing angle and high definition TFT color liquid crystal display.
     (Also compatible with digital screen displays with 65536 colors, BMP, etc.)
   - High speed monitoring through high speed communication at maximum of 115.2kbps
   - High speed display and high speed touch switch response
   - The operation performance is improved by the analog touch panel.

(3) More efficient GOT operations including screen design, startup, adjustment, management and maintenance works
   - The 9MB built-in flash memory is included as standard.
   - SD card interface is included as standard.
   - RS-232 interface is included as standard.
   - RS-422 interface is included as standard.
   - USB interface (device) is included as standard.
   - Ethernet interface is included as standard.
   - System font types are increased by the adoption of the font installation system.
   - Four types of alarms (system alarm, user alarm, alarm history and alarm popup display) are integrated, and realizing an efficient alarm notification.

(4) Enhanced support of FA setup tools
   - Transferring or monitoring the sequence programs using the personal computer connected to GOT, during connection to L, Q, QnA, or FX series PLC CPU (FA transparent function)
1.1.1 Rough procedure

The following shows the procedures before operating a GOT and the descriptions of each item.

1. Install GT Designer3 in a personal computer.
   ➤ Refer to the setting method of GT Works3.
   ➤ Refer to GS21 GOT General Description.

2. Create project data.
   ➤ Refer to GT Designer3 (GOT2000) Help.

3. Wire for the GOT power supply and the controller.
   ➤ 7. WIRING

4. Wire for the controller power supply and I/O.
   ➤ Controller manuals

5. Turn on the power of the GOT and controller.

6. Install the OS to the GOT.
   ➤ Refer to GT Designer3 (GOT2000) Help.

7. Check that the OS is installed to the GOT.

8. Download project data.
   ➤ Refer to GT Designer3 (GOT2000) Help.

9. Turn on the controller power and check that the GOT recognizes the controller.

10. Check that the monitoring is normal.
2. SYSTEM CONFIGURATION

2.1 Overall Configuration

The overall configuration of GOT is as follows. For the connection methods applicable to GS series and cable, refer to the following.

GOT2000 Series Connection Manual For GT Works3 Version1

*1 Only hard copy of the screen can be printed.

2.2 Component List

(1) Explanation of the GOT model name

GS21 0 7 - W T B D

Power type  D : DC24V
Panel color type  B : Black
Display device type  T : TFT color
Resolution  W : 800×480
Display color type  10 : 10"
                 07 : 7"
GS21 series
## 2.2.1 GOT

<table>
<thead>
<tr>
<th>Product name</th>
<th>Model</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| GOT          | GS2110-WTBD | 10” [800 x 480 dots], TFT color liquid crystal, 66536 colors
24VDC, Memory capacity: 9MB, built-in Ethernet interface |
|              | GS2107-WTBD | 7” [800 x 480 dots], TFT color liquid crystal, 66536 colors
24VDC, Memory capacity: 9MB, built-in Ethernet interface |

## 2.2.2 Option

### 1. Connection cables for MITSUBISHI PLCs (Sold separately)

<table>
<thead>
<tr>
<th>Product name</th>
<th>Model</th>
<th>Cable length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-422 Cable</td>
<td>FXCPU direct connection cable, FX expansion board connection cable</td>
<td>GT01-C10R4-8P 1m</td>
<td>For connecting FXCPU (MINI DIN 8 pins connector) and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT01-C30R4-8P 3m</td>
<td>For connecting FXCPU expansion board (MINI DIN 8 pins connector) and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT01-C100R4-8P 10m</td>
<td>For connecting FXCPU expansion board (MINI DIN 8 pins connector) and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT01-C200R4-8P 20m</td>
<td>For connecting FXCPU expansion board (MINI DIN 8 pins connector) and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT01-C300R4-8P 30m</td>
<td>For connecting FXCPU expansion board (MINI DIN 8 pins connector) and GOT</td>
</tr>
<tr>
<td></td>
<td>QnA/A/FXCPU direct connection cable, computer link connection cable</td>
<td>GT01-C30R4-25P 3m</td>
<td>QnA motion controller (A series)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT01-C100R4-25P 10m</td>
<td>For connecting FXCPU (D-Sub 25 pins connector) and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT01-C200R4-25P 20m</td>
<td>For connecting FA-CN/CBL and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT01-C300R4-25P 30m</td>
<td>For connecting serial communication unit (AJ71QC24(N)-R4) and GOT</td>
</tr>
<tr>
<td></td>
<td>Computer link connection cable</td>
<td>GT09-C30R4-6C 3m</td>
<td>For connecting computer link unit/serial communication unit and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT09-C100R4-6C 10m</td>
<td>For connecting computer link unit/serial communication unit and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT09-C200R4-6C 20m</td>
<td>For connecting computer link unit/serial communication unit and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT09-C300R4-6C 30m</td>
<td>For connecting computer link unit/serial communication unit and GOT</td>
</tr>
<tr>
<td>RS-232 cable</td>
<td>QCPU direct connection cable</td>
<td>GT01-C30R2-6P 3m</td>
<td>For connecting QCPU and GOT</td>
</tr>
<tr>
<td></td>
<td>FX expansion board connection cable, FX special adaptor connection cable</td>
<td>GT01-C30R2-9S 3m</td>
<td>For connecting FXCPU expansion board (D-Sub 9 pins connector) and GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GT01-C30R2-25P 3m</td>
<td>For connecting FXCPU special adaptor (D-sub 9 pins connector) and GOT</td>
</tr>
<tr>
<td></td>
<td>FX special adaptor connection</td>
<td>GT09-C30R2-9P 3m</td>
<td>For connecting FXCPU special adaptor (D-sub 25 pins connector) and GOT</td>
</tr>
<tr>
<td></td>
<td>Computer link connection cable</td>
<td>GT09-C30R2-25P 3m</td>
<td>For connecting FXCPU special adaptor (D-sub 25 pins connector) and GOT</td>
</tr>
</tbody>
</table>

### 2. Connection cables for SIEMENS PLCs (Sold separately)

<table>
<thead>
<tr>
<th>Product name</th>
<th>Model</th>
<th>Cable length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-232 cable</td>
<td>GT09-C30R20801-9S 3m</td>
<td>For connecting SIEMENS HMI Adapter and GOT</td>
<td></td>
</tr>
</tbody>
</table>

### 3. SD card (Sold separately)

<table>
<thead>
<tr>
<th>Product name</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD card</td>
<td>L1MEM-2GBSD</td>
<td>SD memory card 2GB</td>
</tr>
<tr>
<td></td>
<td>L1MEM-4GBSD</td>
<td>SDHC memory card 4GB</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Commercially-available SD card¹</td>
</tr>
</tbody>
</table>

*¹ Some models with the operations checked by our company are usable. For the operation-checked models, refer to “Operation Check Results of Third Party SD Cards on GT14 Model” (Hime-T-P-0089) separately available, or contact your local distributor.
4. Drawing software (Sold separately)

<table>
<thead>
<tr>
<th>Product name</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOT screen creation software</td>
<td>SW1DND-GTWK3-J</td>
<td>Standard license product</td>
</tr>
<tr>
<td>MELSOFT GT Works3 Version1</td>
<td>SW1DND-GTWK3-JC</td>
<td>Site license product *2</td>
</tr>
<tr>
<td></td>
<td>SW1DND-GTWK3-JA</td>
<td>Multiple-license product *1</td>
</tr>
<tr>
<td></td>
<td>SW1DND-GTWK3-JAZ</td>
<td>Additional license product *1</td>
</tr>
<tr>
<td></td>
<td>SW1DND-GTWK3-JV</td>
<td>Standard license product (For upgrading version) (For upgrading version of user’s GT Designer2/ GT Works2 to the latest one)</td>
</tr>
<tr>
<td>FA integration engineering software</td>
<td>SW1DND-IQWK-J</td>
<td>Standard license product</td>
</tr>
<tr>
<td>MELSOFT iQ Works <em>3</em>4</td>
<td>SW1DNC-IQWK-J</td>
<td>CD-ROM product</td>
</tr>
</tbody>
</table>

*1 If you need two licenses or more, request the number of licenses. For details, consult your local Mitsubishi representative.

*2 Up to 200 licenses can be registered per site license product. However, this applies only to the same corporation or business facility where the product is purchased.

*3 Site license products, multiple-license products, and additional license products can be provided. For details, refer to MELSOFT iQ Works catalog <L(NA)08232ENG>.

*4 This product includes the following software.
  • System management software [MELSOFT Navigator]
  • PLC engineering software [MELSOFT GX Works2]
  • Motion controller engineering software [MELSOFT MT Works2]
  • Servo setup software [MELSOFT MR Configurator2]
  • GOT screen creation software [MELSOFT GT Works3]
  • Robot programming software [MELSOFT RT ToolBox2 mini]

5. PC connection cable (Sold separately)

<table>
<thead>
<tr>
<th>Product name</th>
<th>Model</th>
<th>Cable length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project data transfer cable</td>
<td>GT09-C30USB-5P</td>
<td>3m</td>
<td>For connecting GOT (USB Mini-B) and personal computer (USB)</td>
</tr>
</tbody>
</table>

6. Bar code reader (Sold separately)

<table>
<thead>
<tr>
<th>Product name</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar code</td>
<td>-</td>
<td>Commercially-available bar code reader*1</td>
</tr>
</tbody>
</table>

*1 Some models with the operations checked by our company are usable. For the operation-checked models, contact your local distributor.
3. SPECIFICATIONS

3.1 General Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating ambient temperature</td>
<td>0 to 50°C</td>
</tr>
<tr>
<td>Storage ambient temperature</td>
<td>-20 to 60°C</td>
</tr>
<tr>
<td>Operating/Storage ambient humidity</td>
<td>10 to 90%RH, non-condensing (The wet bulb temperature is 39°C) When the ambient temperature exceeds 40°C, maintain the absolute humidity at 40°C and 90%.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vibration resistance</th>
<th>Conforms to IEC 61131-2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Under intermittent vibration</td>
<td>5 to 8.4Hz</td>
</tr>
<tr>
<td></td>
<td>8.4 to 150Hz</td>
</tr>
<tr>
<td>Under continuous vibration</td>
<td>5 to 8.4Hz</td>
</tr>
<tr>
<td></td>
<td>8.4 to 150Hz</td>
</tr>
</tbody>
</table>

| Shock resistance | Conforms to IEC 61131-2 (147m/s², 3times each in the X, Y, and Z directions) |

<table>
<thead>
<tr>
<th>Operating atmosphere</th>
<th>Must be free of lamp black, corrosive gas, flammable gas, or excessive amount of electro conductive dust particles. Must be no direct sunlight. (Same as for saving)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating altitude¹</td>
<td>2000m (6562ft) max.</td>
</tr>
<tr>
<td>Overvoltage category²</td>
<td>II or less</td>
</tr>
<tr>
<td>Pollution degree³</td>
<td>2 or less</td>
</tr>
<tr>
<td>Cooling method</td>
<td>Self-cooling</td>
</tr>
<tr>
<td>Grounding</td>
<td>Class D grounding (100Ω or less), To be connected to the panel when grounding is not possible.</td>
</tr>
</tbody>
</table>

¹ Do not use or store the GOT under pressures higher than the atmospheric pressure of altitude 0m (0ft.). Failure to observe this instruction may cause a malfunction. When the air inside the control panel is purged by pressurization, the surface sheet may be lifted by high pressure. As a result, the touch panel may be difficult to press, and the sheet may be peeled off.

² This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within the premises. Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the raged voltage of 300V is 2500V.

³ This index indicates the degree to which conductive pollution is generated in the environment where the equipment is used. In pollution degree 2, only non-conductive pollution occurs but temporary conductivity may be produced due to condensation.
## 3.2 Performance Specifications

The following shows the performance specifications.

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image-url" alt="figure" /></td>
<td><img src="description-url" alt="description" /></td>
</tr>
</tbody>
</table>

### Display section

- **Type**: TFT color liquid crystal
- **Screen size**: 10" 7"
- **Resolution**: 800 × 480 [dots]
- **Display size**: W222(8.74) × H132.5(5.22) [mm][inch] (Horizontal format), W154(6.06) × H85.9(3.38) [mm][inch] (Horizontal format)
- **Display character**: 16-dot standard font: 50 characters × 30 lines (Horizontal format)
- **Display color**: 65536 colors
- **Brightness**: 32-level adjustment

### Backlight

- **Type**: LED-type (no replacement required)
- **Backlight off/screen saving time can be set.**

### Touch panel

- **Type**: Analog-resistive film type
- **Key size**: Minimum 2 × 2 [dots] (per key)
- **Number of points touched simultaneously**: Simultaneous 2-point presses prohibited (Only one point can be touched.)
- **Life**: 1 million times (operating force 0.98N max.)

### Memory

- **C drive**: Flash memory (Internal) (9MB), for storing project data, OS
- **Life (Number of write times)**: 100,000 times

### Built-in interface

- **RS-422**: 1ch
  - Transmission speed: 115200/57600/38400/19200/9600/4800bps
  - Connector shape: D-sub 9 pins (Female)
  - Application: For communicating with controllers
  - Terminating resistor: 330Ω fixed
- **RS-232**: 1ch
  - Transmission speed: 115200/57600/38400/19200/9600/4800bps
  - Connector shape: D-sub 9 pins (Male)
  - Application: For communication with controllers and a bar code reader
  - For PC connection (Project data read/write, FA transparent function)
- **Ethernet**: 1ch
  - Data Transfer method: 100BASE-TX, 10BASE-T, 1ch
  - Connector shape: RJ-45 (modular jack)
  - Application: For communication with controllers
  - For PC connection (Project data read/write, FA transparent function)
- **USB**: USB (Full Speed 12Mbps) 1ch
  - Connector shape: Mini-B
  - Application: For PC connection (Project data read/write, FA transparent function)
- **SD card**: Conforms to the SD standard, 1ch
  - Supported memory card: SDHC memory card, SD memory card
  - Application: Project data read/write, logging data save

### Buzzer output

- **Single tone (LONG/SHORT/OFF adjustable)**

### Protective structure

- **IP65F (only the front part of the panel)**

### External dimensions

- **W272(10.71) × H214(8.43) × D56(2.21) [mm] (inch)**
- **W206(8.11) × H155(6.11) × D50(1.97) [mm] (inch)**

### Panel cutting dimensions

- **W258(10.16) × H200(7.88) [mm] (inch) (Horizontal format)**
- **W191(7.52) × H137(5.40) [mm][inch] (Horizontal format)**

### Weight

- **Approx. 1.3kg (Excluding mounting fixtures)**
- **Approx. 0.9kg (Excluding mounting fixtures)**

### Compatible software package

- **Version1.104J or later**
3.3 Power Supply Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>GS2110-WTBD</th>
<th>GS2107-WTBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input power supply voltage</td>
<td>24VDC (+10% -15%), ripple voltage 200mV or less</td>
<td></td>
</tr>
<tr>
<td>Power consumption</td>
<td>7.6W (317mA/24V) or less</td>
<td>6.5W (271mA/24V) or less</td>
</tr>
<tr>
<td>At backlight off</td>
<td>3.8W (158mA/24V) or less</td>
<td>3.8W (158mA/24V) or less</td>
</tr>
<tr>
<td>Inrush current</td>
<td>17A or less (6ms, 25°C, at the maximum load)</td>
<td></td>
</tr>
<tr>
<td>Permissible instantaneous power failure time</td>
<td>Within 5ms</td>
<td></td>
</tr>
<tr>
<td>Noise immunity</td>
<td>Conforms to IEC61000-4-4, 2kV (power supply line)</td>
<td></td>
</tr>
<tr>
<td>Dielectric withstand voltage</td>
<td>350VAC for 1 minute (across power supply terminals and earth)</td>
<td></td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>500VDC across power terminals and earth, 10 MΩ or more by an insulation resistance tester</td>
<td></td>
</tr>
</tbody>
</table>

**POINT**

Operation at momentary power failure
The GOT continues to operate even upon 5ms or shorter instantaneous power failure. The GOT stops operating if there is extended power failure or voltage drop, while it automatically resumes operation as soon as the power is restored.
3.4 GOT Connector Specifications

The following shows the specifications of connectors for the GOT. Refer to this section for creating a connection cable by the user.

3.4.1 RS-232 interface

The following shows the connector for the RS-232 interface of the GOT. For the connection cable connector of the GOT side, use a connector and a connector cover which can be connected to the GOT connector.

1. Connector specifications

<table>
<thead>
<tr>
<th>GOT</th>
<th>Connector type</th>
<th>Connector model</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS series</td>
<td>D-sub 9 pins (Male)</td>
<td>17LE-23090-27(D3CC)</td>
<td>DDK Ltd.</td>
</tr>
</tbody>
</table>

2. Connector pin arrangement

GOT main part connector
see from the front

```
+---+---+---+---+---+---+---+---+---+
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
```

D-Sub 9pin male

3.4.2 RS-422 interface

The following shows the connector for the RS-422 interface of the GOT. For the connection cable connector of the GOT side, use a connector and a connector cover which can be connected to the GOT connector.

1. Connector model

<table>
<thead>
<tr>
<th>GOT</th>
<th>Connector type</th>
<th>Connector model</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS series</td>
<td>D-sub 9 pins (Female)</td>
<td>17LE-13090-27(D3AC)</td>
<td>DDK Ltd.</td>
</tr>
</tbody>
</table>

2. Connector pin arrangement

GOT main part connector
see from the front

```
+---+---+---+---+---+---+---+---+---+
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
```

D-Sub 9pin female
### 4.1 Front Panel

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Display section</td>
<td>Displays the utility screen and the user creation screen.</td>
</tr>
<tr>
<td>(2)</td>
<td>Touch panel</td>
<td>For operating the touch switches in the utility screen and the user creation screen</td>
</tr>
</tbody>
</table>
### 4.2 Back Panel

#### GS2110-WTBD

![Diagram of GS2110-WTBD Back Panel](image)

#### GS2107-WTBD

![Diagram of GS2107-WTBD Back Panel](image)

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>RS-232 interface</td>
<td>For communicating with controller (PLC, microcomputer board, RFID, etc) or personal computer (OS installation, project data download, FA transparent) (D-sub 9-pin male)</td>
</tr>
<tr>
<td>(2)</td>
<td>RS-422 interface</td>
<td>For communicating with controller (PLC, microcomputer board, etc) (D-sub 9-pin female)</td>
</tr>
<tr>
<td>(3)</td>
<td>Ethernet interface</td>
<td>For Ethernet communication with controller (PLC, microcomputer board, etc) (RJ-45 connector)</td>
</tr>
<tr>
<td>(4)</td>
<td>USB interface</td>
<td>USB interface (host) for data transfer and saving</td>
</tr>
<tr>
<td>(5)</td>
<td>Hole for preventing the USB cable from unplugging</td>
<td>Hole for preventing the USB cable from unplugging with a banding band</td>
</tr>
<tr>
<td>(6)</td>
<td>Rating plate (nameplate)</td>
<td>Model name, current consumption, production number, hardware version, and Boot OS version are described.</td>
</tr>
<tr>
<td>(7)</td>
<td>SD card interface</td>
<td>Interface for mounting an SD card to the GOT</td>
</tr>
<tr>
<td>(8)</td>
<td>SD card access LED</td>
<td>ON: SD card is accessed, OFF: SD card is not accessed</td>
</tr>
<tr>
<td>(9)</td>
<td>Power terminal</td>
<td>Power terminal and FG terminal (for power supply (24VDC) to GOT and grounding)</td>
</tr>
<tr>
<td>(10)</td>
<td>Ethernet communication status LED</td>
<td>SD RD: Green light while data are being sent or received, 100M: Green light when the transmission speed is 100Mbps</td>
</tr>
</tbody>
</table>
### 4.3 Bottom

#### GS2110-WTBD

![Diagram of GS2110-WTBD bottom]

#### GS2107-WTBD

![Diagram of GS2107-WTBD bottom]

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Hole for unit installation</td>
<td>Hole for the inserting installation fittings (accessory) during the GOT installation to the panel (4 holes at top and bottom)</td>
</tr>
</tbody>
</table>
5. EMC DIRECTIVE

5.1 Overview

For the products sold in European countries, the conformance to the EMC Directive, which is one of the European Directives, has been a legal obligation since 1996. Manufacturers, who recognize that their products comply with the EMC Directive must declare that their products comply with the Directives and put a CE mark on the products.

■1. Sales representative in Europe

The sales representative in Europe is as shown below.

Company name: Mitsubishi Electric Europe BV
Address: Mitsubishi-Electric-Platz 1, 40882 Ratingen, Germany

5.1.1 Conforming standards in the EMC Directive

The GOT complies with the following standards in the EMC Directive.

<table>
<thead>
<tr>
<th>Applied standard</th>
<th>Test standard</th>
<th>Test details</th>
<th>Standard value</th>
</tr>
</thead>
</table>
| CISPR16-2-3      | Radiated noise*1 | Test for measuring electromagnetic emissions from the product | • 30 MHz to 230 MHz
|                  |                |              | QP: 30 dBμV/m (measured at 30 m)²³ |
|                  |                |              | • 230 MHz to 1000 MHz
|                  |                |              | QP: 37 dBμV/m (measured at 30 m)²³ |
| IEC61000-4-2     | Electrostatic immunity*1 | Immunity test in which static electricity is applied to the cabinet of the equipment | • Contact discharge: ±4 kV
|                  |                |              | • Aerial discharge: ±8 kV |
| IEC61000-4-3     | Radiated electromagnetic field, amplitude modulation*1 | Immunity test in which an electric field is applied to the product | 80 MHz to 1000 MHz: 10 V/m
|                  |                |              | 1.4 GHz to 2 GHz: 3 V/m
|                  |                |              | 2.0 GHz to 2.7 GHz: 1 V/m
|                  |                |              | (80% amplitude modulation at 1 kHz) |
| IEC61000-4-4     | Fast transient burst noise*1 | Immunity test in which burst noise is applied to the power cables and the signal lines | Power cable: 1 kV
|                  |                |              | Digital I/O: 1 kV
|                  |                |              | Analog I/O: 1 kV
|                  |                |              | Signal cable: 1 kV |
| EN61131-2:2007   |               |              |                 |
| IEC61000-4-5     | Surge immunity*1 | Immunity test in which lightening surge is applied to the product | • AC power type
|                  |                |              | Power cable (between cable and ground): ±2 kV
|                  |                |              | Power cable (between cables): ±1 kV
|                  |                |              | Data communication port: ±1 kV
|                  |                |              | • DC power type
|                  |                |              | Power cable (between cable and ground): ±0.5 kV
|                  |                |              | Power cable (between cables): ±0.5 kV
|                  |                |              | Data communication port: ±1 kV |
| IEC61000-4-6     | Conducted RF immunity*1 | Immunity test in which a noise is induced on the power cable and the signal lines is applied | Power cable: 10 V
|                  |                |              | Data communication port: 10 V |
| IEC61000-4-8     | Power supply frequency magnetic field immunity | Test for checking normal operations under the circumstance exposed to the ferromagnetic field noise of the power supply frequency (50/60 Hz) | 30 A/m |

*1 The GOT is an open type device (designed to be integrated in equipment). Make sure to install the GOT on a control panel. This test item is conducted in the condition where the GOT is installed on a control panel and combined with the MITSUBISHI PLC.

*2 QP: Quasi-peak value, Mean: Average value

*3 This test item is conducted in the following conditions.

• 30 MHz to 230 MHz
|              | QP: 40 dBμV/m (measured at 10 m) |
|              | 230MHz to 1000MHz
|              | QP: 47 dBμV/m (measured at 10 m) |
5.2 EMC Directive Requirements

The EMC Directive requires the following.
• Strong electromagnetic waves are not emitted to the outside.: Emission (Electromagnetic interference)
• The product is not affected by the electromagnetic waves from the outside.: Immunity (Electromagnetic sensitivity)

To comply with the EMC Directive, this section explains the precautions for configuring equipment integrating the GOT. The data described herein are produced with our best, based on the regulation requirements and standards obtained by Mitsubishi. However, the data do not guarantee that the whole equipment produced according to the data comply with the above directive. The manufacturer of the equipment must determine the method to comply with the EMC Directive and conformance to the directive.

5.2.1 Installing the GOT on the control panel

The GOT is an open type device (designed to be integrated in equipment).
Make sure to install the GOT in a control panel. This restriction ensures safety and also has a large effect of suppressing noise generated from the GOT by using the control panel.

1. Control panel
• The control panel must be conductive.
• When fixing a top or bottom plate of the control panel with bolts, do not coat the plate and bolt surfaces so that they contact each other.
  Connect the door and the box using a thick grounding cable to ensure the low impedance under high frequency.
• To ensure electric conductivity in the large area as much as possible between an inner plate and the control panel,
  do not coat the fixing bolt area of the inner plate and the control panel.
• Ground the control panel using a thick grounding cable to ensure the low impedance under high frequency.
• The diameter of cable holes on the control panel must be 10 cm or less.
  If the diameter of the hole is 10 cm or more, radio waves may leak.
  To reduce the chance of radio waves leaking out, ensure that the space between the control panel and its door is as small as possible.
  Pasting the following EMI gasket directly on the painted surface seals the space, reducing the leak of electric waves.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Series name</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITAGAWA INDUSTRIES CO., LTD.</td>
<td>RFSG series (Recommended Product)</td>
<td>0587-34-3651</td>
</tr>
</tbody>
</table>

Our test has been carried out on a panel having the damping characteristics of 37 dB max. and 30 dB mean (measured by 3m method with 30 to 300 MHz).

2. Connection of power and ground cables

Ground the GOT and connect power supply cables as shown below.

1. Wiring the ground cable
Provide a ground point near the GOT.
Ground the frame ground terminal (FG terminal) of the GOT with the thickest and shortest cable as possible.

2. Ground cable length
The ground cable length must be 30 cm or shorter.
The FG terminals pass the noise generated in the PLC system to the ground.
Therefore, ensure an impedance as low as possible.
Since the ground cables relieve the noise, the cables themselves carry a large noise.
Thus, short wiring prevents the cable from acting as an antenna.
(A long conductor is an antenna radiating noise more efficiently.)

3. Treatment of the power cable and the ground cable
Twist the ground cable led from the ground point with the power cable.
Twisting with the ground cable relieves more noise from the power cable to the ground.
When a noise filter is installed to the power cable, twisting the power cable and the ground cable may not be required.
5.2.2 Installing a noise filter (power supply line filter)

A noise filter is a part to effectively reduce conducted noise. Except some models, installation of a noise filter to the power supply lines is not necessary. However, installing the noise filter can reduce conducted noise. The noise filter is effective to reduce conducted noise in the band of 10 MHz or less. Use a noise filter equivalent to the following noise filters (double π-type filters).

<table>
<thead>
<tr>
<th>Model</th>
<th>Manufacturer</th>
<th>Rated current</th>
<th>Rated voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FN343-3/05</td>
<td>SCHAFFNER</td>
<td>3A</td>
<td>250V</td>
</tr>
<tr>
<td>FN660-6/06</td>
<td>SCHAFFNER</td>
<td>6A</td>
<td></td>
</tr>
<tr>
<td>RSHN-2003</td>
<td>TDK</td>
<td>3A</td>
<td></td>
</tr>
</tbody>
</table>

1. Precautions

The following shows the precautions for installing a noise filter.

(1) Prohibition of bundling cables

Do not bundle the input and output cables of the noise filter. Bundling the cables inducts the noise from the output-side cable into the input-side cable where noise has been eliminated by the noise filter.

Wire the input and output cables separately. Bundling the input and output cables inducts noise.

(2) Grounding the noise filter

Connect the ground terminal of the noise filter to the control panel with a short cable as much as possible (approximately 10 cm).
5.2.3 System configuration

1. GOT

Use the following GOTs having a CE mark on the rating plate. The following models are compliant with the EMC Directive at factory shipment. When any GOT other than the following does not comply with the EMC Directive.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS2110</td>
<td>GS2110-WTBD</td>
</tr>
<tr>
<td>GS2107</td>
<td>GS2107-WTBD</td>
</tr>
</tbody>
</table>

2. Connection type

The following table lists the connection types compliant with the EMC Directive. ○: Compliant with EMC Directive, ×: Not compliant with EMC Directive

<table>
<thead>
<tr>
<th>Connection type*1</th>
<th>GS21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet connection</td>
<td>○</td>
</tr>
<tr>
<td>Direct CPU connection</td>
<td>○</td>
</tr>
<tr>
<td>Computer link connection</td>
<td>○</td>
</tr>
<tr>
<td>Other connections (Connection with non-Mitsubishi PLC, inverter, servo amplifier)</td>
<td>○*2</td>
</tr>
</tbody>
</table>

*1 For the details of each connection type, refer to the following manual.

GOT2000 Series Connection Manual (GT Works3 Version1) for the controller used

*2 When connecting the GOT to other controllers such as a non-Mitsubishi PLC, fabricate connection cables and configure the system following the EMC Directive specifications.

4. Non-Mitsubishi PLC, inverter, and servo amplifier connections

POINT

Connected devices

When connecting the GOT to a non-Mitsubishi PLC, refer to the manual about the EMC Directive compliance of the connected device (such as a PLC and a microcomputer).

5.2.4 Connection of power cables and ground cables

Carry out wiring and connect the power and ground cables according to the following instruction. By the different wiring or connection method, the system may not comply with EMC Directive.

1. Wiring method

For connection of power cables and ground cables, refer to the following.

Ground the frame ground terminal (FG terminal) of the GOT with the thickest and shortest cable as possible.

7.2 Wiring Inside and Outside the Panel
5.2.5 **Fabricating a connection cable**

Fabricate the cables used for the GOT by the methods as shown in this section. The fabrication requires a ferrite core, cable clamp, and cable shielding materials. The following products have passed the Mitsubishi EMC Directive compliance test.

- ZCAT3035-1330 ferrite core (TDK Corporation)
- AD75CK-type cable clamp (Mitsubishi Electric Corporation)

### 1. Ethernet connection

1. **Ethernet cable**
   - Strip off the sheath at both ends of the cable as shown in the figure below to expose braided shield for grounding. The braided shield sections are used for grounding with a cable clamp.

   ![Diagram](image)

   - 5.2.6 Grounding a cable
   - Connecting to the Ethernet interface of the GOT

### 2. Direct CPU connection

1. **RS-232 cable and RS-422 cable**
   - Install a ferrite core to the cable in the positions as shown in the figure below.

   ![Diagram](image)

### 3. Computer link connection

1. **RS-232 cable and RS-422 cable**
   - Strip off the sheath at both ends of the cable as shown in the figure below to expose braided shield sections for grounding. The braided shield sections are used for grounding with a cable clamp.

   ![Diagram](image)
4. Non-Mitsubishi PLC, inverter, and servo amplifier connections

Create the cables (RS-232 cable, RS-422/485 cable) for connecting the GOT and a controller by yourself. For how to create a cable, refer to the following.

➔ GOT2000 Series Connection Manual For GT Works3 Version1

**POINT**

**Treatment of the RS-232 cable and RS-422/485 cable**

When the GOT is connected to a controller, configure the system according to the EMC Directive specifications for the controller.

The following shows the recommended instructions to comply with the EMC Directive.

However, the manufacturer of the equipment must determine the method to comply with the EMC Directive and conformance to the directive.

(1) **RS-422/485 cable**

- When connecting each signal wire (except SG and FG wires), twist two signal wires as shown below.

- Connect two or more SG wires.

(2) **RS-232 cable**

- Twist each signal wire (except SG and FG wires) with the SG wire.

- Install a ferrite core to the cable in the positions as shown in the figure below.

- Strip off the sheath at the both ends of the cable as shown in the figure below to expose braided shield for grounding. The braided shield sections are used for grounding with a cable clamp.

---

**Diagram**

[Diagram showing cable connections and dimensions]
5.2.6 Grounding a cable

1. Grounding method
   Ground the cable and ground cable to the control panel where the GOT and the PLC are installed. Ground the braided shield section of the cable to the control panel with the cable clamp (AD75CK).
   
   To ground a bus connection cable, ground the braided cable for grounding to the control panel by tightening a screw.

2. Precautions
   Do not arrange the cable clamp close to the other cables that are not clamped. The noise from the control panel may enter the cable clamp and adversely affect the GOT.
6. INSTALLATION

### MOUNTING PRECAUTIONS

#### WARNING

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the GOT main unit to/from the controller.
  Not doing so can cause the unit to fail or malfunction.

### MOUNTING PRECAUTIONS

#### CAUTION

- Use the GOT in the environment that satisfies the general specifications described in this manual.
  Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.
- Never drop cutting chips and electric wire chips into the ventilation window of the GOT when you drill screw holes or perform wiring.
  Otherwise, fire, failure or malfunction may be caused.
- Connect connection cables securely to the specified connectors while the power is turned OFF.
  Imperfect connection may cause malfunction or failure.
- Operate and store the GOT in environments without direct sunlight, dust, lamp black, conductive dust, corrosive gas, combustible gas, high temperature, condensation, wind, rain, vibrations and impacts.
  Electric shock, fire, malfunction, product damage or deterioration can be caused.
- Tighten the mounting screws within the specified torque range.
  Undertightening can cause the GOT to drop, short circuit or malfunction. In addition, undertightening can disable waterproof or oil proof effect.
  Overtightening can cause a drop, short circuit or malfunction due to the damage of the screws or the GOT. In addition, the waterproof effect and oilproof effect may not be available due to the “distortion” of GOT or panel.

6.1 **Control Panel Inside Dimensions for Mounting GOT**

Mount the GOT onto the control panel while considering the following control panel inside dimensions.
(If the vertical format is selected, the dimension, which is rotated 90 degrees clockwise looking from the display section side, is required.)

![Diagram]

**POINT**

**Applicable cable**

Some cables may need to be longer than the specified dimensions when connecting to the GOT. Therefore, consider the connector dimensions and bending radius of the cable as well for installation.

<table>
<thead>
<tr>
<th>Unit: mm (inch)</th>
<th>30 (1.18)</th>
</tr>
</thead>
</table>

---

6.1 Control Panel Inside Dimensions for Mounting GOT 6 - 1
6.2 Panel Cutting Dimensions

Cut holes in the following dimensions on the panel.
Ensure 10mm of space in upper and lower parts of the panel for mounting fixtures.

- Horizontal format (If the vertical format is selected, the dimension must be rotated 90 degrees.)

![Diagram](6.2-Panel-Cutting-Dimensions.png)

Panel thickness: 1.6 to 4mm
(0.06" to 0.15")

<table>
<thead>
<tr>
<th>Item</th>
<th>A [mm] (inch)</th>
<th>B [mm] (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS2110-WTBD</td>
<td>258 (10.16&quot;)</td>
<td>200 (7.88&quot;)</td>
</tr>
<tr>
<td>GS2107-WTBD</td>
<td>191 (7.52&quot;)</td>
<td>137 (5.4&quot;)</td>
</tr>
</tbody>
</table>

6.3 Mounting Position

When mounting the GOT, the following clearances must be maintained from other structures and devices.

- Horizontal format (If the vertical format is selected, the dimension, which is rotated 90 degrees clockwise looking from the display section side, is required.)

<table>
<thead>
<tr>
<th>Installation Environment</th>
<th>A, D [mm] (inch)</th>
<th>B [mm] (inch)</th>
<th>C [mm] (inch)</th>
<th>E [mm] (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the presence of radiated-noise or heat-generating equipment nearby</td>
<td>50mm (1.97&quot;) or more</td>
<td>80mm (3.14&quot;) or more</td>
<td>50mm (1.97&quot;) or more</td>
<td>100mm (3.94&quot;) or more</td>
</tr>
<tr>
<td>In the absence of radiated-noise or heat-generating equipment nearby</td>
<td>20mm (0.79&quot;) or more</td>
<td>20mm (0.79&quot;) or more</td>
<td>20mm (0.79&quot;) or more</td>
<td>20mm (0.79&quot;) or more</td>
</tr>
</tbody>
</table>

*1 Vertical Format...50mm (1.97") or more
*2 Vertical Format...80mm (3.14") or more

Panel thickness: 1.6 to 4mm
(0.06" to 0.15")
6.4 Control Panel Temperature and Mounting Angle

When mounting the main unit to a control panel or similar fixture, set the GOT display section as shown below.

1. **Horizontal installation**
   When the temperature inside the control panel is 40 to 50°C, the mounting angle should be in the range from 60 to 105 degrees.

   ![Diagram of horizontal installation]

   The GOT will have a longer lifetime if used within the mounting angles shown above. Ideally, the temperature inside the control panel should not exceed 0 to 40°C.

2. **Vertical installation**
   When the temperature inside the control panel is 40 to 50°C, the mounting angle should be in the range from 60 to 105 degrees.

   ![Diagram of vertical installation]

   The GOT will have a longer lifetime if used within the mounting angles shown above. Ideally, the temperature inside the control panel should not exceed 0 to 40°C.
6.5 Installation Procedure

The GOT is designed to be embedded into a panel. Mount the GOT by following the procedure below. Refer to "6.2 Panel Cutting Dimensions" for the panel cutting dimensions. In addition, the thickness of the installation panel face must be 1.6 to 4mm.

**Step 1.** Inserting into the panel face
Insert the GOT from the front side of the panel.

**Step 2.** Fixing the GOT
Engage the hook of the mounting fixture (accessory) to the unit fixing hole of the GOT and fix them by tightening the mounting screws (accessory) in the torque range of 0.36 to 0.48N·m.

**Step 3.** A protection film is attached on the display section of GOT prior to shipment. Remove the film when the installation is completed.

**POINT**
Check that the packing is firmly attached with the GOT. If the packing is loose, attach the packing to the GOT securely.
Cautions on installation

(1) Tightening the mounting screw
- Tighten the mounting screw within the specified torque.
- Under tightening can cause the GOT to drop. In addition, undertightening can disable waterproof or oil proof effect.
- Failure to do so may damage the unit, or distort the panel and make a surface waviness on the display area, leading to deterioration of the visibility or incorrect input from the touch panel. In addition, undertightening can disable waterproof or oil proof effect.
- Specified torque range: 0.36 to 0.48N·m

(2) Installation panel surface
- Make sure that the panel surface is free from warpage, flaws and irregularities. Warpage, flaws and irregularities may disable the waterproof effect.
- Select proper panel thickness under consideration of the panel strength.
- For example, the panel strength may be insufficient depending on the panel material and dimensions even if the panel thickness is acceptable.
- Insufficient panel strength may cause warpage depending on the installation positions of the GOT and other equipment.)
This chapter describes the wiring to the GOT power supply section. For the connection with a PLC, refer to the following.

➠ GOT2000 Series Connection Manual For GT Works3 Version1

For the dimensional drawing of connection cables, refer to the following.

➠ Appendix.1 External Dimensions

**POINT**

**General preventive measures against noise**

There are two kinds of noises: Radiated noise that is transmitted into the air and Conductive noise that is directly transmitted along connected lines. Countermeasures must be taken considering both kinds of noises and referring to the following 3 points.

1. **Protecting against noise**
   - Keep signal lines away from noise sources such as a power cable or a high-power drive circuit.
   - Shield the signal lines.

2. **Reducing generated noise**
   - Use a noise filter, etc. to reduce the level of the noise generated due to a source such as a high-power motor drive circuit.
   - Attach surge killers to the terminals on the no fuse breakers (NFB), electromagnetic contactors, relays, solenoid valves, and generators to suppress noise interference.

3. **Releasing noise to the ground**
   - Make sure to connect the ground cable to the ground.
   - Use a short and thick cable to lower its ground resistance.
   - Ground the power system and the control system separately.
7.1 Power Supply Wiring

Connect the power supply to the power terminals on the back panel of the GOT. Use a specified size power supply wire to prevent voltage drop, and tighten the terminal screws firmly to a specified torque. Do not exceed the number of wires that are allowed to be connected. Secure the wires to prevent stress from being directly applied to the terminal block or wire connections.

7.1.1 Cable types and wire end processing

Process the end of the electrical wire (solid or stranded), or attach a ferrules with plastic sleeve to the wire end. Terminal screws should be tightened to between 0.3 to 0.5N·m. Terminal screws must be secured to prevent a loose connection thus avoiding a malfunction. When tightening terminal screws, do not exceed the specified torque. Failure to do so may cause equipment failures or malfunctions.

1. Electrical wire size

<table>
<thead>
<tr>
<th></th>
<th>Solid wire</th>
<th>Stranded wire</th>
<th>Ferrules with plastic sleeve</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 to 2.5mm²</td>
<td>0.5 to 2.5mm²</td>
<td>0.5 to 2.5mm²</td>
<td></td>
</tr>
<tr>
<td>AWG20 to AWG14</td>
<td>AWG20 to AWG14</td>
<td>AWG20 to AWG14</td>
<td></td>
</tr>
</tbody>
</table>

2. Wire end processing

(1) Connecting the wire directly
   (a) Twist the end of the stranded wire. Make sure there are no wire whiskers.
   (b) Do not solder the wire end.

(2) Using a ferrules with plastic sleeve to connect the wire
   A wire with a too thick of a wire sheath may not fit the insulation sleeve. Refer to the outline drawing for how to select the proper size wire.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Crimper type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phoenix Contact Inc.</td>
<td>Al 0.75-8BU (0.5 to 0.75mm²)</td>
<td>CRIMPFOX UD6</td>
</tr>
<tr>
<td></td>
<td>Al 1.0-8RD (0.75 to 1.0mm²)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Al 1.5-8BK (1.0 to 1.5mm²)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Al 2.5-8BU (1.5 to 2.5mm²)</td>
<td></td>
</tr>
</tbody>
</table>

3. Tools

Use a small driver with a straight, untapered blade as shown on the right to tighten the power terminals.
7.1.2 Wiring example

Connect the power supply to the power terminals on the back panel of the GOT.

![Wiring Diagram]

7.1.3 GOT's ground

1. Grounding the GOT and other devices

   Make sure to carry out the followings for grounding.
   - Carry out the independent grounding if possible.
     Provide class D (class 3) grounding. (Ground resistance must be 100Ω or less.)
     - If the independent grounding is impossible, carry out the shared grounding as shown in fig.2) below.

   ![Grounding Diagram]

   - Use the cable of 2mm² or longer for grounding.
     Set the grounding point closer to the GOT to make the grounding cable short as possible.
7.1.4 The cause of malfunctions related wiring/Remedy

Grounding of the GOT may cause electric potential difference and noise interference, which may result in GOT malfunctions. These problems may be resolved by taking the following measures.

1. Wiring path of the GOT’s ground cable and power line

   Bundling the GOT’s ground cable and power line together can cause interference noise, which may result in malfunctions. Keeping the GOT’s ground cable and power line away from each other will help minimize noise interference.

   ![Diagram showing good and bad wiring configurations](image)

   Good: Wiring the ground cable away from the power cable
   Bad: Bundling the ground cable and the power cable

2. Connecting the ground cable from the panel that houses control equipment to the panel to which the GOT is grounded

   When running a single ground cable from the panel that houses such piece of control equipment as a sequencer to the panel to which the GOT is grounded, the ground cable may have to be directly connected to the terminal on the GOT.

   ![Diagram showing connection configuration](image)

   If electric potential difference between the ground points created by it causes malfunctions, lowering the voltage as shown in Remedy 1 below may solve the problem.
• Remedy 1 (Refer to the figures Remedy 1-1 and 1-2 below.)
If the electric potential difference between the ground cable and the panel that houses the GOT is creating problems, connect the ground cable to the panel also.
If the wiring method as shown in Remedy 1-1 is not feasible, follow Remedy 1-2.

If taking Remedy 1 worsens noise interference, taking Remedy 2 may alleviate it.

• Remedy 2 (Refer to the figures Remedy 2-1 and 2-2 below.)
Attach a ferrite core to the cable if noise from the GOT panel has adverse effects on the GOT when Remedy 1 is taken.
Wind the wire around the ferrite core several times (approx. 3times), if a ferrite core is used.
If the wiring method as shown in Remedy 2-1 is not feasible, follow Remedy 2-2.
7.2 Wiring Inside and Outside the Panel

7.2.1 Wiring inside

Run power lines, servo amplifier drive wires, and communication cables so that they do not cross each other. Noise interference that is generated by cables that cross each other may cause malfunctions. Surge suppressors are an effective way to filter out surge noise that is generated from no fuse breakers (NFB), electromagnetic contactors (MC), relays (RA), solenoid valves, and induction motors. Refer to the section to follow for surge killers.

7.2.2 Outside the panel

To pull the power line and communication cable out of the panel, make two pullout holes away from each other and pull the cables through. Putting both cables through the same pullout hole will increase noise interference.

Keep the power line and communication cable inside the duct at least 100mm away from each other. If that is not possible, the use of a metal separator inside the duct can reduce noise interference.
### 7.2.3 Attaching surge killers to control equipment

If communication errors happen in synch with the on/off signals from certain control equipment (referred to as "load" hereafter) such as no fuse breakers, electromagnetic contactors, relays, solenoid valves, and induction motors, surge noise interference is suspected. If this problem happens, keep the ground cable and communication cable away from the load. If that is not possible, an installation of a surge killer will help reduce noise interference. Place the surge killer as close to the load as possible.

**Remedy for AC inductive load**

- Keep the ground cable and communication cable away from each other.
- Place the surge killer near the load.

```
Output equipment such as PLC output unit
```

**Remedy for DC inductive load**

- Keep the ground cable and communication cable away from each other.
- Place the surge killer near the load.

```
Output equipment such as PLC output unit
```
8. OPTION

8.1 SD Card

The SD card is used to transfer the OS or project data and to save the data of the alarm history function. For details, refer to the following.

15. CONTROL OF VARIOUS DATA (DATA CONTROL)

8.1.1 Applicable SD card

The following SD cards are applicable for GOT.

<table>
<thead>
<tr>
<th>Model</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1MEM-2GBSD</td>
<td>SD memory card 2GB</td>
</tr>
<tr>
<td>L1MEM-4GBSD</td>
<td>SDHC memory card 4GB</td>
</tr>
<tr>
<td>NZ1MEM-2GBSD</td>
<td>SDHC memory card 2GB</td>
</tr>
<tr>
<td>NZ1MEM-4GBSD</td>
<td>SDHC memory card 4GB</td>
</tr>
<tr>
<td>NZ1MEM-8GBSD</td>
<td>SDHC memory card 8GB</td>
</tr>
<tr>
<td>NZ1MEM-16GBSD</td>
<td>SDHC memory card 16GB</td>
</tr>
<tr>
<td>-</td>
<td>Commercially-available SD card*1</td>
</tr>
</tbody>
</table>

*1 Some models with the operations checked by our company are usable. For the operation-checked models, refer to "Operation Check Results of Third Party SD Cards on GT14 Model" (Hime-T-P-0089) separately available, or contact your local distributor.

8.1.2 Installation/removal procedure of SD card

Install/remove the SD card when the power supply of the GOT is OFF or [Access inhibit] is set in the [SD card access] setting of the GOT.

1. Installation

Step 1. Touch [Main Menu] → [Data] → [SD card access] → [Permissions] to set [Access inhibit].

15.4 SD Card Access
Check that the SD card access LED turns off.
When the SD card access LED is off, the SD card can be installed or removed even when the GOT is on.

Step 2. Insert a SD card into the SD card interface with its front side (nameplate side) outside.

Step 3. Touch [SD card access] → [Access inhibit] to set [Permissions]. Check that the SD card access LED turns on.
2. Removal

**Step 1.** Touch [Main Menu] → [Data] → [SD card access] → [Permissions] to set [Access inhibit].

15.4 SD Card Access
Check that the SD card access LED turns off.
When the SD card access LED is off, the SD card can be installed or removed even when the GOT is on.

**Step 2.** Push the SD card all the way inside and leave your finger once, then remove the SD card.

---

**POINT**

**Precautions when removing the SD card**
- Do not pull out the SD card or power OFF the GOT while the SD card access LED is lit. To do so may cause data corruption or malfunction.
- When removing the SD card from the GOT, make sure to support the SD card by hand as it may pop out.
  Failure to do so may cause the SD card to drop from the GOT, resulting in a failure or break.
9. UTILITY FUNCTION

Utility is a function, which carries out connection of GOT and controller, screen display and operation method settings, program/data control and self-check etc.

9.1 Utility Execution

For utility execution, utility has to be displayed by installing Boot OS and package data in the C drive (built in flash memory). There are following two methods for installing Boot OS and package data.

1) GT Designer3 → GOT

Via a USB interface or Ethernet interface *1

Installing Boot OS or Package data

- Install directly from GT Designer3

2) GT Designer3 → SD card → GOT

Writing package data

GT Designer3 → SD card *1

Installing package data

GT Designer3 → SD card to the GOT

- When GOT is remote, install using SD card easily

Refer to the following for the installation which uses GT Designer3.

⇒ GT Designer3 (GOT2000) Help

For the installation methods of package data with an SD card, refer to the following.

⇒ 18. BootOS and System Application Installation Using Data Storage
## 9.2 Utility Function List

The items in the following list can be set/operated on the utility screens.

<table>
<thead>
<tr>
<th>Item</th>
<th>Functions overview</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Language</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard I/F</td>
<td>Assigning channel number and communication driver to communication interface</td>
<td>11.1</td>
</tr>
<tr>
<td>GOT IP Address</td>
<td>Configuring GOT Ethernet setting</td>
<td>11.2</td>
</tr>
<tr>
<td>Ethernet communication</td>
<td>Displaying the contents of Ethernet setting, changing the host</td>
<td>11.3</td>
</tr>
<tr>
<td>Comm. Monitor</td>
<td>Checking the serial communication port communication</td>
<td>11.4</td>
</tr>
<tr>
<td>Ethernet check</td>
<td>Checking the Ethernet communication port communication</td>
<td>11.5</td>
</tr>
<tr>
<td>Transparent mode</td>
<td>Setting the channel No. to be used for the communication for the FA transparent function</td>
<td>11.6</td>
</tr>
<tr>
<td>Keyword</td>
<td>Setting or deleting sequence program protection key words and canceling sequence program protection status for the FXCPU connection</td>
<td>11.7</td>
</tr>
<tr>
<td><strong>Comm. Setting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GOT setup</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>Setting the title display period</td>
<td>12.1</td>
</tr>
<tr>
<td>Operation</td>
<td>Setting the screen save time</td>
<td></td>
</tr>
<tr>
<td>Security Setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security level</td>
<td>Changing the security level</td>
<td>13.1</td>
</tr>
<tr>
<td>Operator</td>
<td>Operator management</td>
<td>13.2</td>
</tr>
<tr>
<td>Operator management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Login/Logout</td>
<td></td>
<td>13.3</td>
</tr>
<tr>
<td><strong>Time setting</strong></td>
<td></td>
<td>14.1</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS Information</td>
<td>OS information</td>
<td>15.2</td>
</tr>
<tr>
<td>Alarm info.</td>
<td>Deleting or copying alarm log files</td>
<td>15.3.1</td>
</tr>
<tr>
<td>Recipe info.</td>
<td>Converting alarm log files in G1A format → CSV/TXT format</td>
<td></td>
</tr>
<tr>
<td>Logging info.</td>
<td>Converting recipe files in G1P format → CSV/TXT format</td>
<td>15.3.2</td>
</tr>
<tr>
<td>Image file</td>
<td>Deleting or copying hard copy files</td>
<td>15.3.3</td>
</tr>
<tr>
<td>SD card access</td>
<td>Setting the access permission of the SD card</td>
<td>15.4</td>
</tr>
<tr>
<td>SD card format</td>
<td>Formatting the SD card</td>
<td>15.5</td>
</tr>
<tr>
<td>Clear data</td>
<td>Clearing the project data and resource data on the GOT</td>
<td>15.6</td>
</tr>
<tr>
<td>Data copy</td>
<td>Transferring the project data or OS to the SD card</td>
<td>15.7</td>
</tr>
<tr>
<td>Backup/restore</td>
<td>Setting the backup and restoration</td>
<td>15.8</td>
</tr>
<tr>
<td><strong>Debug</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device monitor</td>
<td>Device monitor of PLC, test function, current value change of the buffer memory and the buffer memory monitor of intelligent module</td>
<td>16.1</td>
</tr>
<tr>
<td>FX list editor</td>
<td>Changing parameters and sequence program of FX PLC</td>
<td>16.2</td>
</tr>
<tr>
<td>FX3U-ENET-ADP</td>
<td>Configuring the communication setting for FX3U-ENET-ADP stored in the FXCPU</td>
<td>16.3</td>
</tr>
<tr>
<td><strong>Maintenance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touch panel calibration</td>
<td>Displaying the screen for cleaning the display</td>
<td>17.1</td>
</tr>
<tr>
<td>Touch panel check</td>
<td>Checking the touch panel operation</td>
<td>17.2</td>
</tr>
<tr>
<td>Clean</td>
<td>Displaying the screen for cleaning the display</td>
<td>17.3</td>
</tr>
</tbody>
</table>


9.3 Utility Display

To display setting screens for each utility, the main menu has to be displayed first.

(1) **Main menu**

The menu items that can be set at the GOT utility are displayed. Touching a menu item in the main menu will display the setting screen or following selection screen for the item.

(2) **System message switch button**

This button switches the language used for the utility or system alarms. When touching the [Language] button, the Select Language screen is displayed.

**Step 1.** Touch the language button of a desired language and touch the [OK] button to select the language.

**Step 2.** Touching the [×] button switches the language on the utility to the selected one.
POINT

(1) When starting the GOT without selecting any language or the selected language and the installed fonts are not matched

The following screen will be displayed. Touching the button of a desired language restarts the GOT and the language is switched to the selected one.

(2) Selectable languages

The system message switch button is displayed only for the selectable languages. The selectable languages differ depending on the fonts installed in the GOT. For the relation between the selectable languages and the fonts, refer to the following.

➡️ GT Designer3 (GOT2000) Help

(3) System language switching using the device

The system language can be switched using the system language switching device set with GT Designer3. For the setting method of the system language switching device, refer to the following.

➡️ GT Designer3 (GOT2000) Help
### 9.3.1 Display operation of main menu

The following four types of operation can display the main menu.
(Display the main menu after installing the standard monitor OS from GT Designer3 to the GOT built in flash memory.)

1. **When project data is undownloaded**
   After the GOT is turned on, a dialog box for notifying of absence of project data is displayed. After the dialog box is displayed, touch the [OK] button to display the main menu.

2. **When touching utility call key**
   If you touch the utility call key while user-created screen is displayed, the main menu is displayed.
   The utility call key is set in the position on the GOT screen upper left corner at factory shipment.

   *The utility function windows appear in the horizontal format, and this format cannot be changed.*

   The utility call key can be set by the GOT utility or GT Designer3.
   For the setting method of the utility call key, refer to the following.
   ➤ 12.2.5 Setting the utility call keys
   ➤ GT Designer3 (GOT2000) Help

### POINT

1. **Prohibited simultaneous 2-point presses**
   Do not touch 2 points or more on the GOT screen simultaneously. Touching 2 points or more simultaneously may activate a part other than the touched point.

2. **Press time of the utility call key**
   When having set [Press time] of the utility call key setting screen to other than "0 (s)", keep pressing the touch panel for the period set to [Press time] or more before leaving the finger from the touch panel.
   For utility call key setting, refer to the following.
   ➤ 12.2.5 Setting the utility call keys

3. **When the utility call key is not set**
   Even when the utility call key is not set (set to the zero point), you can display the main menu by performing the following operation.
   • Pressing the special function switch set on the user-created screen
(3) **When touching special function switch (utility)**

If you touch the special function switch (utility) while user-created screen is displayed, the main menu is displayed. The special function switch (utility) can be set as a touch switch that is displayed on a user-created screen by GT Designer3.

For the details of the special function switch, refer to the following.

➢ GT Designer3 (GOT2000) Help

**POINT**

**When limiting the display and operation of the utility**

When limiting the display and operating users, set a password to the GOT using GT Designer3. If a user tries to display the main menu of the utility, the password is displayed. Refer to the following for the details related to the password setting.

➢ GT Designer3 (GOT2000) Help
9.3.2 Utility basic configuration

The basic configuration of utility is as follows.

1. **Title display**
   - The screen title name is displayed in the title display part.

2. **Close/Return button**
   - When a middle screen of the layers is displayed, if the [×] (Close/return) button in the right corner of the screen is touched, it returns to the previous screen.
   - If this button is touched when directly displayed from the monitor screen, the screen is closed and returns to the monitor screen.

3. **Scroll button**
   - For screens in which the content does not fit on one screen page, there is a right or down scroll button on the screen.
     - ▲ ▼ ▶ ◀ Scroll one line/column.
     - ▲ ▼ ◀ ▶ Scroll window.
### 9.3.3 Basic operation of settings change

1. Change of setting value

   (1) **Setting item, select button**
   - Touch the select button to change the settings.
   - The setting methods differ depending on the setting items.
   - The following types of setting method are available.
     - **(a) Switching the setting value**
       - The button repeats the setting value every time it is pressed.
     - **(b) Enter the setting value with a keyboard.**
       - Use these keys to enter numerical values. Touch the button to display a keyboard on the GOT screen.
       - For the keyboard operations, refer to the next page.
     - **(c) Move to another setting screen.**
       - Touch the button to move to each setting screen.
       - For the setting method of each setting item, refer to the setting operation of each setting screen.

   (2) **[ ] (Close/Return) button**
   - Reflect or cancel the changed settings.
     - **(a) [ ] (Close/Return) button**
       - Touching this button closes the screen. Depending on the setting item, the GOT restarts.
       - Touch the [ ] button, and then the dialog box shown below is displayed.
       - (If no setting is changed, the dialog is not displayed.)
       - Operate following the message of the dialog box.
2. Keyboard operations

**Step 1.** Touch the numerical value to be changed.

**Step 2.** The keyboard for entering numerical values and a cursor are displayed. The display position of the keyboard differs depending on the position of the touched numerical value. (The keyboard is displayed at a position that does not disturb users to input numerical values.)

**Step 3.** Input numerical value by the keyboard.
- [0] to [9] Key: Enter numerical values.
- [Enter] Key: Completes the numerical value input and closes the keyboard.
- [Cancel] Key: Cancels the numerical value input and closes the keyboard.
- [Del] Key: Deletes one character.
- [AC] Key: Deletes all characters.
- [*] key and the keys which are not mentioned do not function.

**Step 4.** Touching the [Enter] key completes the numerical value input and closes the keyboard.
10. LANGUAGE SETTING (LANGUAGE)

10.1 Display language setting

10.1.1 Display language setting function

This function allows display language selection. The items which can be set are shown below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Setting range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Display language in which the utility functions and dialog windows are displayed can be selected or confirmed in this menu</td>
<td>Japanese/English/Chinese &lt;At factory shipment: Chinese&gt;</td>
</tr>
</tbody>
</table>

10.1.2 Language setting operation

1. Language

**Step 1.** Touch [Language] to bring up the set up screen.

**Step 2.** Select a display language by touching the corresponding button.

**Step 3.** After changing the setting, touch the [x] button. The setting is saved and the setting screen is closed.
Switching the display language of the utility by devices
Any device can be used for switching the display language of the utility. For details, refer to the following.

➤ GT Designer3 (GOT2000) Help
When using devices to switch the display language of the utility, it does not change even if the display language is switched from the GOT utility screen.
11.1 Standard I/F Setting

11.1.1 Standard I/F functions

<table>
<thead>
<tr>
<th>Item</th>
<th>Functions overview</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard I/F</td>
<td>Assigning channel number and communication driver to communication interface</td>
<td>11.1</td>
</tr>
<tr>
<td>GOT IP Address</td>
<td>Configuring GOT Ethernet setting</td>
<td>11.2</td>
</tr>
<tr>
<td>Ethernet communication</td>
<td>Displaying the contents of Ethernet setting, changing the host</td>
<td>11.3</td>
</tr>
<tr>
<td>Comm. Monitor</td>
<td>Checking the serial communication port communication</td>
<td>11.4</td>
</tr>
<tr>
<td>Ethernet check</td>
<td>Checking the Ethernet communication port communication</td>
<td>11.5</td>
</tr>
<tr>
<td>Transparent mode</td>
<td>Setting the channel No. to be used for the communication for the FA transparent function</td>
<td>11.6</td>
</tr>
<tr>
<td>Keyword</td>
<td>Setting or deleting sequence program protection key words and canceling sequence program protection status for the FXCPU connection</td>
<td>11.7</td>
</tr>
</tbody>
</table>

11.1.2 Standard I/F display operation

- Touch [Comm. Setting].
- Touch [Standard I/F].

Main Menu
- Standard I/F
- GOT IP Address
- Ethernet communication
- Comm. Monitor
- Ethernet check
- Transparent mode
- Keyword
11.1.3 Display contents of standard I/F

Described below are the display items on the standard I/F setting menu and their functions.

1. Display item

(1) Standard interface display BOX
The standard interface includes the following four types.
- Standard I/F-1(RS422): For communication with PLC, microcomputer and other equipment
- Standard I/F-2(RS232): For communication with PLC, PC (drawing software), modem, other equipment, bar code reader and transparent
- Standard I/F-3(USB): For communication with PC (drawing software) and transparent
- Standard I/F-4(Ethernet): For communication with PC (drawing software) and other equipment

(2) Channel No. specification menu BOX
Set a channel number to be used by the standard interface.

For the detail of the drivers which can be assigned to each channel, refer to this section (3).

0: Set when the communication interface is not used.
1, 2: Set when connecting to a controller.
8: Set when connecting to a bar code reader or RFID.
9:*1 Set when connecting to a PC (drawing software).
*: Set this channel when the gateway function (except when the connection with controllers is the Ethernet connection) or the Ethernet download function is used.

* "9" is automatically set to the standard I/F-3(USB).
11.1 Standard I/F Setting

(3) Driver display BOX
(a) The driver display box displays the names of communication drivers assigned to channels or the communication drivers set in the communication settings of drawing software. For details of the communication drivers to be displayed, refer to the following.

⇒ GT Designer3 (GOT2000) Help

(b) "Disuse" is displayed in the driver display box in the following cases:
   • The communication driver is not installed.

⇒ 15.2 OS information
   • "0" is set in the channel number specification menu box.

(c) The channel number of the standard I/F-3(USB) is fixed to "9".

(4) Drv button
Displays the driver setting screen.
Select the driver to use on the driver setting screen.

⇒ 11.1.6 Driver setting operation

The Drv button is displayed in the following case.
• When a channel number other than channel 0 or 9 is set to the standard I/F-1, standard I/F-2, and standard I/F-4

POINT

Precautions for communication between GOT and connected devices
(1) Installing [Communication driver] and downloading [Communication Settings]
   To perform communication with the connected device, the following actions are necessary.
   1) Installing communication drivers (Up to 2 drivers)
   2) Assigning channel numbers and communication drivers to communication interfaces
   3) Downloading contents (project data) assigned in step 2)
   Perform 1), 2) and 3) with drawing software.

For details, refer to the following.

⇒ GT Designer3 (GOT2000) Help

(2) When the communication settings have not been downloaded
   If the communication settings have not been downloaded with drawing software, set the communication settings on the drawing software or in the GOT utility screen.
11.1.4 Detail information setting operation

1. For Standard I/F-1(RS422) and Standard I/F-2(RS232)

**Step 1.** Touch each driver display box of the standard I/F-1 and standard I/F-2.

**Step 2.** The screen jumps to the detailed information screen and the communication parameter will appear.

**Step 3.** Touch the numerical values of baud rate to switch them repeatedly.

Ex. 4800bps → 9600bps → 19200bps

The numerical values are set using the ten-key depending on the setting.

- "0" to "9": Use these keys to enter numerical values.
- Enter "0" to disable the screen saver function.
- "ESC": Closes the ten-key window without saving any value entered.
- "AC": Deletes the entire string of numerical characters that are being entered.
- "DEL": Deletes a digit from a string of numerical characters that are being entered.
- "ENT": Enters the value for the clock that has been entered and closes the ten-key pad window.
- "+/-": Switches between positive and negative values (Only positive values are valid for the clock setting.)
- ".": Invalid key (not used)
**Communication parameters**

The types of items that are in the communication parameter setting menu depend on the type of communication driver that is installed on the GOT in use. Refer to the section below for the setting contents of various drivers.

- **GT Designer3 (GOT2000) Help**

---

Step 4. Touch the [×] button to display the window confirming whether to save the settings.

Step 5. Touch the [YES] button to save the settings and restart. Touch the [NO] button to discard the changes.
2. For Standard I/F-4(Ethernet)

Step 1. Touch the driver display box of a communication parameter to be set.

Step 2. The screen is switched to the communication detail setting. Set the communication parameter on this screen.

GOT IP address setting

⇒ 11.2 GOT IP Address Setting

Step 3. When the [x] button is touched, it returns to the previous screen.

Step 4. Touch the [x] button to display the window confirming whether to save the settings.

Step 5. Touch the [YES] button to save the settings and restart. Touch the [NO] button to discard the changes.

POINT

Communication parameter setting by drawing software

Set the communication parameter for each communication driver by selecting [Common] → [Controller Setting].

⇒ GT Designer3 (GOT2000) Help
11.1.5 Channel setting operation

1. Channel number setting operation

**Step 1.** Touch the channel No. specification menu box to be set.

**Step 2.** When the channel setting window appears, select the channel number.

**Step 3.** When the channel number is selected, the settings are fixed and the window returns to the previous one. Therefore, touch the [×] button.

**Step 4.** Touch the [×] button to display the window confirming whether to save the settings.

**Step 5.** Touch the [YES] button to save the settings and restart. Touch the [NO] button to discard the changes.
11.1.6 Driver setting operation

1. Driver setting operation

Step 1. Touch [Drv] button to bring up the driver setting window.

Step 2. The available driver names are displayed on the driver setting screen. Select the driver to use.

Step 3. When the channel number is selected, the settings are fixed and the window returns to the previous one. Therefore, touch the [x] button.

Step 4. Touch the [x] button to display the window confirming whether to save the settings.

Step 5. Touch the [YES] button to save the settings and restart. Touch the [NO] button to discard the changes.
11.2 GOT IP Address Setting

This section describes the GOT Ethernet setting. The GOT Ethernet setting can also be set with drawing software. For details, refer to the following.

➤ GT Designer3 (GOT2000) Help

11.2.1 Standard

The table below shows the communication setting items and setting range.

<table>
<thead>
<tr>
<th>Communication setting items</th>
<th>Setting range</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>0.0.0.1 to 223.255.255.254</td>
<td>If a value outside the setting range is entered, the error message &quot;SET NUMBER IS INCORRECT.&quot; appears.</td>
</tr>
<tr>
<td>Subnet Mask*1</td>
<td>192.0.0.0 to 255.255.255.252</td>
<td></td>
</tr>
<tr>
<td>Default gateway*1</td>
<td>0.0.0.1 to 223.255.255.254</td>
<td></td>
</tr>
<tr>
<td>Per. S/W port No.</td>
<td>1024 to 5010, 5014 to 49152, 49171 to 65534</td>
<td>Set the port number for the GOT download.</td>
</tr>
<tr>
<td>Transparent port No.</td>
<td>1024 to 5010, 5014 to 49152, 49171 to 65534</td>
<td>Set the port number for the transparent of the GOT.</td>
</tr>
</tbody>
</table>

*1 Set the value "0.0.0.0" when not using the subnet mask and default gateway.

11.2.2 Display operation of GOT IP address

Main Menu

Touch [Comm. Setting].

Comm. Setting

Touch [GOT IP Address].

GOT IP Address

Touch [IP Address].

Touch [Subnet Mask*1].

Touch [Default gateway*1].

Touch [Per. S/W port No.].

Touch [Transparent port No.].
11.2.3 Setting operation

Step 1. Touch the numerical part of the octet to be changed among the 1st to 4th octets.

Step 2. When the ten-key pad appears, enter a numerical value in up to 3 digits, and touch the ENT key. If a numerical value outside the setting range is entered, the following error message appears. Enter a numerical value again.

For the details of the setting range, refer to the following.

➠ 16.3.1 Specifications

Step 3. If necessary, change the setting of [Per. S/W port No.] and [Transparent port No.].

Step 4. After the setting change, touch the [×] key.

Step 5. When the screen shown on the left appears, touch the [YES] key.
11.3 Ethernet Communication

11.3.1 Setting function for Ethernet communication

The contents of the Ethernet set in GT Designer3 can be checked.
The setting of the host station can be changed.
For the Ethernet setting, refer to the following.

➤ Got2000 Series Connection Manual for the controller used

11.3.2 Display operation of Ethernet communication
11.3.3 Display contents of Ethernet setting

The following describes the setting items and the display contents of the Ethernet setting.

(1) **Channel select tab**
Channels can be switched.
Switching to the channel which does not have the Ethernet setting is not available.

(2) **Ethernet setting items**
The contents of the Ethernet setting configured in GT Designer3 are displayed.
Changing [Host], [Net No.], [Station No.] and [IP Address] are available.

- ■ Change of host
- ■ Change of Net No.
- ■ Change of station No.
- ■ Change of IP address

**POINT**

(1) How to cancel the change of the setting in the [Ethernet setting] screen.
Cancel the settings changed in the [Ethernet setting] screen with the [Restore default settings] button.
The changed settings remain until they are canceled with the [Restore default settings] button.
The changed settings are not canceled even if writing the project data or system application to the GOT.
When the project data is written to the GOT without canceling the changed settings, those changed settings are reflected to the Ethernet setting of the written project data.
(If the written project data does not have a channel with same Ethernet settings as that of the channel changed in [Ethernet setting] screen, the changed settings are not reflected.)
11.3 Ethernet Communication

- **Change of host**

  **Step 1.** Touch the device to be set as the host.

  **Step 2.** After the setting change, touch the [×] key. When the screen shown on the left appears, touch the [YES] key.

- **Change of Net No.**

  **Step 1.** Touch the Net No. to be changed, and input the network No. to be changed by the numeric keypad displayed.

  **Step 2.** After the setting change, touch the [×] key. When the screen shown on the left appears, touch the [YES] key.
**Change of station No.**

**Step 1.** Touch the station No. to be changed, and input the station No. of the destination Ethernet module to be changed by the numeric keypad displayed.

![Image](image1.png)

**Step 2.** After the setting change, touch the [×] key. When the screen shown on the left appears, touch the [YES] key.

**Touch YES.**

---

**Change of IP address**

**Step 1.** Touch the IP address to be changed, input the destination IP address to be changed by the numeric keypad displayed.

![Image](image2.png)

**Step 2.** After the setting change, touch the [×] key. When the screen shown on the left appears, touch the [YES] key.

**Touch YES.**
11.4 Communication Monitor

11.4.1 Communication monitor functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication port-selection status display</td>
<td>Indicates the connection status of Standard I/F-1 and I/F-2.</td>
</tr>
<tr>
<td>Communication status display</td>
<td>Displays the communication status (SD: send, RD: receive)</td>
</tr>
<tr>
<td>Communication error status display</td>
<td>Displays an error message when a communication error occurs</td>
</tr>
</tbody>
</table>

11.4.2 Communication monitor display operation
Screen display content

(1) Connection status of the communication ports
Indicates the connection status of Standard I/F-1 and I/F-2.
Listed in the table below are display items and the connection status (channel number).

<table>
<thead>
<tr>
<th>Display item</th>
<th>Channel number</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLC</td>
<td>Ch1</td>
<td>&quot;PLC&quot; appears when connected to a controller (PLC or microcomputer)</td>
</tr>
<tr>
<td>Barcode</td>
<td>Ch8</td>
<td>&quot;BCR&quot; appears when connected to a bar code reader</td>
</tr>
<tr>
<td>TRANS.</td>
<td>Ch9</td>
<td>&quot;TRANS.&quot; appears when the controller that is allocated to one of the communication ports supports the transparent mode. &quot;TRANS.&quot; automatically changes to &quot;PC&quot; when communicating with drawing software</td>
</tr>
<tr>
<td>Host(PC)</td>
<td>Ch9</td>
<td>&quot;PC&quot; appears when the controller that is allocated to one of the communication ports does not support the transparent mode</td>
</tr>
<tr>
<td>Printer</td>
<td>ChA</td>
<td>Appears when connected to a printer.</td>
</tr>
</tbody>
</table>

(2) Communication status
Displays the communication status of each communication port.
The SD and RD symbols appear in white on red ( , ) while data are being sent or received, and in black on gray ( , ) at other times. They may appear lit depending on the communication status.
The SD and RD symbols on the screen indicate normal communication or cable disconnection.

Setting example

<table>
<thead>
<tr>
<th>Port</th>
<th>Channel number</th>
<th>Controller type</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/F-1</td>
<td>Ch1</td>
<td>MELSEC-FX</td>
</tr>
<tr>
<td>I/F-2</td>
<td>Ch8, Ch9</td>
<td>-</td>
</tr>
</tbody>
</table>

(a) [During normal communication (with connection to a device that supports the transparent mode)]

```
I/F-1  PLC
[NO ERROR]
MELSEC-FX
```

The SD and RD symbols for I/F-1

(b) [When the connecting cable with the controller is disconnected]

```
I/F-1  PLC
[TIME OUT]
MELSEC-FX
```

Only the SD symbol next to I/F-1 blinks.
### Communication error status

Communication error status of each port is displayed on this screen. The following table describes the communication status that each display item shows.

<table>
<thead>
<tr>
<th>Display item</th>
<th>Status</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO ERROR</td>
<td>No error</td>
<td>Communication is executed normally.</td>
</tr>
<tr>
<td>ERR Ovr.</td>
<td>Overrun error</td>
<td>The receive data is sent continuously with a short interval.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Let the baud rate (communication speed) be equivalent between the GOT and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>counterpart equipment.</td>
</tr>
<tr>
<td>ERR Frm.</td>
<td>Framing error</td>
<td>The communication frames of GOT and PLC are inconsistent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Confirm the communication settings of GOT and PLC, such as data length,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>stop bit and baud rate.</td>
</tr>
<tr>
<td>ERR Prt.</td>
<td>Parity error</td>
<td>The parity check conditions of GOT and PLC are inconsistent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Let the parity check condition (odd or even) of GOT and PLC be consistent.</td>
</tr>
<tr>
<td>ERR Text</td>
<td>Text error</td>
<td>The sum data is inconsistent. Or the contents of the receive data are not</td>
</tr>
<tr>
<td></td>
<td></td>
<td>consistent with the send command from the GOT.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Let the communication settings and contents of data be consistent between</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the GOT and counterpart equipment. (If NAK is received while the GOT is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>connected to the microcomputer board, a text error occurs.)</td>
</tr>
<tr>
<td>TIME OUT</td>
<td>Communication timeout</td>
<td>Though receiving is started, receive data is not sent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check the wiring between the GOT and its communication target.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(When the GOT is connected to the microcomputer board, confirm the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>terminator, CR, wiring, etc.)</td>
</tr>
<tr>
<td>ERR Line</td>
<td>Control line error</td>
<td>The control line is not operating correctly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Confirm the wiring of the control line.</td>
</tr>
<tr>
<td>ERR Cmd.</td>
<td>Command error</td>
<td>A command contained in the receive data is not consistent with the send</td>
</tr>
<tr>
<td></td>
<td></td>
<td>command from the GOT.</td>
</tr>
</tbody>
</table>
11.5 Ethernet Check

1. **Ethernet check function**
   The Ethernet status check function sends a ping to check the connection status of Ethernet.

2. **Display operation of Ethernet check**

   - Touch [Debug].
   - Touch [Ethernet check].
   - Ethernet check
3. Operation of Ethernet status check

- **Step 1.** If the select button of [Destination IP] is touched, a keyboard is displayed. Enter the IP address of the other terminal with the keyboard. <Default: 192.168.3.39>

- **Step 2.** If the [Send ping] button is touched, a ping is sent to the IP address entered in [Destination IP]. The timeout time is 5sec.
  - When the communication is completed, the [Response received.] dialog box is displayed.
  - When a communication error occurs, the [Timeout occurred.] dialog box is displayed.
11.6 Setting the Transparent Mode

1. Function of the transparent mode

When using the multi-channel function, the channel No. of a controller to which the FA transparent function is executed can be set. For the multi-channel function and the FA transparent function, refer to the following.

⇒ GOT2000 Series Connection Manual (Mitsubishi Product) For GT Works3 Version1

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Setting range</th>
</tr>
</thead>
<tbody>
<tr>
<td>ChNo.</td>
<td>The channel No. of a controller to which the FA transparent function is executed can be set. (Default: 1)</td>
<td>1/2</td>
</tr>
</tbody>
</table>

2. Display operation the transparent mode setting

3. Operation the transparent mode

Step 1. When the transparent ChNo. (numerical part) on the left is touched, the screen for selecting a communication driver is displayed. Select the channel to execute the FA transparent function.

Step 2. If the [x] button is touched, it returns to the GOT setup screen.
11.7 Keyword

11.7.1 Keyword functions

The operation related to a keyword of the FX series PLC can be performed.

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regist</td>
<td>Keyword is registered.</td>
</tr>
<tr>
<td>Delete</td>
<td>Registered keyword is deleted.</td>
</tr>
<tr>
<td>Clear</td>
<td>Keyword protection is cleared.</td>
</tr>
<tr>
<td>Protect</td>
<td>A keyword with cleared protection is reactivated for protection.</td>
</tr>
</tbody>
</table>

11.7.2 Keyword display operation
11.7.3 Regist

Keyword is registered.

Step 1. Touch "Regist" to display the selection screen for the registration. For the FX series PLC, which is not compatible with Customer Keyword, the keyword entry screen of [Step3] is displayed. Start the operation from [Step3]. For the Customer Keyword compatible models, refer to the manual of the PLC to be used.

Step 2. Select [Keyword] or [Keyword+Custom]. To register only Keyword and 2nd keyword, touch [Keyword]. To register Customer Keyword, touch [Keyword+Custom].

Step 3. Input a keyword. Touch the display part of the keyword to be registered.

Step 4. The keyboard for entering a keyword is displayed. Character types to be input can be changed by touching the [KEY] button. Enter a keyword and touch the [ENT] key. For the keyword, 8 digits from 0 to 9 or A to F must be set.
Step 5. After completing the keyword entry, touch [Next]. When [Keyword+Custom] is selected on the selection screen for the registration, the Customer Keyword entry screen is displayed. Enter it in the same way as for Keyword and 2nd keyword.

Step 6. Set Registration conciliation. Touch Registration conciliation to change the setting contents.

Step 7. After setting Registration conciliation, touch the [Execute] key. The registration of the keyword is completed.

Step 8. The registration of the keyword is completed. Touch [OK].
(1) Selection availability of Registration conciliation

The following table lists the PLCs that can select Registration conciliation.

<table>
<thead>
<tr>
<th>Target PLC</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>When keyword and 2nd keyword are registered</td>
</tr>
<tr>
<td>FX PLC compatible with 2nd keyword&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Registration options&lt;sup&gt;2&lt;/sup&gt; can be selected.</td>
</tr>
<tr>
<td>FX PLC not compatible with 2nd keyword&lt;sup&gt;*&lt;/sup&gt;</td>
<td>-</td>
</tr>
</tbody>
</table>

<sup>*</sup> Refer to the manual for the PLC in use for the models that are compatible with the 2nd keyword.

*2 Registration options can be selected among "R/W Protect", "Write Protect", or "All online operation protection". For access restrictions of each setting, refer to the manual of the PLC to be used.

(2) Selection of keyword protection level

For the devices which can perform the online operation of FX PLC, 3 levels of protection can be set.

When the monitoring or setting change by online devices is needed, set the keyword taking the following into consideration.

(a) When only keyword is registered

Protection level is selected by the head character of keyword.

- All Protect: Set the keyword starting with one of A, D to F, or 0 to 9.
- Read/incorrect write protection: Set the keyword starting with B.
- Erroneous write prohibition: Set the keyword starting with C.

(b) When keyword and 2nd keyword are registered

(3) Applicability of monitoring for each keyword protection level

The applicability of monitoring for each protection level is as follows.

<table>
<thead>
<tr>
<th>Item</th>
<th>When only keyword is registered</th>
<th>When keyword and 2nd keyword are registered</th>
<th>Keyword unregistered/protection canceled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All operation protect</td>
<td>Read/Incorrect write protection</td>
<td>Erroneous write prohibition</td>
</tr>
<tr>
<td>Device monitoring</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Device change</td>
<td>x&lt;sup&gt;1&lt;/sup&gt;</td>
<td>x&lt;sup&gt;1&lt;/sup&gt;</td>
<td>x&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Other than the above</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<sup>1</sup> When the T, C set values are specified indirectly, changing devices is available.

(4) Difference between "All online operation protection" and "All Protect"

When "All online operation protection" is selected, both device display and input by the programming tool or GOT are prohibited.

When "All Protect" is selected, device display and input are possible although operations by the programming tool are all prohibited.
11.7.4 Delete

Registered keyword is deleted.

Step 1. Touch [Delete] to display the keyword entry screen.

Step 2. Input a keyword. Touch the display part of the registered keyword.

<table>
<thead>
<tr>
<th>Target PLC</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX PLC compatible with 2nd keyword</td>
<td>Input a keyword to be deleted.</td>
</tr>
<tr>
<td>FX PLC not compatible with 2nd keyword</td>
<td>Input a keyword to be deleted only into &quot;keyword&quot;.</td>
</tr>
<tr>
<td></td>
<td>&quot;2nd keyword&quot; is ignored.</td>
</tr>
</tbody>
</table>

Step 3. The keyboard for entering a keyword is displayed. Enter a keyword and touch the [ENT] key. Character types to be input can be changed by touching the [KEY] button.

Step 4. After completing the keyword entry, touch [Next].
Step 5. Touch the [Execute] key.

Step 6. The keyword is deleted. Touch [OK].
11.7.5 Clear

To access an FX PLC where a keyword has been registered, keyword protection is cleared.

Step 1. Touch [Clear] to display the keyword entry screen.

Step 2. Input a keyword. Touch the display part of the registered keyword.

<table>
<thead>
<tr>
<th>Target PLC</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX PLC compatible with customer keyword</td>
<td>Input a keyword or customer keyword to clear the protection.</td>
</tr>
<tr>
<td>FX PLC compatible with 2nd keyword</td>
<td>Input a keyword to clear the protection.</td>
</tr>
<tr>
<td>FX PLC not compatible with 2nd keyword</td>
<td>Input a keyword into &quot;keyword&quot; to clear the protection.</td>
</tr>
<tr>
<td></td>
<td>&quot;2nd keyword&quot; is ignored.</td>
</tr>
</tbody>
</table>

Step 3. The keyboard for entering a keyword is displayed. Enter a keyword and touch the [ENT] key. Character types to be input can be changed by touching the [KEY] button.

Step 4. After completing the keyword entry, touch [Next].
Step 5. Touch the [Execute] key.

Step 6. The protection is cleared. Touch [OK].
11.7.6 Protect

A keyword with cleared protection is reactivated for protection. Keyword protection function is valid when the 2nd keyword is registered.

**Step 1.** Touch [Protect] to switch to the keyword protection status.

**Step 2.** The keyword is protected. Touch [OK].
12. DISPLAY AND OPERATION SETTINGS (GOT SET UP)

The setting screens related to the display or operation can be displayed from the utility screen. In the setting screen for display and the setting screen for operation, the following settings can be set.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display settings</td>
<td>Setting the title display period and screen saving time</td>
<td>12.1.1</td>
</tr>
<tr>
<td></td>
<td>Brightness</td>
<td></td>
</tr>
<tr>
<td>Operation settings</td>
<td>Setting buzzer volume, window move buzzer, and key reaction speed</td>
<td>12.2.3</td>
</tr>
<tr>
<td></td>
<td>Touch panel calibration</td>
<td>12.2.4</td>
</tr>
<tr>
<td></td>
<td>Utility call key</td>
<td>12.2.5</td>
</tr>
</tbody>
</table>

12.1 Display Settings

12.1.1 Display setting functions

Setting regarding display is possible. The items which can be set are described below. If touch the each item part, the respective setting becomes possible.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Setting range</th>
</tr>
</thead>
</table>
| Opening time | The title display period at the main unit boot can be set. | 0 to 60 seconds*2  
(At factory shipment: 5 seconds) |
| Screen save time | The period from the user stops the touch panel operation till the screen save function starts can be set. | 0 to 60 minutes  
(At factory shipment: 0 minute) |
| Brightness | Brightness can be adjusted.                  | -                                   |

*1 Even if 0 is set, the title screen is still displayed. The title screen is always displayed for 4 seconds or more (depending on the project data).

POINT

(1) **Display setting by GT Designer3**
Set title display period, screen save time and screen save backlight by selecting [Common] → [GOT Environmental Setting] → [GOT Setup] on GT Designer3.
When change a part of the setting, change the setting by the GOT display setting after downloading the project data.

⇒ GT Designer3 (GOT2000) Help

(2) **Screen save time**
By using the system information function, the screen save function can forcibly enabled from a controller (Forced Screen Saver Disable Signal) or the screen saving time set in the utility can be disabled (Automatic Screen Saver Disable Signal).

⇒ GT Designer3 (GOT2000) Help
12.1.2 Display operation of display setting

Main Menu

( 9.2 Utility Function List)

Display

Touch [GOT setup].

Touch [Display].

GOT setup

Display

Opening timer: set
Screen back time: set
Brightness: set
12.1.3 Display setting operations

1. The title display period and screen saving time

**Step 1.** If the setting items (numbers) are touched, a keyboard is displayed. Input numeric with the keyboard.

**Step 2.** Set the title display period with the ten-key pad window and touch "ENT".
2. Brightness

Step 1. Touch [Brightness] to bring up the Brightness setting window.

Step 2. Touch the [+] and [-] buttons to adjust the brightness of the screen.

Step 3. Touch the [x] button to reflect the setting.
12.2 Operation Setting (Settings for Operation)

12.2.1 Operation setting functions

Setting regarding GOT operation can be set. The items which can be set are described below. If touch the each item part, the respective setting becomes possible.

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Setting range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buzzer volume</td>
<td>Buzzer volume setting can be changed.</td>
<td>OFF/SHORT/LONG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(At factory shipment: SHORT)</td>
</tr>
<tr>
<td>Window move buzzer</td>
<td>Whether turn ON/OFF buzzer when move window can be selected.</td>
<td>ON/OFF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(At factory shipment: ON)</td>
</tr>
<tr>
<td>Key reaction</td>
<td>The touch panel sensitivity when touching the GOT screen can be set.</td>
<td>±0 to +120*1</td>
</tr>
<tr>
<td></td>
<td>(For preventing chattering)</td>
<td></td>
</tr>
<tr>
<td>Calibration</td>
<td>Calibrates the touch panel sensitivity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>➤ 12.2.4 Position correction of the touch panel (touch panel calibration setting)</td>
<td>-</td>
</tr>
<tr>
<td>Utility call</td>
<td>Utility call key setting screen can be displayed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>➤ 12.2.5 Setting the utility call keys</td>
<td>-</td>
</tr>
</tbody>
</table>

*1 The more the value set for [Key reaction] is high, the more the key reaction speed slows.

<table>
<thead>
<tr>
<th>&quot;Key reaction&quot; [ms]</th>
<th>Standard (±0)</th>
<th>+10</th>
<th>+20</th>
<th>+40</th>
<th>+80</th>
<th>+120</th>
</tr>
</thead>
</table>

For example, when the GOT recognizes touching the GOT screen once as touching the screen twice, set a higher value for [Key reaction].

**POINT**

**Operation setting by GT Designer3**

Set buzzer volume and window move buzzer volume by selecting [Common] → [GOT Environmental Setting] → [GOT Setup] of GT Designer3. When change a part of the setting, change the setting by the GOT display setting after downloading the project data.

➤ GT Designer3 (GOT2000) Help
12.2.2 Display operation of operation setting

Touch [GOT setup].

Touch [Operation].

Touch the item to be changed.
12.2.3 Setting operation of operation

■ 1. Buzzer volume

Step 1. Touch a setting item to change the setting.

(Buzzer volume: SHORT, LONG, OFF)

Step 2. Touch the [x] button to save the changes.

■ 2. Window move buzzer

Step 1. Touch a setting item to change the setting.

(Window move buzzer: ON, OFF)

Step 2. Touch the [x] button to save the changes.
3. Key reaction setting

Step 1. If touch the setup item, the setup contents *1 are changed.

Step 2. After changing the setting, touch the [×] button.
The setting is saved and the setting screen is closed.

*1 The more the value set for [Key reaction] is high, the more the key reaction speed slows.

<table>
<thead>
<tr>
<th>&quot;Key reaction&quot; [ms]</th>
<th>Standard (±0)</th>
<th>+10</th>
<th>+20</th>
<th>+40</th>
<th>+80</th>
<th>+120</th>
</tr>
</thead>
</table>

For example, when the GOT recognizes touching the GOT screen once as touching the screen twice, set a higher value for [Key reaction].
12.2.4 Position correction of the touch panel (touch panel calibration setting)

1. Touch panel calibration setting function
   Touch panel reading error can be corrected.
   Normally the adjustment is not required, however, the difference between a touched position and the object position may occur as the period of use elapses.
   When any difference between a touched position and the object position occurs, correct the position with this function.

   Before adjustment
   After adjustment
   The [Run] will operate though you intended to touch the [Stop] button.
   The [Stop] button can be touched without fail.

2. Touch panel calibration setting display operation

   Main menu
   GOT setup
   Calibration
   Operation
   Touch [GOT setup].
   Touch [Operation].
   Touch [Calibration].
   Press on the center of mark, exactly.
3. **Touch panel calibration operation**
   Touch [+] displayed on the screen with the finger one by one to make the setting.

   **Step 1.** Touch the center of [+] displayed on the upper left precisely.

   ![Step 1](image)

   **Step 2.** Touch [+] displayed on the lower left.

   ![Step 2](image)

   **Step 3.** Touch [+] displayed on the upper right.

   ![Step 3](image)

   **Step 4.** Touch [+] displayed on the lower right.

   ![Step 4](image)

   **Step 5.** When the precise touch could not be made, touch the [YES] button to make the setting from Step1 again.

   ![Step 5](image)
12.2.5 Setting the utility call keys

1. Utility call key setting function
   The key position for calling the main menu of the utility can be specified.
   For the key position, the specification of 1 point from 4 corners on the screen, or no specification (0 point), can be set.
   By keeping pressing the screen, a setting to switch the screen to the utility is available.
   This prevents a switching to the utility by an unintentional operation.

   **POINT**

   **Operation setting by GT Designer3**
   Set the utility call key by selecting [Common] → [GOT Environmental Setting] → [GOT Setup] from GT Designer3.
   When change a part of the setting, change the setting by the GOT display setting after downloading the project data.
   ➤ GT Designer3 (GOT2000) Help

2. Utility call key display operation

   Main menu
   (9.2 Utility Function List)

   **GOT setup**

   **Utility call**

   **Operation**

   Touch [GOT setup]. Touch [Operation].

   Touch bottoms to set for the Utility call key.
3. Utility call key setting operation

Step 1. Touch ⬅️ or ➤️ displayed at the four corners of the setting screen. The button repeats ⬅️ or ➤️ every time it is pressed. Change the part to be set as a key position to ⬅️. For the key position, 0 or 1 point can be specified.

Step 2. When setting 1 point, specify the time to switch to the utility in case of keeping pressing the key position. Touch the time input area.

Step 3. Touching the input area displays a keyboard. Input numeric with the keyboard.

Step 4. Touch the [x] button to save the changes.

POINT

(1) When the utility call key is not set (set to 0-point)
Even when the utility call key is not set (set to the zero point), you can display the main menu by performing the following operation.
• Pressing the special function switch set on the user-created screen
  ➡️ 9.3.1 Display operation of main menu

(2) Precautions on using the alarm popup display
When [Display Position Switching] is set to [Yes] in the alarm popup display setting, set either of the following for the utility call key.
Setting the position of the utility call key to the upper-right or lower-left corner
Setting [Press Time] of the utility call key to 1 or more seconds
When [Press Time] is set to 0 and the key position is set to the lower-left corner, the operation is as described below. If the positions of the key and the alarm popup display overlap, the utility screen appears by switching the display position of the alarm popup display.
For the alarm popup display, refer to the following.
  ➡️ GT Designer3 (GOT2000) Help

(3) When limiting the display and operation of the utility
When limiting the display and operating users, set a password to the GOT using GT Designer3. If a user tries to display the main menu of the utility, the password is displayed. Refer to the following for the details related to the password setting.
  ➡️ GT Designer3 (GOT2000) Help
12.3 Inherent Information

12.3.1 Setting function for inherent information

Configure inherent information settings.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Setting range</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOT ID No.</td>
<td>Set the ID No. as the inherent information for the GOT.</td>
<td>0 to 32767 &lt;Default: 0&gt;</td>
</tr>
</tbody>
</table>

12.3.2 Display operation of inherent information

12.3.3 Setting operation for inherent information

**Step 1.** If touching the setting items, keyboard is displayed. Input numeric with the keyboard.

**Step 2.** If touch the [×] button, the GOT restarts and operates with the changed settings.
12.4 GOT internal device monitor

12.4.1 Setting the GOT internal device monitor

Set whether to Use/Disuse the GOT internal device monitor of GOT diagnostics.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Setting range</th>
</tr>
</thead>
</table>
| GOT dev. monitor   | Set whether to Use/Disuse the GOT internal device monitor of GOT diagnostics.| Disuse/Use  
<Default: Disuse> |
| GOT device change  | Set whether to Allow/Forbid the GOT internal devices to be changed.         | Forbid/Allow                |
<Default: Forbid>    |

12.4.2 GOT internal device monitor display operation

![Diagram showing the process of setting the GOT internal device monitor]
12.4.3 GOT internal device monitor setting operation

**Step 1.** When using the GOT internal device monitor of GOT diagnostics, touch the setting item and set [Use].

**Step 2.** When allowing the GOT internal devices to be changed, touch the setting item of [GOT device change] and set [Allow].

**Step 3.** After changing the settings, touch the [*] button to save the changes and close the setting window.
13. SECURITY LEVEL AND OPERATOR SETTINGS (SECURITY SETTING)

13.1 Security Level Authentication

1. Security level change functions

Changes the security level to the same security level set by each object or screen switch. To change the security level, enter the password for the security level set with GT Designer3.

GT Designer3 (GOT2000) Help

POINT

Restrictions on screen display

The security level change screen cannot be displayed when project data do not exist in GOT. Change the security level after downloading the project data to GOT.

2. Display operation of security level change

Main Menu

Security setting

Touch [GOT setup].

Touch [Operator].

Security Level Change

Security level

Touch [Level Change].

the password of the changed security level is input.
3. Security level change operation

(1) Input operation of password

Step 1. By touching [0] to [9], [A] to [F] key, the password of the changed security level is input. Character types to be input can be changed by touching the [KEY] button.

Step 2. When correcting the input character, touch [Del] key to delete the correcting character and input the password again.

Step 3. After inputting password, touch the [Enter] key. When the password is not matched, displays the error message.

Step 4. If [OK] button is touched it returns to the password input screen again.

Step 5. If the [×] button is touched, it returns to the security setting screen.

POINT

About forgetting to return to the original level after changing security level temporarily
When use GOT after temporarily changing the security level, do not forget to return the security level to the original level.
### 13.2 Operator Authentication

#### 13.2.1 Operator information management

1. Operator management

   (1) Operator management function

   The function enables displaying a list of the operator information and adding, changing, or deleting the operator information to be used.

   A password for operator authentication can be changed when the password is out of date.

   Functions for the operator authentication (automatic logout time, authentication method, password expiration date, etc.) can be set.

   For details of the operator authentication functions, refer to the following.

   ➤ GT Designer3 (GOT2000) Help

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Reference page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator info.</td>
<td>Enables adding, editing, deleting, importing, and exporting the operator information.</td>
<td>13-3, 13-6</td>
</tr>
<tr>
<td>Add</td>
<td>Add operator information to the GOT.</td>
<td>13-6</td>
</tr>
<tr>
<td>Edit</td>
<td>Edit the operator information stored in the GOT.</td>
<td>13-9</td>
</tr>
<tr>
<td>Delete</td>
<td>Delete the operator information stored in the GOT.</td>
<td>13-10</td>
</tr>
<tr>
<td>Restore</td>
<td>Restore the current operator information to the previous saved one.</td>
<td>13-10</td>
</tr>
<tr>
<td>Import</td>
<td>Import the operator information that is already exported to an SD card to the GOT.</td>
<td>13-11</td>
</tr>
<tr>
<td>Export</td>
<td>Export the operator information stored in the GOT to an SD card.</td>
<td>13-12</td>
</tr>
<tr>
<td>Password change</td>
<td>Enables changing passwords to be used for login and logout in/out of the GOT.</td>
<td>13-13</td>
</tr>
<tr>
<td>Function</td>
<td>Enables setting the automatic logout time and password expiration date.</td>
<td>13-15</td>
</tr>
</tbody>
</table>

2. Display operation of operator management

   ![Diagram showing operator management function](image)
(3) Display example of operator management

(a) Operator information management screen

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Operator Name</td>
<td>Displays operator names.</td>
</tr>
<tr>
<td>(b)</td>
<td>ID</td>
<td>Displays operator IDs.</td>
</tr>
<tr>
<td>(c)</td>
<td>Level</td>
<td>Displays security levels for operators.</td>
</tr>
<tr>
<td>(d)</td>
<td>Update</td>
<td>Displays the last updated dates of the operator information.</td>
</tr>
<tr>
<td>(e)</td>
<td>Operation keys</td>
<td>Execution keys for each function</td>
</tr>
<tr>
<td>(f)</td>
<td>Drive in use</td>
<td>Displays and sets the storage location for imported and exported operator information. To switch the drive, touch the key. (A: Standard SD card) Only when the drive E is installed on the GOT, the user can switch the drive in use.</td>
</tr>
</tbody>
</table>
(b) Operator information edit screen

Touch the [Add] button or touch the [Edit] button with the operator information selected on the Operator information management screen, and then the Operator information edit screen is displayed.

The operator information can be edited.

![Operator information edit screen](image)

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Operator Name</td>
<td>The operator name to be edited is displayed or input an operator name to be added. (Up to 16 alphanumeric characters)</td>
</tr>
<tr>
<td>(b)</td>
<td>Operator ID</td>
<td>The operator ID to be edited is displayed or input an operator name to be added. (Setting range: 1 to 32766, Maximum number of registrations: 255)</td>
</tr>
<tr>
<td>(c)</td>
<td>Level</td>
<td>Displays the security level for the operator or input the security level for an operator to be added. (0 to 15)</td>
</tr>
<tr>
<td>(d)</td>
<td>Password</td>
<td>Input a password. (Up to 16 alphanumeric characters)</td>
</tr>
<tr>
<td>(e)</td>
<td>Expiration</td>
<td>Switches the setting of the item disabled and enabled.</td>
</tr>
<tr>
<td>(f)</td>
<td>External auth</td>
<td>Switches the setting of the item [Disuse] and [Use].</td>
</tr>
<tr>
<td>(g)</td>
<td>Ext.auth. ID</td>
<td>The external authentication ID is displayed or input an external authentication ID. (External authentication ID setting range: alphanumerics*1 4 to 32 digits)</td>
</tr>
<tr>
<td>(h)</td>
<td>Save</td>
<td>Saves the settings.</td>
</tr>
</tbody>
</table>

*1 Since the key window is for hexadecimal format, the setting range can be input in the range of A to F or 0 to 9.
(4) Operator management operation

**Step 1.** Touch [Operator] → [Operator info.].

**Step 2.** The Admin password authentication screen is displayed, and then input the administrator password. Character types to be input can be changed by touching the [KEY] button. When the input is completed, touch the [Enter] key.

**Step 3.** When the administrator password is correctly input, the Operator information management screen is displayed. For operation of operating switches, refer to the following.

- [Add] ➤ This section (4) (a)
- [Edit] ➤ This section (4) (b)
- [Delete] ➤ This section (4) (c)
- [Import] ➤ This section (4) (d)
- [Export] ➤ This section (4) (e)

**Step 4.** Touching the [x] button displayed on the upper right returns to the previous screen.
### 13.2 Operator Authentication

**Add operation**
Add operator information to the GOT.

<table>
<thead>
<tr>
<th>Operator Name</th>
<th>ID</th>
<th>Level</th>
<th>Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Operator</td>
<td>-</td>
<td>-</td>
<td>2015/08/30</td>
</tr>
<tr>
<td>DP001</td>
<td>Y01</td>
<td>10</td>
<td>2015/08/30</td>
</tr>
<tr>
<td>DP002</td>
<td>Y02</td>
<td>11</td>
<td>2015/08/30</td>
</tr>
<tr>
<td>DP003</td>
<td>Y03</td>
<td>12</td>
<td>2015/08/30</td>
</tr>
<tr>
<td>DP004</td>
<td>Y04</td>
<td>13</td>
<td>2015/08/30</td>
</tr>
</tbody>
</table>

**Step 1.** Touch the [Add] button.

**Step 2.** The Operator information edit screen is displayed, and then touch an item to be edited.
(a) OperatorName  
(b) OperatorID  
(c) Level  
(d) Password  
(e) Expiration  
(f) External auth  
(g) Ext-auth. ID

(a) If the operator name is touched, a keyboard is displayed. Input an operator name with the keyboard.  
Character types to be input can be changed by touching the [KEY] button.  
When the input is completed, touch the [ENT] key.

(b) If the operator ID is touched, a keyboard is displayed. Input an operator ID.  
Character types to be input can be changed by touching the [KEY] button.  
When the input is completed, touch the [ENT] key.

(c) If the level is touched, a keyboard is displayed. Input an operator level.  
Character types to be input can be changed by touching the [KEY] button.  
When the input is completed, touch the [ENT] key.  
When the level of the operator being login is changed during editing the operator information, a new level is not reflected until you log out of the GOT once and log in the GOT again.
(d) For changing passwords during editing, touch the password. A keyboard is displayed, and then input a password. When the input is completed, touch the [ENT] key.

When the password input is completed, the New password input confirmation dialog box is displayed. Input the same password.

(e) For switching the setting of [Make a permanent password], touch the [Expiration] dialog box to switch the setting.

[Terminable] ↔ [Permanent]

(f) For using the external authentication ID, touch the [External auth] dialog box to switch the setting.

[Disuse] ↔ [Use]

(g) Touch Ext.auth ID to display the external authentication ID input dialog, and enter the external recognition ID.

When the input is completed, touch the [Enter] key.

When the authentication method is set to "External auth", the external authentication ID can be input with the external authentication device.

**Step 3.** When the [Save] button is touched after all items are input, the input operator information is saved. Touching the [x] button displayed on the upper right returns to the previous screen.
(b) Edit operation
Edit the operator information stored in the GOT.

Step 1. Select the operator information to be edited with touching the operator information.

Step 2. Touch the [Edit] button.

Step 3. The Operator information edit screen is displayed, and then touch an item to be edited.
(a) Level
(b) Password
(c) Expiration
(f) External auth
(g) Ext.auth. ID
For how to edit operator information, refer to the following.
➤ This section (4)

Step 4. When the [Save] button is touched after all items are input, the input operator information is saved. Touching the [×] button displayed on the upper right returns to the previous screen.
Delete the operator information stored in the GOT.

### Step 1.
Select the operator information to be deleted with touching the operator information.

### Step 2.
Touching the [Delete] button deletes the selected operator information. Touching the [x] button displayed on the upper right returns to the previous screen.
(d) Import operation
Import the operator information that is already exported to an SD card to the GOT.

Step 1. Touch the [Import] button.

Step 2. The dialog box shown left is displayed. When the [YES] button is touched, the Admin password authentication screen is displayed. Input the administrator password. Character types to be input can be changed by touching the [KEY] button. When the input is completed, touch the [Enter] key.

Step 3. When the administrator password is correctly input, the dialog box shown left is displayed and the operator information stored in an SD card is imported to the GOT.
(e) Export operation
Export the operator information stored in the GOT to an SD card.

```
<table>
<thead>
<tr>
<th>Operator No.</th>
<th>ID</th>
<th>Level</th>
<th>Update Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP101</td>
<td>100</td>
<td>10</td>
<td>01/01/2020</td>
</tr>
<tr>
<td>OP102</td>
<td>100</td>
<td>11</td>
<td>01/02/2020</td>
</tr>
<tr>
<td>OP103</td>
<td>100</td>
<td>10</td>
<td>01/03/2020</td>
</tr>
</tbody>
</table>
```

Step 1. Touch the [Export] button.

Step 2. The dialog box shown left is displayed.

Step 3. Touch the following buttons according to the output format for the file.

- Binary file: [BINARY] button
- CSV file: [CSV] button

Step 4. The dialog box shown left is displayed. When the [YES] button is touched, the Admin password authentication screen is displayed. Input the administrator password. Character types to be input can be changed by touching the [KEY] button.

When the input is completed, touch the [Enter] key.

Step 5. When the administrator password is correctly input, the dialog box shown left is displayed and the operator information stored in the GOT is exported to an SD card.

(file name: AUTHINF.G2U)
13.2.2 Password change

(1) Password change function
The passwords to be used for the operator authentication can be changed. For the password change, log into the GOT in advance with the operator name corresponding to the password to be changed.

(2) Display operation of password change

Main Menu
Touch [Security setting].

Security setting
Touch [Operator].

Password change
Touch [Password change].

Operator
(3) Password change operation

Step 1. Touch [Security setting] → [Login/Logout] to log into the GOT with the operator ID whose password is to be changed.

Step 2. Touch [Password change] in the operator setting menu, and then the Password change dialog box is displayed.

Step 3. Input the current password on the Password change dialog box. Character types to be input can be changed by touching the [KEY] button. When the input is completed, touch the [Enter] key.

Step 4. Input a new password.

Step 5. After inputting a new password, input the new password again.

Step 6. When the new password is correctly input, the dialog box shown left is displayed and the password is changed.
13.2.3 Function setting

(1) Function setting function
The functions for the operator information can be set. The following items can be set.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Reference page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auth method</td>
<td>The authentication method is fixed to the password authentication.</td>
<td>➤ 13-17</td>
</tr>
<tr>
<td>Auto logout time</td>
<td>The time from when the last time the GOT is operated until when you automatically log out of the got can be set. (1 to 60 minutes, 0 is invalid.)</td>
<td>➤ 13-16</td>
</tr>
<tr>
<td>Expiration date</td>
<td>Set the item for regularly changing the password to be used for the operator authentication. (1 to 1000 days, 0 is invalid.) When the password is out of date after setting the password, the GOT requests the password change.</td>
<td>➤ 13-16</td>
</tr>
</tbody>
</table>

(2) Display operation of function setting

Main Menu
(9.2 Utility Function List)

Security setting

Function

Operator

Touch [Security setting].

Touch [Operator].

Touch [Function].

Touch [Function].
(3) Function setting operation

Step 1. Touch [Operator] → [Function], and then the Admin password authentication dialog box is displayed.

Step 2. When the administrator password is correctly input, the Function setting screen in displayed.
   Touch an item to be set.
   (a) Auto logout time
   (b) Expiration date

   (a) Touch [Auto logout time], and then the Auto logout time edit dialog box is displayed. Input the time.
   When the input is completed, touch the [ENT] key.

   (b) Valid byte count
   Set the valid byte count for external authentication ID.
   (Only available when [External auth] is set as the authentication method.)

Step 3. Touching the [×] button displayed on the upper right returns to the previous screen.
13.3 Login/Logout

To manage the operator or change the password, log into the GOT.

1. Display operation of login/logout

2. Operation of login/logout
   
   (1) Login

   Step 1. Log into the GOT by inputting an operator name and its password.

   (2) Logout

   Step 1. Touch [Security setting] → [Login/Logout], and then the screen shown left is displayed. Touch the [YES] button.
14. CLOCK SETTINGS AND BATTERY STATUS DISPLAY (TIME SETTING AND DISPLAY)

The clock data (date and time) are displayed and set in the clock setting menu.

14.1 Time Setting and Display

14.1.1 Time setting and display functions

Time settings and displaying of the status of GOT built-in battery are possible.

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time setting</td>
<td>Set the current time.</td>
<td>14.1.3 Time setting</td>
</tr>
<tr>
<td>Adjust</td>
<td>Synchronize the clock data of the GOT with the clock data of the controller.</td>
<td>14.1.4 Adjusting the clock</td>
</tr>
<tr>
<td>Local time</td>
<td>Set the time zone of the local time in the clock data of the GOT.</td>
<td>14.1.5 Local time</td>
</tr>
</tbody>
</table>

**POINT**

Changing times

When the time is changed on the Time setting & display screen, the changed time is written in a programmable controller even though [Adjust] or [Broadcast] is set for [Time setting]. As a result, the time of the programmable controller can be changed on the GOT even though [Adjust] is set for [Time setting].

(The clock data of the controller set as [Adjust CH No.] of [Clock data GOT is matched to clock data External (Adjust)] in [GOT Setup] ([Clock Setting]) of GT Designer3 is changed.) For details of [Adjust] and [Broadcast], refer to the following.

➤ GT Designer3 (GOT2000) Help
14.1.2 Clock synchronization method

The following shows the clock synchronization method on the GOT

<table>
<thead>
<tr>
<th>Clock synchronization method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjust</td>
<td>Acquire the clock data of the controller and change the clock data of the GOT.</td>
</tr>
</tbody>
</table>

When the GOT is powered on, set the clock data of the GOT to that of the controller.
Since the GOT does not have to hold the clock data while the GOT is powered off, no battery is required.
To set the controller clock data of the controller, refer to the manual of the controller you use.

**Details of the clock synchronization method**

For the details of the clock synchronization method, refer to the following.

➡ GT Designer3 (GOT2000) Screen Design Manual
14.1.3 Time setting

Set the current time.

1. Time setting

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current time</td>
<td>Carry out the display and setup of GOT clock data.</td>
<td>14.1.3.3. (1) Current time</td>
</tr>
</tbody>
</table>

2. Display operation of the time setting

Touch [Time setting].

![Image showing the main menu and time setting screens]
3. Setting procedure for the time setting

(1) Current time
Carry out the display and setting of GOT clock data.
The setup methods of clock data are shown below.

**Step 1.** Touch either the date or time to be changed.

```
02/21/2000 MON 12:05:20
```

**Step 2.** Enter date or time on the ten-key pad.
The day of the week is displayed automatically according to the input date.
- "0" to "9":
  - Use these keys to enter numerical values
- "ESC":
  - Closes the ten-key window without saving any value entered for the date or time
- "AC":
  - Deletes the entire string of numerical characters that are being entered
- "DEL":
  - Deletes a digit from a string of numerical characters that are being entered
- "ENT":
  - Enters the value for the date or clock that has been entered and closes the ten-key pad window
- "+/-":
  - Switches between positive and negative values. (Only positive values are valid for the date or clock setting.)
- ".":
  - Invalid key (not used)

```
  2016
  7  8  9  AC
  4  5  6  DEL
  1  2  3  +/-
  0  .  ENT
```

**Step 3.** After setting either the date or time, touch the [×] button to save the changes and close the setting window.
## 14.1.4 Adjusting the clock

Synchronize the clock data of the GOT with the clock data of the controller.

### 1. Clock adjustment setting

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Setting range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time setting</td>
<td>Switch the Use/Disuse of Adjust.</td>
<td>Disuse/Use</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Default: Disuse&gt;</td>
</tr>
<tr>
<td>Reference CH No.</td>
<td>Set a reference channel of the external controller.</td>
<td>1 to 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Default: 1&gt;</td>
</tr>
<tr>
<td>Trigger type</td>
<td>Set the trigger type for the clock adjustment.</td>
<td>Trigger type: Rise/Fall/Sampling</td>
</tr>
<tr>
<td></td>
<td>• When selecting [Sampling] for [Trigger type], set the sampling interval for the clock adjustment.</td>
<td>&lt;Default: Sampling&gt;</td>
</tr>
<tr>
<td></td>
<td>• When selecting [Rise] or [Fall] for [Trigger type], information on the device set as a trigger is displayed.</td>
<td>Sampling interval: 1 to 1440 &lt;Default: 60&gt;</td>
</tr>
<tr>
<td>Time zone of target unit</td>
<td>Switch Specified/Unspecified of the time zone of target.</td>
<td>Unspecified/Specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Default: Unspecified&gt;</td>
</tr>
<tr>
<td>Time zone</td>
<td>When selecting [Specify the time zone of target unit], set the time zone.</td>
<td>GMT-12:00 to GMT+13:00 &lt;Default: GMT+9:00&gt;</td>
</tr>
<tr>
<td>Time difference from GMT</td>
<td>Time zone of target is set by specifying the time difference from GMT.</td>
<td>Hour: -12 to 13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minute: 0, 15, 30, or 45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Default: 0 hour 0 minute&gt;</td>
</tr>
</tbody>
</table>

*1 If [Adjust the clock] is deselected or [Trigger Type] is set to [Sampling] in [GOT Setup] in the project data, only [Sampling] is selectable as the trigger type for the clock adjustment in the utility.

*2 If [Adjust the clock] is deselected or [Trigger Type] is set to [Sampling] in [GOT Setup] in the project data, [No setting] is displayed in [Device].

**POINT**

Settings of [Adjust] in the utility

Configure the settings in the utility and in [GOT Setup] on GT Designer3 by the same method.

⇒ GT Designer3 (GOT2000) Screen Design Manual
2. Display operation of the clock adjustment

Main menu

Touch [Time setting].

Time setting (When not using "Adjust")

Touch [Disuse].

Time setting (When using "Adjust")

Touch [Use].

[Diagram of screen flow]
3. Display operation of the clock adjustment

(1) Reference CH No.

Step 1. Touch the setting item to change the selection.

Step 2. After changing the settings, touch the [×] button to save the changes and close the setting window.

(2) Trigger Type

Step 1. Touch the setting item to change the selection.

Step 2. If you select [Sampling], set the sampling interval for the clock adjustment. Touch the entry box on the left side of [Min.] to display a software keyboard. Input a value with the keyboard.

Step 3. After changing the settings, touch the [×] button to save the changes and close the setting window.
(3) Set the time zone of target.

**Step 1.** When specifying the time zone of target, touch the setting item of [Time zone of target].

**Step 2.** Touch the setting item of [Time zone of target].

**Step 3.** Touch the setting item to set the time difference from GMT.

**Step 4.** After changing the settings, touch the [×] button to save the changes and close the setting window.
### 14.1.5 Local time

Set the time zone of the local time in the clock data of the GOT.

#### 1. Local time setting

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Setting range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local time</td>
<td>Switch Specified/Unspecified the time zone in the clock data of the GOT.</td>
<td>Unspecified/Specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Default: Unspecified&gt;</td>
</tr>
<tr>
<td>Time zone of GOT</td>
<td>Set the time zone in the clock data of the GOT.</td>
<td>GMT-12:00 to GMT+13:00/Custom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Default: GMT+9:00&gt;</td>
</tr>
<tr>
<td>Time difference from GMT</td>
<td>[Time zone of GOT] is set by specifying the time difference from GMT.</td>
<td>Hour: -12 to 13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minute: 0, 15, 30, or 45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Default: 0 hour 0 minute&gt;</td>
</tr>
</tbody>
</table>
2. Display operation of the local time

Main menu

Time setting (When using "Local time")

Time setting (When not using "Local time")

Touch [Time setting].

Touch [Unspecified].

Touch the setting item.

Touch [Unspecified].
3. Set the local time.

**Step 1.** Touch the setting item to set the time difference from GMT.

![local time setting](image)

**Step 2.** After changing the settings, touch the [×] button to save the changes and close the setting window.

**POINT**

1. When connecting to an external device which does not have clock function
   If the GOT is connected to an external device (such as a PLC or microcomputer) that has no clock function, setting [Adjust] or [Broadcast] does not synchronize the clock data between the GOT and external device.
   For the list of the PLCs having the clock function, refer to the following.
   ➤ GOT2000 Series Connection Manual for the controller used
   For details of [Adjust] and [Broadcast], refer to the following.
   ➤ GT Designer3 (GOT2000) Screen Design Manual

2. Time setting and battery
   To use the time notification function, connect the GOT built-in battery and then configure the time setting.
   For information on how to connect the GOT built-in battery, refer to the following.
   ➤ GOT2000 Series User's Manual (Hardware)

3. Time display
   The GOT displays the current time to which the local time setting is reflected.
   For the local time setting, refer to the following.
   ➤ 14.1.5 Local time

4. Changing times
   If you have changed the present time of the GOT where the time setting function or the time notification function was being used, the new time setting will be written to the PLC. Thus, you can change the time of the PLC from the GOT even when the time setting function is being used.
   For details of [Adjust] and [Broadcast], refer to the following.
   ➤ GT Designer3 (GOT2000) Screen Design Manual
15. CONTROL OF VARIOUS DATA (DATA CONTROL)

A system application, project data (screen data), or alarm data which is written in the GOT or SD card can be displayed, and the data can be transferred between the GOT and SD card. The format of the SD card is also possible.

15.1 Data Storage Location

15.1.1 Data type and storage location

### 1. System

The data storage location and transferring (write/read) route for each data type are shown below. Also, the data storage locations are shown below.

#### The data of the build in flash memory (Project data, etc.) can be saved.

<table>
<thead>
<tr>
<th>Item</th>
<th>Data type</th>
<th>Storage location</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Boot OS)</td>
<td>Boot OS</td>
<td>Built in flash memory (C drive)</td>
</tr>
<tr>
<td>System application</td>
<td>Basic system application</td>
<td>Standard SD card (A drive)</td>
</tr>
<tr>
<td></td>
<td>Communication driver</td>
<td>Built in flash memory (C drive)*2</td>
</tr>
<tr>
<td></td>
<td>Advanced system application</td>
<td></td>
</tr>
<tr>
<td>Project data</td>
<td>Project data</td>
<td>Standard SD card (A drive)</td>
</tr>
<tr>
<td></td>
<td>(Including recipe setting, alarm conditions, time action, and GOT setup.)</td>
<td>Built in flash memory (C drive)*2</td>
</tr>
</tbody>
</table>

*1 The SD card can be used from Utility.

*2 When using the project data stored in the Standard SD Card (A drive) with the GOT, hold the SD card installed to the GOT.
### 2. At maintenance

#### Data Storage Location

<table>
<thead>
<tr>
<th>Item</th>
<th>Data type</th>
<th>Storage location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm</td>
<td>Alarm data (Advanced alarm log file, alarm log file)</td>
<td>Standard SD card (A drive)</td>
</tr>
<tr>
<td>Recipe</td>
<td>Recipe data (Advanced recipe file, Recipe file)</td>
<td></td>
</tr>
<tr>
<td>Logging</td>
<td>Logging (Logging file)</td>
<td>C drive (Built-in flash memory)</td>
</tr>
<tr>
<td>Hard copy</td>
<td>Image file (Hard copy function)</td>
<td></td>
</tr>
</tbody>
</table>

**POINT**

Checking available space of the storage memory

To save resource data, check available space of the storage memory.
15.1.2 Checking version of basic system application

Confirm the basic system application version carefully when installing the Boot OS and basic system application. When the basic system application is installed, the GOT checks and compares the basic system application version automatically.

1) When install Boot OS
When the Boot OS to be installed has the older major version, GOT displays the installation disapproving message to cancel the installation so that the older version may not be written. (Even when the version of the Boot OS to be installed has the same or later version, the version information and the dialog box for selecting continue/not continue will be displayed.)

2) When install basic system application or communication driver
When a basic system application or communication driver has already been installed, the version information of the basic system application which has been installed and the dialog box for selecting whether to continue the installation or not will be displayed. Moreover, when the different versions will coexist among all applications (basic system application and communication driver) by installing the basic system application, the installation disapproving dialog box will be displayed and the installation process is canceled.

3) When download project data
The GOT automatically compares the version between the project data to be downloaded and the installed basic system application. When the versions are different, the dialog box confirming whether to install the basic system application together is displayed. When downloading the project data from an SD card, storing the project data and basic system application beforehand is recommended. The version of each system application installed in the GOT can be checked by displaying the property of the system application information screen.

For the display operation of the screen, refer to the following.

► 15.2 OS information

POINT
Version confirmation of Boot OS by rating plate
Confirm the version of Boot OS installed in the GOT at product shipment by rating plate of GOT rear face.
15.2 OS information

1. OS information

Each file name or folder name of Boot OS and package data stored in each drive (A: Standard SD card or C: Built-in flash memory) can be displayed in a list. Also, each file can be installed and updated.

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Reference page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information display of files and folders</td>
<td>Displays the kind, name, data size, creation date and time of the file or folder.</td>
<td>15-5</td>
</tr>
</tbody>
</table>

**POINT**

(1) Precautions when basic system application file is used

When the boot drive of the basic system application is set to "A: Standard SD card", a basic system application file cannot be installed or updated.

2. OS information

![Diagram showing the process of accessing OS information]

Touch [Data].

Touch [OS information].
### 3. Display example of system application information

#### OS information Storage file/folder display screen

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Name</td>
<td>Displays the file name or folder name in the selected drive or folder.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When the number of the characters of the file name or folder name exceeds 20, the 21th</td>
</tr>
<tr>
<td></td>
<td></td>
<td>character and later are not displayed.</td>
</tr>
<tr>
<td>(2)</td>
<td>Version information</td>
<td>Displays the software version.</td>
</tr>
</tbody>
</table>
15.3 Resource Data Information

15.3.1 Alarm information

1. Function of alarm information
Advanced alarm log files and alarm log files stored in each drive (A: Standard SD card or C: Built-in flash memory) is displayed. The functions below can be carried out for files. For details of the advanced alarms, refer to the following manual.

GT Designer3 (GOT2000) Help

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Reference page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information display of files and folders</td>
<td>Displays name, data size, creation date and time of file or folder.</td>
<td>15-7, 15-8</td>
</tr>
<tr>
<td>G2A → CSV conversion</td>
<td>Converts the G1A file of an advanced alarm log file to a CSV file.</td>
<td>15-9</td>
</tr>
<tr>
<td>G2A → TXT conversion</td>
<td>Converts the G1A file of an advanced alarm log file to a TXT file.</td>
<td>15-9</td>
</tr>
<tr>
<td>Del</td>
<td>Deletes the file.</td>
<td>15-10</td>
</tr>
<tr>
<td>Copy</td>
<td>Copies the file.</td>
<td>15-11</td>
</tr>
</tbody>
</table>

2. The display operation of alarm information

![Diagram showing the display operation of alarm information]

Select a drive and operate alarm log files

Touch [Data].

Touch [Resource Data].

Select drive

Touch [Alarm info].
3. The display example of alarm information

Alarm information screen

Alarm information: Storage file/folder display screen

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select drive</td>
<td>The drive which displays file or folder can be selected. When an SD card is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not installed, the following drives are not displayed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• SD card: [A: Standard SD card]</td>
</tr>
<tr>
<td>2</td>
<td>Kind</td>
<td>Indicates whether the displayed name is file or folder.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Displays the extension for a file and &quot;DIR&quot; for a folder.</td>
</tr>
<tr>
<td>3</td>
<td>Name</td>
<td>Displays the file name or folder name. For the long file/folder name, entire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>part may not be displayed. Confirm the non-displayed part with the [Copy]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>button, etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➠ 4. Alarm information operation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After confirmation, touch the [Cancel] button to cancel the operation.</td>
</tr>
<tr>
<td>4</td>
<td>Size</td>
<td>Displays the size of the file displayed in Name.</td>
</tr>
<tr>
<td>5</td>
<td>Date, Time</td>
<td>Displays the creation date and time of each file.</td>
</tr>
<tr>
<td>6</td>
<td>Operation switch</td>
<td>Execution switch of each file.</td>
</tr>
</tbody>
</table>

POINT

(1) Display of creation date and time

The creation date and time display is not updated even if a file is created or updated while displaying the alarm information display screen.

If the screen currently displayed is closed (by moving the screen to the folder of the upper hierarchy, etc.) and the same screen is displayed again, the updated contents are displayed.
4. Alarm information operation
(1) The display operation of alarm information

Step 1. If touch a drive of [Select drive], the information of the touched drive is displayed.

Step 2. If touch a folder name, the information of the touched folder is displayed.

Step 3. If touch a folder of ". . " , the information of the folder of the one upper hierarchy is displayed.

Step 4. If touch the \[ \] button of the scrollbar, the screen scrolls up/down by one line.
If touch the \[ \] button, the screen scrolls up/down by one screen.

Step 5. If a file name is touched, the file is selected.

Step 6. For operations of G1A → CSV conversion, G1A → TXT conversion, deletion, copy, and graph, refer to the following:
G1A → CSV, G1A → TXT
⇒ This section (2)
Delete
⇒ This section (3)
Copy
⇒ This section (4)

Step 7. If touch the [x] button, the screen is closed.
(2) **G2A → CSV conversion operation, G2A → TXT conversion operation**

The selected G1A file is converted to a CSV file or TXT file.

**Step 1.** Touch the G2A file to be converted to a CSV file or TXT file.

**Step 2.** Touch [Convert].

**Step 3.** The following dialog box is displayed when touching the following button according to the file type to convert to.
- CSV file: [CSV] button
- TXT file: [TXT] button

**Step 4.** Touch the [OK] button. The file is overwritten with the converted file.
(3) **Deletion operation**  
Deletes the selected file.

**Step 1.** Touch the file to be deleted.

**Step 2.** If touch the [Delete] button, the dialog box mentioned left is displayed.  
If the [YES] button is touched, the file is deleted.  
If the [NO] button is touched, the deletion is canceled.
(4) Copy operation
Copies the selected file.

**Step 1.** Touch the file to be copied.

**Step 2.** If the [Copy] button is touched, the Select drive screen is displayed.

**Step 3.** Select a drive.

**Step 4.** Select the copy destination folder and touch [Execute]. The file is copied.
### 15.3.2 Recipe information

#### Before using recipe information
For writing/reading into/from a controller with this function or editing of recipe files on the personal computer, refer to the following.
Specifications and operating procedure are described.

➤ GT Designer3 (GOT2000) Help

#### 1. Function of recipe information

The recipe file used in the recipe function can be copied, deleted, and output in a file.
In addition, it is possible to writing/reading into/from a controller by using this function, without creating the screen to operate the recipe. (Recipe setting of GT Designer3 is required.)

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Reference page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information display of files and folders</td>
<td>Displays name, data size, creation date and time of file or folder.</td>
<td>➤ 15-14, 15-15</td>
</tr>
<tr>
<td>G2P → CSV conversion</td>
<td>Converts a G1P file of a recipe file to a CSV file.</td>
<td>➤ 15-16</td>
</tr>
<tr>
<td>G2P → TXT conversion</td>
<td>Converts a G1P file of a recipe file to a Unicode text file.</td>
<td>➤ 15-16</td>
</tr>
<tr>
<td>CSV/TXT → G2P conversion</td>
<td>Converts a CSV file or TXT file to a G1P file of a recipe file.</td>
<td>➤ 15-17</td>
</tr>
<tr>
<td>Del</td>
<td>Deletes the file or folder.</td>
<td>➤ 15-18</td>
</tr>
<tr>
<td>Copy</td>
<td>Copies the file.</td>
<td>➤ 15-19</td>
</tr>
</tbody>
</table>
2. Display operation of recipe information

- Touch [Data].
- Touch [Resource Data].
- Touch [Recipe info].
3. Example of advanced recipe information display

(1) Recipe information screen

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Select drive</td>
<td>The target drive can be selected. (Even if an SD card is not installed, this message appears.)</td>
</tr>
<tr>
<td>(2)</td>
<td>Kind</td>
<td>Indicates whether the displayed name is file or folder. Displays the extension for a file and “DIR” for a folder.</td>
</tr>
<tr>
<td>(3)</td>
<td>Name</td>
<td>Displays the file name or folder name. For the long file/folder name, entire part may not be displayed.</td>
</tr>
<tr>
<td>(4)</td>
<td>Size</td>
<td>Displays the size of the file displayed in Name.</td>
</tr>
<tr>
<td>(5)</td>
<td>Date, Time</td>
<td>Displays the creation date and time of each file.</td>
</tr>
<tr>
<td>(6)</td>
<td>Operation switch</td>
<td>Execution switch of each function.</td>
</tr>
</tbody>
</table>

**POINT**

(1) About the displayed file

The files other than that for recipe are not displayed on the recipe information screen.
4. Recipe information operation

(1) Display operation of recipe information

Step 1. If touch a drive of [Select drive], the information of the touched drive is displayed.

Step 2. If touch a folder name, the information of the touched folder is displayed.

Step 3. If touch a folder of ". ..", the information of the folder of the one upper hierarchy is displayed.

Step 4. If touch the \[\ D, V\] button of the scrollbar, the screen scrolls up/down by one line.
   If touch the \[\ A, D\] button, the screen scrolls up/down by one screen.

Step 5. If a file name is touched, the file is selected.

Step 6. For operation of operating switches, refer to the following.
   G2P \(\rightarrow\) CSV, G2P \(\rightarrow\) TXT
   ➤ This section (2)
   CSV/TXT \(\rightarrow\) G2P
   ➤ This section (3)
   Delete
   ➤ This section (4)
   Copy
   ➤ This section (5)

Step 7. If touch the \[\ X\] button, the screen is closed.
(2) **G2P → CSV conversion operation, G2P → TXT conversion operation**

A recipe file (G2P file) is converted to a CSV file or Unicode text file that can be displayed/edited on a personal computer.

**Step 1.** Touch the G2P file to be converted to a CSV file or TXT file.

**Step 2.** Touch [Convert].

**Step 3.** Touch the following button in accordance with destination file type.
- CSV file: [CSV] button
- TXT file: [TXT] button

**Step 4.** Touch the [OK] button. The file is overwritten with the converted file.
(3) CSV/TXT → G2P conversion operation
A CSV file or Unicode text file is converted to a recipe file (G1P file).

Step 1. To select the file, touch the CSV file or TXT text file to be converted to a G2P file.

Step 2. Touch the [Convert] button.

Step 3. If the [OK] button is touched, the file is overwritten with the converted file.
(4) Deletion operation
Folders and files to be used on recipe are deleted.

Step 1. Touch the folder or file to be deleted.

Step 2. If touch the [Delete] button, the dialog box mentioned left is displayed.
If the [YES] button is touched, the file or folder is deleted.
(While executing, [Processing...] message appears on the screen.)
If the [NO] button is touched, the deletion is canceled.
(5) Copy operation
Files to be used in recipe are copied.

Step 1. Touch the file to be copied.

Step 2. If the [Copy] button is touched, the Select drive screen is displayed.

Step 3. Select a drive.

Step 4. Select the copy destination folder and touch [Execute]. The file is copied.
5. Precautions

(1) Precautions for operation

(a) Precautions during folder/file operation (Create/Delete/Copy/File output, etc.)
Even if the access to the SD card is inhibited while the GOT is processing folders and files, the processing continues. (Example: Even if the access to the SD card is inhibited while the GOT is creating a folder, the folder is created.)
Therefore, do not pull out the SD card while the "Processing..." message is on the screen after the access to the SD card is inhibited.

(b) While GOT is accessing to other file (Alarm data, etc)
When folder/file processing for the recipe is executed while the GOT is in access to other file (SD card access LED ON), the GOT executes folder/file processing for the recipe after the processing for other file has completed.
Therefore, it may take some time to finish the process of the recipe folder/file. (The "Processing..." message is displayed on the screen.)

POINT

Estimation of processing time
The process may take time depending on the setting of advanced recipe file to be operated. (The more number of blocks increases, the longer it takes to process recipe folder/file.)
The process for creating the first file may take time depending on the setting of advanced recipe file.
15.3.3 Logging information

1. Function of logging information

Logging files created with the logging function can be copied, deleted or renamed, etc. Without using a personal computer, you can manage logging files on the GOT.

For details of the logging function, refer to the following.

➤ GT Designer3 (GOT2000) Help

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Reference page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information display of files and folders</td>
<td>Displays name, data size, creation date and time of file or folder.</td>
<td>➤ 15-22 15-23</td>
</tr>
<tr>
<td>G2L → CSV conversion</td>
<td>Converts a G1L file of a logging file to a CSV file.</td>
<td>➤ 15-24</td>
</tr>
<tr>
<td>G2L → TXT conversion</td>
<td>Converts a G1L file of a logging file to a Unicode text file.</td>
<td>➤ 15-24</td>
</tr>
<tr>
<td>Del</td>
<td>Deletes the file or folder.</td>
<td>➤ 15-25</td>
</tr>
<tr>
<td>Copy</td>
<td>Copies the file.</td>
<td>➤ 15-26</td>
</tr>
</tbody>
</table>

2. Display operation of logging information

Select a drive and operate logging data files

Touch [Data].

Touch [Logging info].
### 3. Example of logging information display

#### Logging Information

![Logging Information](image)

#### Storage file/folder display screen

![Storage file/folder display screen](image)

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Select drive</td>
<td>The target drive can be selected. (Even if an SD card is not installed, this message appears.)</td>
</tr>
<tr>
<td>(2)</td>
<td>Kind</td>
<td>Indicates whether the displayed name is file or folder.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Displays the extension for a file and &quot;DIR&quot; for a folder.</td>
</tr>
<tr>
<td>(3)</td>
<td>Name</td>
<td>Displays the file name or folder name.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For the long file/folder name, entire part may not be displayed.</td>
</tr>
<tr>
<td>(4)</td>
<td>Size</td>
<td>Displays the size of the file displayed in Name.</td>
</tr>
<tr>
<td>(5)</td>
<td>Date, Time</td>
<td>Displays the creation date and time of each file.</td>
</tr>
<tr>
<td>(6)</td>
<td>Operation switch</td>
<td>Execution switch of each function.</td>
</tr>
</tbody>
</table>

**POINT**

**1. About the displayed file**

The files other than that for logging are not displayed on the logging information screen.
4. Logging information operation

(1) Display operation of logging information

Step 1. If touch a drive of [Select drive], the information of the touched drive is displayed.

Step 2. If touch a folder name, the information of the touched folder is displayed.

Step 3. If touch a folder of ". . ", the information of the folder of the one upper hierarchy is displayed.

Step 4. If touch the button of the scrollbar, the screen scrolls up/down by one line.

If touch the button, the screen scrolls up/down by one screen.

Step 5. If a file name is touched, the file is selected.

Step 6. For operation of operating switches, refer to the following.

G2L → CSV, G2L → TXT

This section (2)

Delete
This section (3)
Copy
This section (4)

Step 7. If touch the [×] button, the screen is closed.
(2) **G2L → CSV conversion operation, G2L → TXT conversion operation**

A logging file (G2L file) is converted to a CSV file or Unicode text file that can be displayed/edited on a personal computer.

**Step 1.** Touch the G2L file to be converted to a CSV file or TXT file.

**Step 2.** Touch [Convert].

**Step 3.** Touch the following button in accordance with destination file type.
- CSV file: [CSV] button
- TXT file: [TXT] button

**Step 4.** Touch the [OK] button. The file is overwritten with the converted file.
(3) Deletion operation
Folder and file to be used on logging are deleted.

**Step 1.** Touch the folder or file to be deleted.

**Step 2.** If touch the [Delete] button, the dialog box mentioned left is displayed. If the [YES] button is touched, the file or folder is deleted. (While executing, [Processing...] message appears on the screen.) If the [NO] button is touched, the deletion is canceled.
(4) Copy operation
Folder to be used in logging is copied.

Step 1. Touch the file to be copied.

Step 2. If the [Copy] button is touched, the Select drive screen is displayed.

Step 3. Select a drive.

Step 4. Select the copy destination folder and touch [Execute]. The file is copied.
5. Precautions

1. Precautions for operation

(a) Precautions during folder/file operation (Create/Delete/Copy/File output, etc.)
   Even if the access to the SD card is inhibited while the GOT is processing folders and files, the processing continues.
   (Example: Even if the access to the SD card is inhibited while the GOT is creating a folder, the folder is created.)
   Therefore, do not pull out the SD card while the "Processing..." message is on the screen after the access to the SD card is inhibited.

(b) While GOT is accessing to other file (Alarm data, etc)
   When folder/file processing for the logging is executed while the GOT is in access to other files (SD card access LED ON), the GOT executes folder/file processing for the logging after the processing for other files is completed.
   Therefore, it may take some time to finish the process of the logging folder/file.
   (The "Processing..." message is displayed on the screen.)
15.3.4 Image file management

1. Function of image file management
Deletes, copies, and moves the file created by the hard copy function. For details of the hard copy function, refer to the following.

   ➤ GT Designer3 (GOT2000) Help

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Reference page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information display of files and folders</td>
<td>Displays the kind, name, data size, creation date and time of the file or folder.</td>
<td>15-29 15-30</td>
</tr>
<tr>
<td>Delete</td>
<td>Deletes the file.</td>
<td>15-31</td>
</tr>
<tr>
<td>Copy</td>
<td>Copies the file.</td>
<td>15-32</td>
</tr>
</tbody>
</table>

2. Display operation of image file management

Select a drive and operate Image data files

Touch [Data].

Touch [Resource Data].

Touch [Image file].

Select drive

Main Menu

Data

Resource data
### 3. Display example of image file management

#### Image file Information

![Image file Information](image)

#### Storage file/folder display screen

![Storage file/folder display screen](image)

**No.** | **Item** | **Description** |
--- | --- | --- |
(1) | Select drive | The drive which displays file or folder can be selected. When an SD card is not installed, the following drives are not displayed.  
  • SD card: [A: Standard SD card] |
(2) | Kind | Indicates whether the displayed name is file or folder. Displays the extension for a file and "DIR" for a folder. |
(3) | Name | Displays the file name or folder name.  
For the long file/folder name, entire part may not be displayed.  
Confirm the non-displayed part with the [Copy] button, etc.  
➤ (3) Copy operation  
After confirmation, touch the [Cancel] button to cancel the operation. |
(4) | Size | Displays the size of the file displayed in Name. |
(5) | Date, Time | Displays the creation date and time of each file. |
(6) | Operation switch | Execution switch of each function. |

#### POINT

**1) Display of creation date and time**

The creation date and time display is not updated even if a file is created or updated while the image file management screen is displayed. To display the updated creation date and time, close the screen currently displayed (by moving to the upper hierarchy folder, etc.) and display the screen again.
4. Operation of image file management

(1) Display operation of image file management

- **Step 1.** If touch a drive of [Select drive], the information of the touched drive is displayed.
- **Step 2.** If touch a folder name, the information of the touched folder is displayed.
- **Step 3.** If touch a folder of "..", the information of the folder of the one upper hierarchy is displayed.
- **Step 4.** If touch the button of the scrollbar, the screen scrolls up/down by one line.
  If touch the button, the screen scrolls up/down by one screen.
- **Step 5.** If a file name is touched, the file is selected.
- **Step 6.** For the operations of the delete, copy, and rename, refer to the following.
  
  **Delete**
  ➤ This section (2)
  **Copy**
  ➤ This section (3)
- **Step 7.** If touch the [x] button, the screen is closed.
(2) Deletion operation

Deletes the selected file.

Step 1. Touch the file to be deleted.

Step 2. If touch [Delete] button, the screen mentioned left is displayed.
If the [YES] button is touched, the file is deleted.
If the [NO] button is touched, the deletion is canceled.
(3) **Copy operation**

Copies the selected file.

**Step 1.** Touch the file to be copied.

**Step 2.** If the [Copy] button is touched, the Select drive screen is displayed. Select a drive.

**Step 3.** If the copy destination folder is touched, the screen display is changed to the folder of copy destination. At this time, it cannot be copied into the same folder where the file exists. Select other folders.

**Step 4.** If touch the [Execute] button, the file is copied.
15.4 SD Card Access

15.4.1 Functions of SD card access

When the GOT is turned on, an SD card can be installed or removed to/from the GOT without damage to the data in the SD card.

15.4.2 Display operation of SD card access

Step 1. Touch a setting item to change the setting.
[Permissions] [Access inhibit]
When installing or removing an SD card, always set [Access inhibit].

15.4.3 Operation of SD card access
15.5 SD Card Format

1. Function of SD card format
An SD card is formatted.

2. Display operation of SD card format

Main Menu

Data

Touch [Data].

Touch [SD card format].
3. Operation of SD card format

Step 1. Install an SD card to the GOT. For installation/removal procedure of an SD card, refer to the following.

⇒ 8.1.2 Installation/removal procedure of SD card

Step 2. Touch and select the drive to format by drive selection.

Step 3. If touch the [FORMAT] button, the password input screen is displayed.

Step 4. Type 1111 and touch the [Enter] key. The dialog box shown on the left will appear. (The password is fixed to 1111.) Confirm the contents of the dialog box, and touch the [YES] button to format the SD card. To cancel the format, touch the [NO] button.

Step 5. When the formatting is completed, the completion dialog mentioned left is displayed.

Step 6. To close the dialog box, touch the [OK] button.

POINT

Restrictions on formatting

- When using an unformatted SD card in the GOT, format it by a personal computer. The GOT cannot format the unformatted SD card.
- The format of the GOT does not change the file system (Example: FAT16) of the SD card and inherits the file system before the format.
15.6 Clear data

15.6.1 Clear data functions

This function deletes the project data and resource data that are written to the GOT.

15.6.2 Clear data display

15.6.3 Clear data operation

Step 1. Touch the type of data on the screen to be deleted.

Step 2. The dialog box on the left is displayed for confirmation. Touch the [YES] button to delete the data, or the [NO] button to cancel.

POINT

Canceling deletion
Data deletion cannot be canceled once the [YES] button is pressed at the confirm deletion prompt.
Double check before touching the [YES] button.
15.7 Data Copy

The project data and basic system application are transferred by using an SD card.

**POINT**

Copy from the memory board to the GOT

Copying from the memory board to the GOT when turning on the power to the GOT. Refer to the following.

18.2 Installing using the data control function (Utility)

15.7.1 Display operation of data copy

[Diagram showing the display operation of data copy]
15.7.2 Operation of data copy

15.7.2.1 Select the copy direction.
- The selection mark is displayed on the side of the selected key.

15.7.2.2 After selecting the direction, touch the [OK] button. To abort copy, touch the [ABORT] button.

15.7.2.3 Confirm the copy direction and copy target.
- When they are set correctly, touch the [OK] button. To change the setting, touch the [CANCEL] button.

15.7.2.4 The dialog box on the left is displayed for confirmation.
- Touch the [YES] button to start copying and [NO] button to abort.

15.7.2.5 While the copy is executed, the dialog box on the left is displayed.
**POINT**

When installing or removing an SD card
Always set [Permissions] on the GOT. For details, refer to the following.

➡ 15.4 SD Card Access

1. **Error display**

When copying is not available between the GOT and the SD card, check the following contents according to the GOT error display.

<table>
<thead>
<tr>
<th>Error message</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD card is not attached.</td>
<td>Install an SD card to the GOT.</td>
</tr>
<tr>
<td>GOT type is unmatch.</td>
<td>The model set for the data in the SD card does not match with that of the copy target GOT. Use the same model data as that of the copy target GOT.</td>
</tr>
<tr>
<td>Write protection switch ON.</td>
<td>The write protection switch of the SD card is ON. Turn off the write protection switch.</td>
</tr>
<tr>
<td>Available package data is not existed.</td>
<td>There is no data to be a copy target in the copy source. Store the data to be copied in the copy source and copy it again.</td>
</tr>
</tbody>
</table>
15.8 BACKUP/RESTORE

15.8.1 BACKUP/RESTORE

Setting data, including a sequence program, parameters, and setting values, for a controller connected to the GOT can be saved (backed up) in a memory card or USB memory in the GOT. The following shows features of the backup/restore function.

■ 1. Backing up or restoring system without personal computer for reducing downtime

Setting data for a controller connected to the GOT can be backed up, and the data can be restored to the controller. With backing up setting data for a controller, the data can be restored to the controller with the GOT connected to the controller even though the controller has to be replaced because of problems, including failures. As a result, the system can be easily restored.

![Diagram](image)

Back up setting data to a SD card

■ 2. Enabling creating the same system without personal computer

With restoring the backed up setting data to controllers in other systems, the same system can be created without a personal computer.

■ 3. Improving security

When the backup/restore function is used, browsing and changing setting data is limited with a password and the security is improved.

![Diagram](image)

Password authentication

SD card
15.8.2 System configuration

This section describes the system configuration for the backup/restore function. For connection type settings and precautions regarding the communication unit/cable and connection type, refer to the following.

➠ GOT2000 Series Connection Manual (Mitsubishi Products) for GT Works3 Version1

■1. Target controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>MELSEC iQ-F</td>
<td>FX5U, FX5UC, FX5UJ</td>
</tr>
<tr>
<td>QCPU(Q mode)</td>
<td></td>
</tr>
<tr>
<td>Basic model*1</td>
<td>Q00CPU, Q00CPU, Q01CPU</td>
</tr>
<tr>
<td>High performance model*1</td>
<td>Q02CPU, Q02CPU, Q06CPU, Q12CPU, Q25CPU</td>
</tr>
<tr>
<td>Universal model</td>
<td>Q000CPU, Q00CPU, Q01CPU, Q02CPU, Q03UDCPU, Q04UDHCPU, Q06UDHCP, Q10UDHCP, Q13UDHCP, Q20UDHCP, Q26UDHCP, Q03UDECPU, Q04UDEHCP, Q06UDEHCP, Q10UDEHCP, Q13UDEHCP, Q20UDEHCP, Q26UDEHCP, Q50UDEHCP, Q100UDEHCP, Q03UDVCP, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, Q26UDVCPU</td>
</tr>
<tr>
<td>LCPU</td>
<td>L02CPU, L06CPU, L26CPU, L26CPU-BT, L26CPU-PBT, L02CPU-P, L06CPU-P, L26CPU-P, L02SCPU, L02SCPU-P</td>
</tr>
<tr>
<td>FXCPU*2</td>
<td>FX0, FX0S, FX0N, FX1, FX2, FX2C, FX1S, FX1N, FX2N, FX2NC, FX3U, FX3UC, FX3G, FX3GC, FX3S</td>
</tr>
</tbody>
</table>

*1 Use a PLC CPU with the function version of B or later.
*2 To restore the backup data containing a special parameter, use the following version of CPU.
  • FX3U(C) version: 3.10 or later
  • FX3G(C) version: 2.00 or later

■2. Connection type

This function can be used in the following connection types.

(Q: Applicable, Δ: Partly restricted, ×: Inapplicable)

<table>
<thead>
<tr>
<th>Name</th>
<th>Function Description</th>
<th>Direct CPU connection</th>
<th>Computer link connection</th>
<th>Ethernet connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backup/restore</td>
<td>Backs up setting data for a controller connected to the GOT and restores the data to the controller.</td>
<td>Δ*2</td>
<td>Δ*4</td>
<td>Δ<em>3</em>4</td>
</tr>
</tbody>
</table>

*1 The LCPU does not support the connection type.
*2 When the GOT is connected to LCPU, use L6ADP-R2.
*3 Backup/Restore cannot be used when using CC-Link IE field network Ethernet adapter.
*4 The restoration cannot be performed to a QCPU with the factory-settings or whose memory is formatted.

■3. Required hardware

The backup / restore, SD card is required.
4. Data to be backed up and restored

The following shows data to be backed up and restored.

Data other than the following data cannot be backed up and restored.

1. Basic model QCPU

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>File name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>Parameter for operating a programmable controller</td>
<td>PARAM.QPA</td>
</tr>
<tr>
<td>Intelligent function module parameter</td>
<td>Parameter for intelligent function modules</td>
<td>IPARAM.QPA</td>
</tr>
<tr>
<td>Sequence program</td>
<td>Program that the CPU operates</td>
<td>MAIN.QPG</td>
</tr>
<tr>
<td>SFC program</td>
<td>Sequence program with the SFC programming format</td>
<td>MAIN-SFC.QPG</td>
</tr>
<tr>
<td>File register&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Data stored in file registers</td>
<td>MAIN.QDR</td>
</tr>
<tr>
<td>Device comment</td>
<td>Device comment to be stored in a programmable controller</td>
<td>MAIN.QCD</td>
</tr>
<tr>
<td>Device initial value</td>
<td>Setting the device initial value</td>
<td>MAIN.QDI</td>
</tr>
</tbody>
</table>

<sup>*</sup>1 The file register in the Flash card installed in the CPU is always restored without confirming saving.

Select whether restoring or not the file register stored in the SRAM card or standard RAM in the dialog box displayed when restoration is executed.

When the file register is not restored, the existing file register is deleted.

Therefore, programs of the controller may not work normally.

If a problem occurs in the operation of the controller after restoration, perform the restoration again, including to the file register.

2. High Performance model QCPU

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>File name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>Parameter for operating a programmable controller</td>
<td>PARAM.QPA</td>
</tr>
<tr>
<td>Intelligent function module parameter</td>
<td>Parameter for intelligent function modules</td>
<td>IPARAM.QPA</td>
</tr>
<tr>
<td>Program</td>
<td>Program that the CPU operates (Including SFC program)</td>
<td>***.QPG</td>
</tr>
<tr>
<td>Device comment</td>
<td>Device comment to be stored in a programmable controller</td>
<td>***.QCD</td>
</tr>
<tr>
<td>Boot operation specification file</td>
<td>Batch file for starting programs stored in ROM and others</td>
<td>AUTOEXEC.QBT</td>
</tr>
<tr>
<td>Device initial value</td>
<td>Setting the device initial value</td>
<td>***.QDI</td>
</tr>
<tr>
<td>File register&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Data stored in file registers</td>
<td>***.QDR</td>
</tr>
<tr>
<td>Sampling trace file&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Sampling trace data that the specified device data is continuously collected with the specified timing</td>
<td>***.QTD</td>
</tr>
<tr>
<td>Failure history data&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Failure history data that are recorded self-diagnostic results</td>
<td>***.QFD</td>
</tr>
<tr>
<td>Programmable controller user data</td>
<td>Any user-created data stored in a memory card</td>
<td><em><strong>.</strong></em> (Optional)</td>
</tr>
</tbody>
</table>

<sup>1</sup> The file register in the Flash card installed in the CPU is always restored without confirming saving.

Select whether restoring or not the file register stored in the SRAM card or standard RAM in the dialog box displayed when restoration is executed.

When the file register is not restored, the existing file register is deleted.

Therefore, programs of the controller may not work normally.

If a problem occurs in the operation of the controller after restoration, perform the restoration again, including to the file register.

<sup>2</sup> The item can be backed up only.
### Universal model QCPU

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>File name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>Parameter for operating a programmable controller</td>
<td>PARAM.QPA</td>
</tr>
<tr>
<td>Intelligent function module parameter</td>
<td>Parameter for intelligent function modules</td>
<td>IPARAM.QPA</td>
</tr>
<tr>
<td>Program</td>
<td>Program that the CPU operates (including SFC program)</td>
<td>***.QPG</td>
</tr>
<tr>
<td>Device comment</td>
<td>Device comment to be stored in a programmable controller</td>
<td>***.QCD</td>
</tr>
<tr>
<td>Boot operation specification file</td>
<td>Batch file for starting programs stored in ROM and others</td>
<td>AUTOEXEC.QBT</td>
</tr>
<tr>
<td>Device initial value</td>
<td>Setting the device initial value</td>
<td>***.QDI</td>
</tr>
<tr>
<td>File register</td>
<td>Data stored in file registers</td>
<td>***.QDR</td>
</tr>
<tr>
<td>Sampling trace file</td>
<td>Sampling trace data that the specified device data is continuously collected with the specified timing</td>
<td>***.QTD</td>
</tr>
<tr>
<td>Programmable controller user data</td>
<td>Any user-created data stored in a memory card</td>
<td><em><strong>.</strong></em> (Optional)</td>
</tr>
<tr>
<td>File for storing device data</td>
<td>Device data used for the SP.DEVST and S.DEVLD instructions</td>
<td>DEVSTORE.QST</td>
</tr>
<tr>
<td>Drive heading</td>
<td>The heading of the drive</td>
<td>QN.DAT</td>
</tr>
<tr>
<td>Remote password</td>
<td>Remote password settings</td>
<td>00000000.QTM</td>
</tr>
<tr>
<td>Monitor sequence extension</td>
<td>Data to increase the speed of monitors from other stations.</td>
<td>MONITOR.Q0*</td>
</tr>
<tr>
<td>Latch data backup file</td>
<td>Stores the backup data for the latch data backup function to the standard ROM.</td>
<td>LCHDAT00.QBK</td>
</tr>
</tbody>
</table>

**1** The file register in the Flash card installed in the CPU is always restored without confirming saving.
- Select whether restoring or not the file register stored in the SRAM card or standard RAM in the dialog box displayed when restoration is executed.
- When the file register is not restored, the existing file register is deleted.
- Therefore, programs of the controller may not work normally.
- If a problem occurs in the operation of the controller after restoration, perform the restoration again, including to the file register.

**2** The item can be backed up only.
## (4) LCPU

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>File name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>Parameter for operating a programmable controller</td>
<td>PARAM.QPA</td>
</tr>
<tr>
<td>Intelligent function module parameter</td>
<td>Parameter for intelligent function modules</td>
<td>IPARAM.QPA</td>
</tr>
<tr>
<td>Program</td>
<td>Program that the CPU operates (including SFC program)</td>
<td>***.QPG</td>
</tr>
<tr>
<td>Device comment</td>
<td>Device comment to be stored in a programmable controller</td>
<td>***.QCD</td>
</tr>
<tr>
<td>Boot operation specification file</td>
<td>Batch file for starting programs stored in ROM and others</td>
<td>AUTOEXEC.QBT</td>
</tr>
<tr>
<td>Device initial value</td>
<td>Setting the device initial value</td>
<td>***.QDI</td>
</tr>
<tr>
<td>File register*1</td>
<td>Data stored in file registers</td>
<td>***.QDR</td>
</tr>
<tr>
<td>Sampling trace file*2</td>
<td>Sampling trace data that the specified device data is continuously collected with the specified timing</td>
<td>***.QTD</td>
</tr>
<tr>
<td>Programmable controller user data</td>
<td>Any user-created data stored in a memory card</td>
<td><em><strong>.</strong></em> (Optional)</td>
</tr>
<tr>
<td>File for storing device data</td>
<td>Device data used for the SP.DEVST and S.DEVLD instructions</td>
<td>DEVSTORE.QST</td>
</tr>
<tr>
<td>Drive heading</td>
<td>The heading of the drive</td>
<td>QN.DAT</td>
</tr>
<tr>
<td>Remote password</td>
<td>Remote password settings</td>
<td>000000000.QTM</td>
</tr>
<tr>
<td>Monitor sequence extension</td>
<td>Data to increase the speed of monitors from other stations.</td>
<td>MONITOR.Q0*</td>
</tr>
<tr>
<td>Latch data backup file</td>
<td>Stores the backup data for the latch data backup function to the standard ROM.</td>
<td>LCHDAT00.QBK</td>
</tr>
<tr>
<td>Data logging setting file</td>
<td>Setting the data logging</td>
<td>LOGCOM.QLG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOG01.QLG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOG10.QLG</td>
</tr>
<tr>
<td>Menu definition file</td>
<td>Menu defining files</td>
<td>MENUDEF.QDF</td>
</tr>
</tbody>
</table>

*1 The file register in the Flash card installed in the CPU is always restored without confirming saving. Select whether restoring or not the file register stored in the SRAM card or standard RAM in the dialog box displayed when restoration is executed. When the file register is not restored, the existing file register is deleted. Therefore, programs of the controller may not work normally.

*2 If a problem occurs in the operation of the controller after restoration, perform the restoration again, including to the file register. The item can be backed up only.

## (5) FX CPU

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>File name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>Parameter for operating a programmable controller</td>
<td>INFO.FPG</td>
</tr>
<tr>
<td>Device comment</td>
<td>Device comment to be stored in a programmable controller</td>
<td></td>
</tr>
<tr>
<td>Sequence program</td>
<td>Program that the CPU operates</td>
<td></td>
</tr>
<tr>
<td>Special program*1</td>
<td>Positioning setting/Initial value parameter</td>
<td></td>
</tr>
<tr>
<td>File register</td>
<td>Data stored in file registers</td>
<td></td>
</tr>
<tr>
<td>Extension file register*2</td>
<td>Data stored in extension file registers</td>
<td></td>
</tr>
<tr>
<td>Built-in CC-Link/LT setting*3</td>
<td>CC-Link/LT parameter</td>
<td></td>
</tr>
<tr>
<td>Special parameter*1</td>
<td>Special adapter/special block parameter saved in the main unit</td>
<td></td>
</tr>
</tbody>
</table>

*1 The data can be backed up or restored with the FX3U(C) series and FX3G(C) series only.

*2 The data can be backed up or restored with the FX3U(C) series only.

*3 The data are stored in the FX3U-32MT-LT-2 only.
(6) Data for software

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>File name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label program</td>
<td>Data for GX Developer</td>
<td>PROJINFO.CAB</td>
</tr>
<tr>
<td>Symbolic data</td>
<td>Symbolic data for PX Developer</td>
<td>#FBDQINF.BIN</td>
</tr>
<tr>
<td>Source information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple project (with label)</td>
<td>GX Works2 data</td>
<td>SRCINFOM.CAB, SRCINFOM.C32</td>
</tr>
<tr>
<td>Structured project</td>
<td>GX Works2 data</td>
<td>SRCINFOI.CAB, SRCINFOI.C32</td>
</tr>
<tr>
<td>New source information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple project (with label)</td>
<td>GX Works2 data</td>
<td>SRCINF1M.CAB, SRCINF1M.C32, SRCINF2M.CAB, SRCINF2M.C32</td>
</tr>
<tr>
<td>Structured project</td>
<td>GX Works2 data</td>
<td>SRCINF1I.CAB, SRCINF1I.C32, SRCINF2I.CAB, SRCINF2I.C32</td>
</tr>
</tbody>
</table>

5. Backup data

(1) Storing backup data
When backups for the same channel are executed several times, the backup data is overwritten by SD card.

(2) Storage location for backup
Backup data are stored in a SD card with the following folder structure.

SD card
   ------------------------------- SD card in the drive set as the storage location for backup data
      BACKUP
         SYS1BKUP
            YYMMDXXX......Folder for storing backup data
         SYS2BKUP

(3) Folders for backup data
Backup data are stored by the folder, and a folder name (YYMMDXX) is set as follows.

YYMMDXX
   00 (fixed)
   Backup date (01 to 31)
   Backup month (01 to 12)
   Backup year (the last two digits of the year)
15.8.3  Access range

(1) Access range with connection types
The following shows a target controller of the backup/restore execution with each connection type.

<table>
<thead>
<tr>
<th>Connection type</th>
<th>Target controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer link connection</td>
<td>Host station</td>
</tr>
<tr>
<td>Ethernet connection</td>
<td>Host station</td>
</tr>
</tbody>
</table>

(2) With multi-channel function
With the multi-channel function, the backup and restoration is executed per channel.

(3) Backing up/restoring data for multiple CPU system
Only batch backup of all controllers is executed.
Backup of only specified ones among the controllers Nos. 1 to 4 is not supported.

15.8.4  Precautions

1. Precautions for backup

(1) Data that cannot be backed up
The GOT cannot back up device current values and data stored in device memories.
For collecting device current values, use the recipe function.
For how to use the recipe function, refer to the following manual.

⇒ GT Designer3 (GOT2000) Help
For collecting data stored in device memories, use GX Developer.

(2) Names of files to be backed up
When characters other than the characters defined in the shift JIS code and ASCII code are used for file names, the file names may not be correctly displayed with the data backed up on the GOT.
For using the backup/restore function, use characters in the JIS code and ASCII code for file names.

(3) Backing up intelligent function module parameters
For backing up an intelligent function module parameter (IPARAM.QPA), only the parameters that can be stored in the PLC CPU are the target parameters.
To store other intelligent function module parameters than those, GX Configurator applied to GX Works2 and the intelligent function module is required.
For the intelligent function module parameters that can be stored in the PLC CPU, refer to the following.

⇒ GX Works2 Version 1 Operating Manual (Intelligent Function Module)

(4) Compatibility of backup data
(a) The backup data used in GS21 can not be used in GT27, GT25 and GT23.
(b) The backup data used in GT27, GT25 and GT23 can not be used in GS21.

2. Precautions for restore

(1) Communication status between GOT and target controllers
For restoring data, enable the target controllers of the restoration to communicate with the GOT.
When the target controllers of the restoration cannot communicate with the GOT, the restoration cannot be executed.

(2) STOP status during restoration
CPUs for the programmable controller is in the STOP status with the remote STOP before the restoration.
For the CNC C70, the CNC ladder is in the STOP status.
The CPUs and CNC ladder remain in the STOP status after the restoration is completed.
Restart the controllers.

(3) When restoration is canceled
When the restoration is canceled, all the data are not restored to the controllers and the controllers may not correctly operate.
When the restoration is canceled, be sure to execute the restoration again.
The CPUs and CNC ladder remain in the STOP status after the restoration is canceled.
Restart the controllers.

(4) System configuration with controllers for restoration
Set the same system configuration with the controllers for the restoration as those for the backup.
Failure to do so disables the GOT to restore data to the controllers.
When the system configuration with the controllers for the restoration is the same as those for the backup, the GOT can restore data to the controllers even if the connection type and CH No. for the restoration differ from those for the backup.
(5) **Controller operations**
Controllers may malfunction by changing set values, device values, and others during the restoration. Check that data to be restored is the appropriate data, and then execute the restoration with paying attention to the controller operations.

## 3. Common precautions for backup and restore

### (1) Password for backup/restore
When a password for a controller is changed after setting the password for the backup/restore, set a new password for the backup/restore. For setting the password for the backup/restore, refer to the following.

15.8.5 Security and password

### (2) Precautions for GT Designer3 (GOT2000)
Do not execute the following operations with GT Designer3 (GOT2000) during the backup/restore.

<table>
<thead>
<tr>
<th>Operation with GT Designer3 (GOT2000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boot OS installation, package data, the communication driver, the standard monitor OS, and the extended function system application download</td>
</tr>
<tr>
<td>When the above operations are executed, the backup/restore is stopped.</td>
</tr>
</tbody>
</table>

### (3) Precautions for GX Developer

(a) **Do not access the target controller of the backup/restore with GX Developer during the backup/restore.**

Doing so stops the backup/restore.

(b) **Do not execute the backup/restore on the GOT while the target controller of the backup/restore is accessed by GX Developer.**

Doing so causes a communication error on GX Developer. (The backup/restore is executed.)

### (4) CPU with a security key
The backup/restore cannot be executed on the CPU on which the security key is set. To execute the backup/restore, check the setting of the CPU.

When the target controllers of the backup/restore include both the CPU with the security key and the CPU without the security key, the backup/restore is executed only for the CPU without the security key.

## 4. Precautions for QCPU

The restoration to QCPU with the factory-settings or whose memory is formatted is available only in the following cases.

- For a single CPU system: When the connection type is the bus connection or direct CPU connection
- For a multiple CPU system: When the connection type is the direct CPU connection

However, in a multiple CPU system which includes a QCPU with the factory-settings or whose memory is formatted, batch restoration to multiple controllers cannot be performed. Restore each controller with the following procedure.

- Restoring data to controller No.1
- Restoring data to controller No.2
- Resetting controller No.1
- Resetting controller No.2
5. Precautions for FXCPU

(1) Attaching a memory cassette
When a memory cassette is attached to a FXCPU, data in the memory cassette is backed up.
When a memory cassette is not attached to the FXCPU, data in the built-in memory is backed up.

(2) Keyword setting
The following table shows whether the backup/restore function is executed or not by each keyword setting.
(Executed: ○ Not executed: ×)

<table>
<thead>
<tr>
<th>Function</th>
<th>Protection that cannot be disabled by keyword</th>
<th>With keyword</th>
<th>Without keyword</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Write protection</td>
<td>Read/ Write protection</td>
<td>All operation protection</td>
</tr>
<tr>
<td>(Trigger) Backup</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Restore</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

(3) Keyword for restoring data
When data are restored to a target FXCPU, a keyword in the FXCPU is held.
For setting or disabling a keyword for the FXCPU, refer to the following manual.
   ➤ GOT2000 Series User’s Manual (Utility)
   Programming manual for the FXCPU used

(4) Backup data which contains source information
When the target FXCPU of the restoration does not support source information, the backup data which contains source information cannot be restored.
15.8.5 Security and password

By setting the passwords, the password authentication is available when the backup/restore is executed. The password authentication uses the password for the backup/restore and passwords for controllers.

The following shows the passwords used for the backup/restore.

<table>
<thead>
<tr>
<th>Password</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Password for backup/restore</td>
<td>Password for the backup/restore function</td>
</tr>
<tr>
<td></td>
<td>Set the password on the GOT at the first backup.</td>
</tr>
<tr>
<td></td>
<td>Before setting the password, set passwords for controllers in advance.</td>
</tr>
<tr>
<td>Passwords for controllers</td>
<td>Passwords set for the files for the target controllers of the backup/restore</td>
</tr>
<tr>
<td></td>
<td>Set the passwords with software for the controllers when writing the files to the controllers.</td>
</tr>
</tbody>
</table>

After the first backup (after setting the password for the backup/restore), the user has no need to input the passwords for the controllers. (The passwords for the controllers are automatically verified.)

The following shows the security advantages.

<table>
<thead>
<tr>
<th>User</th>
<th>Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>No need to disclose the passwords for the controllers to the operator (Preventing anyone other than the administrator to browse or edit setting data for the controllers.)</td>
</tr>
<tr>
<td>Operator</td>
<td>The backup/restore is executed by using the password for the backup/restore only. (No need to input passwords for the controllers)</td>
</tr>
</tbody>
</table>

POINT

Before setting password for backup/restore

When the user forgets the password for the backup/restore, the backup/restore cannot be executed.

In that case, execute the backup again by using a formatted or new SD card.

For how to set the password for the backup/restore, refer to the following.

⇒ ▪ Setting password for backup/restore

How to use the password for the backup/restore, refer to the following.

⇒ ▪ How to use password for backup/restore
1. Setting password for backup/restore

The password for the backup/restore can be set only when the following condition is satisfied at the first backup.
• When passwords are set for the files for the backup target controller

At the first backup, the password authentication for the controller is required. The following shows the operating procedure at the first backup. For details, refer to the following.

15.8.6 Operation of backup/restore

![Flowchart diagram]

- Touch [Backup] in the main menu on the GOT. (The first backup)
- Other than the FXCPU
  - Is a password set for the file to be backed up?
    - No
      - Yes
      - Input the password for the controller. (When the password for the first file is verified, the other files are automatically verified using the password for the first file. When the automatic verification fails, input the corresponding password.)
      - No
      - Is the password correct?
        - No
        - Yes
          - The file is backed up.
          - Yes
            - Is there another file?
              - No
              - Yes
                - Is there another unit? (In the multiple CPU system)
                  - No
                  - Yes
                    - Is there another controller to be backed up? (when with controller list file)
                      - No
                      - Yes
                        - Set the password for the backup/restore. (Set 32 or less alphanumeric characters for the password.)
                          - ********** ESC
                          - 7 8 9 0 AC
                          - 4 5 6 → DEL
                          - 1 2 3 | KEY ENT
                          - Backup completed

- When a keyword is set, disable the keyword.
POINT

(1) Setting password
For ensuring the security, setting a password of 8 or more characters that cannot be easily guessed is recommended.
When the password is leaked, the same system can be created. Pay enough attention to managing the password.

(2) FXCPU keyword
To back up or restore data in the FXCPU, disable a keyword in advance.

✈ 15.8.9 Operation of keyword
2. How to use password for backup/restore

(1) Backup

The following shows the operating procedure for the backup after setting the password for the backup/restore.

Start

Touch [Backup] in the main menu on the GOT.
(The second or later backup)

Input the password for backup/restore.

Is the password correct?

Yes

The passwords for the controller stored as the backup setting data are automatically verified for each file.

Is the password correct?

Yes

The file is backed up.

Yes

Is there another file?

No

Yes

Is there another unit?
(In the multiple CPU system)

No

Yes

Is there another controller to be backed up?
(when with controller list file)

No

Have the passwords for the controllers ever been changed?

No

Set the password for the backup/restore.
(Valid 32 or less alphanumeric characters for the password.)

Password

ESC

7 8 9 0 AC

4 5 6 → DEL

1 2 3 KEY ENT

Backup completed
When passwords for controllers are changed
When the password input is cancelled and the backup is stopped, the backed up files until the backup is stopped are all deleted.

(2) Restoration
The following shows the operating procedure for the restoration after setting the password for the backup/restore.

Start

Touch [Restore] in the main menu.

Input the password for the backup/restore.

Is the password correct?

Yes(Other than the FXCPU)

Is a password set for the file to be restored?

No

Yes

The passwords for the controller contained in the backup data are automatically verified.

Is the password correct?

No

Yes

Input the correct password for the controller.

The file is restored.

Is there another file?

Yes

No

Is there another unit?

(In the multiple CPU system)

No

Yes

Is there another controller to be backed up?

(when with controller list file)

No

Yes

Restoration completed
POINT

When passwords for controllers are changed

When the password input is cancelled and the restoration is stopped, the restored files until the restoration is stopped remain in the controller.

When only any of the files are restored, the data can be inconsistent in the entire system.

- When the password input is cancelled
  The restoration is stopped, and the restored file remains in the controller.
15.8.6 **Operation of backup/restore**

When the connected equipment is not an FX CPU, the [Keyword] switch is not displayed.
15.8.7 Operation of backup

This section describes the backup operation screen. The screen operation procedure varies depending on the PLC CPU type and password status. For the details of the operation procedure, refer to the following.

15.8 Security and password

Step 1. Touch [Backup].

Step 2. Touch [Execute]. Touching any switch (among [CPU No. 1], [CPU No. 2], [CPU No. 3] and [CPU No. 4]) is invalid.

Step 3. When the left screen appears, touch [YES].

Step 4. When the left screen appears, touch [OK], and input the password on the key window.

(Continued to next page)
Step 5. When the password is set in a program in the PLC CPU, the left screen appears. Touch [OK], and input the password on the key window. When the input of the password is completed, the backup processing is executed.

Step 6. The left screen is displayed while the backup processing is executed.

Step 7. When the restoration processing is finished, the left screen appears. Touch [OK]. In the case of FX CPU, the following screen appears. Touch [OK], and input the password.
15.8.8 Operation of restore

This section describes the restoration operation screen. The screen operation procedure varies depending on the PLC CPU type and password status. For the details of the operation procedure, refer to the following.

15.8.5 Security and password

**Step 1.** Touch [Restore].

**Step 2.** Select the CPU unit to be restored by pressing a switch (among [CPU No. 1], [CPU No. 2], [CPU No. 3] and [CPU No. 4]). When the connected equipment is an FX CPU, touching any switch (among [CPU No. 1], [CPU No. 2], [CPU No. 3] and [CPU No. 4]) is invalid.

**Step 3.** Touch [Execute].

**Step 4.** When the left screen appears, touch [YES].

(Continued to next page)
Step 5. When the left screen appears, touch [OK], and input the password on the key window.

Step 6. When the password is set in a program in the PLC CPU, the left screen appears. Touch [OK], and input the password on the key window. When the input of the password is completed, the restoration processing is executed.

Step 7. The left screen is displayed while the restoration processing is executed.

Step 8. When the restoration processing is finished, the left screen appears. Touch [OK].
15.8.9 **Operation of keyword**

When the connected FX Series PLC is protected by the keyword, the protection disabling operation is available.

**Step 1.** Touch [Keyword].

**Step 2.** The left screen appears. Disable the protection of the FX Series PLC.

11.7 Keyword
### 1. Common to backup and restoration

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The backup data are not found.</td>
<td>The backup data are not stored in the SD card in the GOT. No SD card is installed to the drive specified for storing the backup data.</td>
<td>• Install SD card with the backup data stored.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check the storage location for the backup data with the utility.</td>
</tr>
<tr>
<td>The backup/restore cannot be executed because the user does not know the password for the backup/restore.</td>
<td>The user does not remember the password. The password is incorrect.</td>
<td>• Check with the administrator of the system regarding the password for the backup/restore.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Execute the backup again by using a formatted or new SD card.</td>
</tr>
<tr>
<td>The backup/restore cannot be completed because a communication error occurs between the GOT and a controller during the backup/restore.</td>
<td>The communication settings and communication driver for the GOT are incorrectly set.</td>
<td>Check if the communication settings and communication driver for the GOT are correctly set.</td>
</tr>
<tr>
<td></td>
<td>Because parameters for the controller are incorrectly set, the controller does not recognize the GOT.</td>
<td>Check if the parameters for the controller is correctly set with tools, including GX Developer, for the controller.</td>
</tr>
<tr>
<td></td>
<td>The controller is turned off.</td>
<td>Turn on the controller.</td>
</tr>
<tr>
<td></td>
<td>The cable is not correctly connected.</td>
<td>Check the cable.</td>
</tr>
</tbody>
</table>

### 2. Backup

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The backup data cannot be written into SD card.</td>
<td>No SD card is installed to the GOT.</td>
<td>Install a SD card to the drive specified for storing the backup setting or backup data.</td>
</tr>
<tr>
<td></td>
<td>The SD card does not have free space.</td>
<td>Install a SD card with enough free space. Delete unnecessary files in the SD card.</td>
</tr>
<tr>
<td></td>
<td>The SD card is set to write-protect.</td>
<td>Set the SD card to writable. Delete unnecessary files in the SD card.</td>
</tr>
<tr>
<td></td>
<td>The drive does not exist.</td>
<td>Check if the drive specified for storing the backup setting or backup data exists. (Check if the SD card is connected on the GOT.)</td>
</tr>
<tr>
<td>Setting data (files and data) cannot be obtained from the controller.</td>
<td>The GOT cannot communicate with the controller.</td>
<td>Check the following. GOT • Check if the cable is correctly connected to the GOT.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the correct communication driver is installed on the GOT.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the communication settings are correctly set. Controller</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the parameters are set.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the cable is correctly connected to the controller.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the controller is turned on.</td>
</tr>
<tr>
<td>The backup cannot be executed because passwords for files of the controller are set.</td>
<td>The user does not remember the password. The password is incorrect. (The first backup) Passwords for files of the controller are changed.</td>
<td>Check with the administrator of the system regarding the passwords for files of the controller.</td>
</tr>
</tbody>
</table>
### 3. Restoration

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting data (files and data) cannot be written into the controller.</td>
<td>The GOT cannot communicate with the controller.</td>
<td>Check the following.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the cable is correctly connected to the GOT.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the correct communication driver is installed on the GOT.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the communication settings are correctly set.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Controller</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the parameters are set.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the cable is correctly connected to the controller.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the controller is turned on.</td>
</tr>
<tr>
<td>The target controller of the restoration is a different kind of controller from the target controller of the backup.</td>
<td></td>
<td>• Check if the system configuration for the restoration is the same as that for the backup.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check if the target controller of the restoration is the same as that of the backup or the same kind of controller.</td>
</tr>
<tr>
<td>The restoration cannot be executed because passwords for files of the controller are set.</td>
<td>• The passwords for files written in the controller are changed.</td>
<td>Check with the administrator of the system regarding the passwords for files of the controller.</td>
</tr>
</tbody>
</table>
16. GOT SELF CHECK (DEBUG)

The debug includes functions to check the PLC system status and to improve troubleshooting efficiency. The following is available as the debug.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device monitor</td>
<td>For a controller connected to the GOT, forcibly turning on or off devices of the controller and changing the set value or present value are available.</td>
<td>16 - 1</td>
</tr>
<tr>
<td>FX list editor</td>
<td>The sequence program of FX PLC can be list edited.</td>
<td>16 - 14</td>
</tr>
<tr>
<td>FX3U-ENET-ADP communication setting function</td>
<td>The communication set value of the FX3U-ENET-ADP stored in the CPU can be changed.</td>
<td>16 - 42</td>
</tr>
</tbody>
</table>

16.1 Device Monitor Function

For a controller connected to the GOT, forcibly turning on or off devices of the controller and changing the set value or present value are available.

16.1.1 System configuration

This section describes the controller names and connection types between the GOT and a controller that are applicable to the device monitor function. For details of communication units and cables for each connection type, refer to the following manual.

➠ GOT2000 Series Connection Manual For GT Works3 Version1

1. Target controller

<table>
<thead>
<tr>
<th>Controller</th>
<th>Connection type</th>
</tr>
</thead>
<tbody>
<tr>
<td>QCPU (Q mode)</td>
<td>Direct CPU connection, Computer link connection, CC-Link(G4) connection</td>
</tr>
<tr>
<td>QnACPU</td>
<td>Direct CPU connection, Computer link connection</td>
</tr>
<tr>
<td>FX CPU</td>
<td>Direct CPU connection</td>
</tr>
</tbody>
</table>

2. Required system application

<table>
<thead>
<tr>
<th>System application</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic system application</td>
<td>-</td>
</tr>
<tr>
<td>Communication driver</td>
<td>-</td>
</tr>
<tr>
<td>MELSEC-Q/L/QnA</td>
<td>-</td>
</tr>
<tr>
<td>MELSEC-FX</td>
<td>-</td>
</tr>
<tr>
<td>CC-Link(G4)</td>
<td>-</td>
</tr>
</tbody>
</table>

POINT

Checking method of the version of basic system application and communication driver

Check the version of the basic system application and communication driver installed in the GOT at [System Application Information] of the utility. Refer to the following for details.

➠ 15.2 OS information
16.1.2 Devices that can be monitored

For further information about the monitor device names that can be monitored and the scope, see the following:

- GT Designer3 (GOT2000) Help

16.1.3 Precautions

(1) Monitoring and testing real number data
Real number data cannot be monitored and tested.
All word devices containing real number data are monitored in integer data (binary data).

(2) Monitoring devices in 32-bit (two-word) module
When monitoring word devices (T, C, D, W, etc.) in 32-bit (two-word) module, those with 32 bits of data remaining are monitored.
Devices with 16 bits (one-word) of data remaining are not monitored.
If an odd number is specified for the first monitor device number, the last device number of the specified controller will not be displayed.
(Example) When the data entry of the QnACPU is monitored in units of 32 bits from odd numbers (D1, D3...)

(3) Changing the timer/counter set values of QnACPU
The timer/counter set values of QnACPUs whose date on the CPU rating plate is after [9707B] can be changed.
Information on the rating plate:

- DATE 9707 B
- Function version
- Date of manufacture

Unit of monitor display

Nothing displayed

(Device name)
16.1.4 Display operation of device monitor

Touch [Debug].

Touch [Device monitor].

Touch [Debug].
## 1. Device monitor screen

The information displayed on the device monitor screen is described below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Device name</td>
<td>Displays the device name.</td>
</tr>
<tr>
<td>2)</td>
<td>Device No.</td>
<td>Displays the device number.</td>
</tr>
<tr>
<td>3)</td>
<td>Bit device ON/OFF Timer/Counter contact ON/OFF</td>
<td>Displays ON/OFF information of bit devices and timer/counter contacts</td>
</tr>
<tr>
<td>4)</td>
<td>Data type</td>
<td>DW : Indicates that the device value is a 32-bit (two-word) module.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nothing displayed: Indicates that the device value is a 16-bit (one-word) module.</td>
</tr>
</tbody>
</table>
| 5)  | Present value of word device Present value and set value of timer/counter*1 | [Decimal number]  
16-bit (one-word) module: Six digits (including a digit for a sign) are displayed. (Display example: -12345)  
32-bit (two-word) module: Ten digits (including a digit for a sign) are displayed. (Display example: -123456789)  
[Hexadecimal number]  
16-bit (one-word) module: Four digits are displayed. (Display example: H AB12)  
32-bit (two-word) module: Eight digits are displayed. (Display example: H ABCDE123) |
| 6)  | Counting method                           | Displays the counting method when registering the counters from C200 to C255. |
|     |                                           | UP: Up count mode  DOWN: Down count mode                               |
| 7)  | Reset coil ON/OFF                         | Displays the reset coil state when registering the timer/counter for the FXCPU. |
|     |                                           | ( ) : ON  ( ) : OFF                                                     |
| 8)  | N/W                                       | Sets or displays the network No. when the PLC is on the network.        |
| 9)  | ST                                        | Sets or displays the station No. when the station No. is assigned to the PLC. |
| 10) | CPU No.                                   | 0 to 4: This item must be set only when the GOT is connected to the Q series CPU in the multiple CPU system or QnUCPU. Changing the CPU No. cancels the registration for all the devices. |
## Key functions

The following table describes the key functions displayed on the device monitor screen.

<table>
<thead>
<tr>
<th>Key switch</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEV</td>
<td>Switches the screen to the device registration key window for registering devices to be monitored.</td>
</tr>
<tr>
<td>TEST</td>
<td>Switches the quick test mode between enabled and disabled states.</td>
</tr>
<tr>
<td>DEC/HEX</td>
<td>Switches the numerical notation of word device values between decimal and hexadecimal numbers.</td>
</tr>
<tr>
<td>▲▼</td>
<td>Scrolls the data list up and down by one line and displays the devices before or after the device which is currently registered and placed in the top or bottom line.</td>
</tr>
<tr>
<td></td>
<td>▲: Scrolls the list up by one line to display the device number right before the device number displayed in the top line.</td>
</tr>
<tr>
<td></td>
<td>▼: Scrolls the list down by one line to display the device number right after the device number displayed in the bottom line.</td>
</tr>
<tr>
<td>x</td>
<td>Exits the device monitor, and then the screen returns to the debug screen.</td>
</tr>
</tbody>
</table>
16.1.6 Basic operation of device monitor

The following explains basic operations of the device monitor.

16.1.6.1 Device Monitor Function

The following explains basic operations of the device monitor.

Debug

With no registered device

With registered devices

DEV

Register devices if necessary.

16.2.7 Selection and operation of modes

TEST

Execute the quick test if necessary.

16.2.8 Displaying sequence programs

DEC/HEX

Switch the numerical notation of word device values between decimal and hexadecimal numbers if necessary.
16.1.7 Device registration

The following explains the procedures for device registration.

**Connecting to a Q series CPU in the multiple CPU system or QnUCPU**

Specify the CPU No. of the device to be registered when connecting the GOT to a Q series CPU in the multiple CPU system or QnUCPU.

1) Data type
   - 32: Indicates that the device value is a 32-bit (two-word) module.
   - Nothing displayed: Indicates that the device value is a 16-bit (one-word) module.

2) Device name
   - Set the device name and device number to be monitored.

3) Device No.
   - Specify the CPU No. of the device when connecting the GOT to a Q series CPU in the multiple CPU system or QnUCPU.

Touch the DEV key.

Input the CPU No. with the ten-key, and then touch the ENT key.

When registering multiple devices, repeat the procedures.

Set 1) to 3) by using the keyboard, and then touch the ENT key. The device registration is completed.

For the keyboard operations, refer to the next page.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Data type</td>
<td>32: Indicates that the device value is a 32-bit (two-word) module.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nothing displayed: Indicates that the device value is a 16-bit (one-word) module.</td>
</tr>
<tr>
<td>2)</td>
<td>Device name</td>
<td>Set the device name and device number to be monitored.</td>
</tr>
<tr>
<td>3)</td>
<td>Device No.</td>
<td></td>
</tr>
</tbody>
</table>
Keyboard operations

(1) Keyboard functions

- Device name keyboard
  - Select a data type.
    - [32]: Sets to the two-word.
    - [16]: Sets to the one-word.

- Device number keyboard
  - Deletes all input numbers.

(2) Input procedures

- Select a type (ex: 16 bit)
  - Touch [16] key.

- Input device number (ex: 12)

- Input device name (ex: D)

The device registration is completed by touching the [ENT] key.
Precautions for device registration

(1) Data type
Device monitor screens display the data type as shown below.
• DW : 32-bit (two-word) module
• Nothing displayed : 16-bit (one-word) module

(2) CPU No. specification
Changing the CPU No. after registering devices cancels the registration for all the devices.
Check the CPU No. before registering the devices.

(3) Station No. specification
Changing the station No. after registering devices cancels the registration for all the devices.
Check the station No. before registering the devices.

(4) Holding registered devices
The registration for the devices is not canceled after exiting the device monitor.
Restarting the GOT cancels the registration for all the devices.

(5) The number of registered devices
The number of registered devices must be within the maximum number of devices that can be displayed on the GOT.
For registering an additional device, the registration for the device in the top line is canceled and the additional device is displayed in the bottom.
16.1.8 Quick test

**WARNING**

Before performing the quick test operations of device monitor (such as turning ON or OFF bit device, changing the word device current value, changing the settings or current values of the timer or counter), read through the manual carefully and make yourself familiar with the operation method.

During quick test operation, never change the data of the devices which are used to perform significant operation for the system. False output or malfunction can cause an accident.

The quick test operation procedure for monitor devices is described below.

1. Enable the quick test mode.
2. Touch to check that the quick test operation is enabled.
3. (1) Quick test of bit devices
4. (2) Quick test of word devices
16.1 Device Monitor Function

(1) Quick test of bit devices
(Operation example)
Change the status of bit device M12 from OFF to ON.

The device name and device number of the selected bit device are highlighted.

Touch the bit device to be switched between ON and OFF states.

The selected bit device is switched from (OFF) to (ON).
(2) **Quick test of word devices**  
(Operation example)  
Change the device value of word device D200 from 43 to 100.  
Conditions: Data range: 16 bits, device value display format: decimal number

- Touch the device value to be changed.  
- Input a device value by using the keyboard.  
  Input "100" for the operation example.  
- Touch [ENT] key.  
- The device value of D200 is changed from 43 to 100.
**POINT**

When the cursor is displayed

When the cursor is displayed, touch the [▲] or [▼] key to move the cursor to the upper or lower registered device.

![Diagram showing cursor movement](image)
16.2 FX List Editor

The MELSEC-FX list editor can change the sequence programs on the FX PLC.

16.2.1 Display operation of FX list editor

- Touch [Debug].

- Touch [FX list editor].

- Cannel Setting
■1. Parameters and sequence programs are easy to maintain.
You can check or partly correct, change or add FX PLC parameters and sequence programs simply by operating keys. You can easily edit sequence programs without preparing any peripheral unit other than the GOT.

(Example of changing sequence program commands)

LD X000 Changed LD X000
OUT Y020 OUT Y030
LD X001 LD X001

■2. Errors that occur during list editing can be checked easily.
Error messages, error codes, and number of steps for errors that occur in the FX PLC can be checked. Details can be checked immediately even for errors that occur during list editing.

<table>
<thead>
<tr>
<th>Error message</th>
<th>Detail Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/O configuration error</td>
<td>1010</td>
</tr>
<tr>
<td>PC/HPP communication error</td>
<td>6201</td>
</tr>
</tbody>
</table>

■3. Commands and devices can be searched and displayed.
Commands and devices used in sequence programs can be searched. The correction position can be searched for cases such as when you want to correct a specific device.

Changed

LD X000
OUT Y020
LD X001  

Searched device

Displays the searched device.

LD M 800
OUT T 10
K 100
LD X 002
## 16.2.2 Specifications

### 1. System configuration
This section describes the system configuration of the MELSEC-FX list editor.
For the setting method in each connection form, used communication unit/cable and cautions on connection form, refer to the following manual.
GOT2000 Series Connection Manual For GT Works3 Version1

### 2. Controllers that can be edited with the MELSEC-FX list editor

<table>
<thead>
<tr>
<th>Target controller</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FX CPU</td>
<td></td>
</tr>
</tbody>
</table>

*1 FX list editor is not applicable to for MELSEC iQ-F series.

### 3. Connection forms
This function can be used in the following connection types.

(\(\text{O}\): Available, \(\Delta\): Unavailable)

<table>
<thead>
<tr>
<th>Name</th>
<th>Connection form between GOT and PLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>MELSEC-FX list editor</td>
<td>Direct CPU connection</td>
</tr>
<tr>
<td></td>
<td>Ethernet connection (^{1})</td>
</tr>
</tbody>
</table>

*1 MELSEC-FX list editor cannot be used when using CC-Link IE field network Ethernet adapter.  
*2 Available only when using FX3 series.

### 4. Functions list and monitor conditions
The following shows the memory that can be monitored by the MELSEC-FX list editor and the FX PLC status conditions.

(\(\text{O}\): Can be monitored \(\Delta\): Can be monitored under certain conditions \(\times\): Cannot be monitored)

<table>
<thead>
<tr>
<th>Function</th>
<th>Memory that can be monitored (^{2})</th>
<th>FX PLC status</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Built-in memory</td>
<td>RAM memory cassette</td>
<td>EEPROM memory cassette, flash memory cassette</td>
</tr>
<tr>
<td>Reading sequence programs</td>
<td>Displaying sequence programs</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>Searching commands/ devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing sequence programs</td>
<td>Writing commands</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Changing operands/ set values</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inserting commands</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Deleting commands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sequence program all clear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC diagnostics</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Parameter setting</td>
<td>Display</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>Setting</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Keyword</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

*1 The operation is available only when the protect switch is OFF.  
*2 The available memory differs depending on the FX PLC being used.  
For details, refer to the following.

\(\Rightarrow\) The hardware manual of the FX PLC being used
16.2.3 Access range
For the FXCPU in Ethernet connection, the GOT can monitor only the host station.
The access range other than the above is the same as the access range when the GOT is connected to a controller.
For details of the access range, refer to the following:

➤ GT Designer3 (GOT2000) Help
GOT2000 Series Connection Manual (Mitsubishi Product) For GT Works3 Version1

16.2.4 Precautions

(1) Using other peripheral equipment for sequence program/parameter change
When using the MELSEC-FX list editor, do not change programs or parameters in the PLC CPU from other peripheral equipment.
If programs or parameters are changed, exit the MELSEC-FX list editor once and start the MELSEC-FX list editor again.
If the program on one PLC is changed carelessly from multiple units of peripheral equipment (including GOT), the contents of the program in the PLC CPU and the peripheral equipment may not be the same, resulting in an unintended operation of the PLC CPU.

(2) Sequence program change
Stop the FX PLC before changing (writing, inserting, deleting) a sequence program or changing parameters.
Operation is not possible with the FX PLC running.

(3) If you press the [GO] key but the system does not proceed to the next operation (for example, a search)
Check the input contents (applied instruction number, device value, etc.).

(4) When using list monitor
Only devices to be used for basic instructions can be monitored.
The status of devices (word, bit) to be used for application instructions cannot be monitored.
16.2.5 Display operation

1. Operation to display

The following describes the outline for displaying the operation screen of the MELSEC-FX list editor.

1. Turn on the power to the GOT.

Starting from the utility
Starting from the special function switch (MELSEC-FX list editor) set in the project data

Display the utility.

After the utility is displayed, touch [Debug] → [MELSEC-FX List editor] from the main menu.
For how to display the utility, refer to the user's manual of the GOT to be used.

Touch the special function switch.

Refer to the following manual for how to set the special function switch.

GT Designer3 (GOT2000)HELP

When no keyword is registered in the connected FX PLC
When a keyword is registered in the connected FX PLC

Enter the keyword.

Subsection 15.2.16 Keyword

The MELSEC-FX list editor is started.

**POINT**

1. How to display the utility
For how to display the utility, refer to the following.

   ➔ 9.2 Utility Function List

2. If the project data has not been downloaded
The MELSEC-FX list editor can be started from the utility even if the project data has not been downloaded to the GOT.
### 2. Changing screens

This section describes how to change the screen.

*1 With setting special function switches (FX list monitor), the list monitor can be started on the monitor screen. When the list monitor is started on the monitor screen, the list editor cannot be used. For how to set special function switches, refer to the following.

⇒ GT Designer3 (GOT2000) Help
16.2.6 Operation procedures

This section describes the contents of the MELSEC-FX list editor and the key functions displayed on the screen.

1. Key arrangement and a list of key functions

The arrangement and functions of the keys displayed on the MELSEC-FX List Editor window are described below.

2. Displayed contents

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Display contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Channel No</td>
<td>Displays the currently selected channel number.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Touching &quot;ChNo.&quot; displays the communication setting window.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The communication setting window is not displayed if the MELSEC-FX list editor is started from the FX ladder monitor.</td>
</tr>
<tr>
<td>2)</td>
<td>Mode</td>
<td>Displays a mode for MELSEC-FX list editor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➤ 16.2.7 Selection and operation of modes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Monitor] is displayed when the list monitor is executed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➤ 16.2.17 List monitor</td>
</tr>
<tr>
<td>3)</td>
<td>Error message</td>
<td>Displays the contents of errors that occur with the MELSEC-FX list editor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➤ 16.2.19 Error messages and corrective actions</td>
</tr>
<tr>
<td>4)</td>
<td>List display area</td>
<td>Displays the sequence program in list format (12 digits).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The position (line) that can be edited is displayed with a bar.</td>
</tr>
<tr>
<td>5)</td>
<td>Key area</td>
<td>Displays the keys that can be used with the MELSEC-FX list editor.</td>
</tr>
</tbody>
</table>
3. Key functions

The table below shows the functions of the keys that are used for the operation on the MELSEC-FX list editor screen.

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>ChNo. [1]</td>
<td>Displays the currently selected channel number. The communication setting window is not displayed if the MELSEC-FX list editor is started from the FX ladder monitor.</td>
</tr>
<tr>
<td>MODE</td>
<td>Selects a mode for MELSEC-FX list editor. ➤ 16.2.7 Selection and operation of modes</td>
</tr>
<tr>
<td>OP</td>
<td>Displays the PLC diagnostics, parameter setting, and keyword selection menu.</td>
</tr>
<tr>
<td>MORE</td>
<td>Switches between command keyboard 1 and command keyboard 2. ➤ 4. Keyboard switching</td>
</tr>
</tbody>
</table>
| CLR | When inputting commands: Cancels the key input when only part of the command has been input. ➤ 16.2.18 Action for an incorrect key input  
When option menu is displayed: Closes the option menu. Commands cannot be deleted with this key. ➤ 16.2.12 Deleting commands |
| SP | Space key. This key is used when setting timers and counters, writing applied commands, etc. |
| STEP | Displays the list from a specified step number when the step number is input. |
| ▲ | Moves the list display area bar up and down and switches the line being edited. |
| GO | Determines the key operation. |
| LD to IW | Inputs commands, device names, etc.  
The key contents depend on the input contents.  
The commands that can be used differ depending on the target FX PLC. Refer to the manual for the FX PLC to be used. |
| X | Exits the MELSEC-FX list editor. |

4. Keyboard switching

Touching the MORE button switches the command keyboard 1 and command keyboard 2. When you touch the button for a keyboard function, the optimum keyboard for input for that function is displayed automatically.

Command keyboard 1

Command keyboard 2

Touch MORE

Touch MORE
16.2.7 Selection and operation of modes

The MELSEC-FX list editor has four modes: READ, WRITE, INSERT, and DELETE. Select an appropriate mode for the intended operation. For more information on the mode to select, refer to the function operations from subsection 15.3.8.

1. How to change modes

Touch the MODE button. Each time you touch this button, the mode changes.

![Mode button and current mode display]

2. In the case the mode cannot be changed

In the following cases, the mode can be changed to the READ mode only. If you try to change to other than READ mode, an error message is displayed. To change to other than READ mode, take the action below.

<table>
<thead>
<tr>
<th>Error message</th>
<th>Cause</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLC is running</td>
<td>The FX PLC is in the RUN status.</td>
<td>Stop the FX PLC.</td>
</tr>
<tr>
<td>Can not write.</td>
<td>The protect switch of the EEPROM memory cassette is on.</td>
<td>Switch off the protect switch of the EEPROM memory cassette.</td>
</tr>
<tr>
<td></td>
<td>The EPROM memory cassette is enabled.</td>
<td>Set a memory other than EPROM as the memory to write to.</td>
</tr>
</tbody>
</table>
16.2.8 Displaying sequence programs

Sequence programs are read from the FX PLC to the GOT and displayed. There are two displaying methods: specifying the step number, and scrolling one screen at a time.

■ 1. Display using cursor keys

(1) Operation
Scroll with ▲ OR ▼

(2) Example
Scroll one line upward or downward.

■ 2. Display specifying the step number

(1) Operation
STEP Input the step number. ➔ GO

(2) Example
Displaying step number 123.

POINT
When the specified step number is the operand of an applied instruction
If the specified step number is a timer (T) or counter (C) set value or the operand of an applied instruction, that command section is displayed at the head.
3. Display scrolling one screen at a time

(1) Operation

MODE ➔ GO

(set READ mode)

(2) Example

Displaying with scrolling one screen at a time.

MODE ➔ GO

Displaying with scrolling one screen at a time.

123 MOV K 200 D 58
128 MPP
16.2.9 Searching commands/devices

Displays a command or device by searching it in sequence program from Step 0.

1. Command search

   (1) Operation

   - Select the command to search for.
   - Input the device name and device number.
   - Set the READ mode.
   - If the command you want to search for is not on the keyboard, touch the MORE key to switch to the other keyboard.
   - When searching for an applied instruction, touch the FNC key and input the applied instruction number.
   - When searching for a label, touch P or I and input the pointer number.

   1. Operation

   2. Example

   Searching for LD M8000

   - Search command
   - LD
   - 3 MOV 12

   - Pointer (P, I) searches
   - For pointer searches, only labels are searched.
   - Pointers specified as operands in applied instructions are not searched.
2. Device search

(1) Operation

After the search results are displayed, you can continue searching with the same conditions by touching the GO key. Touching any key other than the GO key ends the search.

(2) Example

Searching for LD M8000

Devices that cannot be searched

The following devices cannot be searched.
- Pointers, interrupt pointers
- Constant K, constant H, constant E
- Digit specification of bit device
- Special function unit/block buffer memory
- Devices specified with the operand of an applied instruction

Pointers and interrupt pointers can be searched for with command searches.

1. Command search
16.2.10 Writing commands

Writes a sequence program to the FX PLC. (Overwrite/Insert)

1. Writing basic commands

(1) Operations

(a) Inputting command only (Ex.: ANB, ORB command etc.)

```
MODE  GO
```

For overwriting: (WRITE mode)
For insertion: (INSERT mode)

(b) Inputting command and device (LD, AND commands etc.)

```
MODE  Input the command

Input the device name and device number
GO
```

For overwriting: (WRITE mode)
For insertion: (INSERT mode)

(c) Inputting command, No. 1 device, No. 2 device (MC, OUT (T, C) commands, etc.)

```
MODE  Input the command

Input the device name and device number

SP  Input the device name and device number
GO
```

(2) Example

(a) Writing ORB command

```
MODE  GO

< WRITE >
```

Set the WRITE or INSERT mode

With or , move the cursor to the position to overwrite/insert the command.

```
2 LDI M 100
3 MOV 12
D 0
D 10
```

```
4 LDI X 004
5 AND X 005
6 NOP
7 NOP
```

```
ORB GO
```

Moving the cursor to the position to write the command

When starting to write a command, place the cursor on the command line (the line on which the step number is displayed).

You cannot write a command with the cursor on an operand or set value line.

```
2 LDI M 100
3 MOV 12
D 0
D 10
```

Command line (Place the cursor on this line.)

Operand, set value line (Cannot operate on this line.)
(b) Inputting LD X000

Stop the FX PLC

< READ >

MODE

< WRITE >

Set the WRITE or INSERT mode.

With ↑ or ↓, move the cursor to the position to overwrite/insert the command.

(c) Inputting OUT T100 K19

Stop the FX PLC

< READ >

MODE

< WRITE >

Set the WRITE or INSERT mode.

With ↑ or ↓, move the cursor to the position to overwrite/insert the command.
2. Writing applied instructions

(1) Operation

--- Diagram ---

*1 D (double word command) and P (pulse execution format command) can also be input after the applied instruction number is input.

*2 Inputting in the order P → D is also possible.

*3 When a command specifies multiple devices for operations, input the SP key followed by the device name and device number.

POINT

(1) Moving the cursor to the position to write the command

When starting to write a command, place the cursor on the command line (the line on which the step number is displayed).

You cannot write a command with the cursor on any other line.

(2) Commands using a text string constant for a command operand (such as ASC command)

With the MELSEC-FX list editor, text string constants cannot be written as operands. (such as ASC commands)

Use GX Developer for writing such commands.

(2) Example

Input "DMOVP D0 D2".

--- Diagram ---
16.2.11 Changing operands, set values

Changes the operand section of an applied instruction and OUT (T, C) command set value.

1. Operation

   Stop the FX PLC  \( \xrightarrow{\text{MODE}} \)  SP  \( \xrightarrow{\text{Input the device name and device number}} \)  GO

   (Read mode)

   \*1 For decimal numbers, input K, then the number.
   For hexadecimal numbers, input H, then the number.

   POINT

   Moving the cursor to the line on which the operand or set value is to be changed
   When starting to change an operand or a set value, place the cursor on the line of the operand or set value to be changed (the line on which the step number is not displayed).
   If you place the cursor on the command line, the input operation is not possible.

2. Example

   Changing "MOV D0 D10" to "MOV D0 D123"

   - Stop the FX PLC
   - Set the WRITE mode.
   - Move the cursor to the changed location with ↑ or ↓

   (Example diagram)

   Before change:
   
   < READ >
   Mode
   3 MOV 12 D 0 D 10
   8 LD M 10

   After change:
   
   < WRITE >
   Mode
   3 MOV 12 D 0 D 123
   8 LD M 10
16.2.12 Deleting commands

Deletes one command at a time from a sequence program.

■1. Operation

POINT

When moving the cursor to the position where the command is to be deleted.
Place the cursor on the command line (the line on which the step number is displayed).
You cannot delete the command if the cursor is placed on the line of an operand or set value.

■2. Example

Deleting "OUT T10 K100"

Move the cursor to the command to be deleted with ▲, ▼ or the ▶ key.
16.2.13 Sequence program all clear

Clears all the sequence programs.

1. Operation

![Diagram of operation process]

2. Example

Clears all the sequence programs.

![Example diagram]

POINT

Items cleared when All Clear for a sequence program is performed

When All Clear is executed, the parameters before program execution are initialized and Latch Clear is executed.

The memory space becomes the default value, the comment area a 0 block, the file register space a 0 block, and keywords unregistered.

After All Clear, set the above parameters etc. again.
16.2.14 PLC diagnostics

Displays the FX PLC error message, error code, and step at which the error occurred.

1. Operation

![Diagram of PLC diagnostics screen]

■ 2. PLC diagnostics screen

The following describes the contents displayed on the PLC diagnostics screen and the function of on-screen key.

(1) Displayed contents

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Display contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Error message</td>
<td>Displays the error message. (I/O configuration error/PLC hardware error/PC/HPP communication error/Serial communication error/Parameter error/Syntax error/Circuit error/Operation error)</td>
</tr>
<tr>
<td>2)</td>
<td>Detail</td>
<td>Displays the error code.</td>
</tr>
<tr>
<td>3)</td>
<td>Step</td>
<td>Displays the step number in the sequence program at which the error occurred. (This is displayed only for a syntax error, circuit error, or operation error.)</td>
</tr>
</tbody>
</table>

POINT

Error details

For details of the FX PLC errors, refer to the following.

Programming manual for the FXCPU used
(2) **Key function**

The table below shows the functions of the keys that are used for the operation on the PLC diagnostics screen.

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>❌</td>
<td>Exits the PLC diagnostics.</td>
</tr>
</tbody>
</table>
16.2.15 Parameter setting

Sets FX PLC parameters.

1. Parameters that can be changed and change targets

(1) Parameters that can be changed
The parameters that can be changed with the MELSEC-FX list editor and the target FX PLCs are as follows.

<table>
<thead>
<tr>
<th>Item</th>
<th>Target CPU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory space setting</td>
<td></td>
</tr>
<tr>
<td>File register setting</td>
<td></td>
</tr>
<tr>
<td>Latch range setting</td>
<td></td>
</tr>
<tr>
<td>RUN terminal setting</td>
<td></td>
</tr>
<tr>
<td>Initialization of</td>
<td></td>
</tr>
</tbody>
</table>

*1 When connecting an FX0(S), set "0". Setting other than "0" causes a parameter error.
*2 When the parameters are initialized, the display on the MELSEC-FX list editor is different from the FX PLC default values, but do not change the latch range. Changing the latch range causes an error.

(2) Change targets
When a memory cassette is mounted, the parameters in the memory cassette are targeted for changes.

2. Operation

Stop the FX PLC \(\rightarrow\) OP \(\rightarrow\) [Parameter setting] \(\rightarrow\) GO

Stop the FX PLC \(\rightarrow\) OP \(\rightarrow\) Select [Parameter setting] with ↑ or ↓.

![Diagram](image)

*1 When checking parameters (not changing), it is not necessary to stop the PLC.
3. Parameter setting screen

The following describes the contents displayed on the PLC diagnostics screen and the function of on-screen key.

(1) Displayed contents

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Display contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Memory capacity</td>
<td>Sets the memory space (number of steps). If you touch the 3K section, you can change the memory space.</td>
</tr>
<tr>
<td>2)</td>
<td>File reg. capacity</td>
<td>Sets the memory space (number of blocks) allocated to the file register. Touch the □ section and input the number of blocks.</td>
</tr>
<tr>
<td>3)</td>
<td>Latch range</td>
<td>Sets the latch range (power failure hold area). Touch the number display section and input the value.</td>
</tr>
<tr>
<td>4)</td>
<td>RUN terminal input</td>
<td>Sets whether or not to use one of the FX PLC input terminals for RUN input. Touch the □ section and set the device to be set for the RUN terminal.</td>
</tr>
<tr>
<td>5)</td>
<td>Default</td>
<td>Initializes the parameters</td>
</tr>
</tbody>
</table>

POINT

(1) Memory space for kana comments after changing memory space, file register space
If the memory space is set smaller than the total of the file register space and kana comment space, the kana comment space is automatically reduced.
(With the MELSEC-FX list editor, the kana comment space is not displayed.)
Note that if any setting as described below is made, the kana comment space is reduced. (Settings that reduce kana comment space and the kana comment space after setting change)
Settings resulting in $N_m < N_f \times 500 + N_k \times 500 + 500$

$$\text{Kana comment space (steps) after setting change} = \frac{N_m-N_f \times 500-500}{500}$$

Nm: Memory space after change (steps)
Nf: File register space after change (blocks)
Nk: Comment space before change (blocks)

(2) Settable range and default value
The settable range and the default value depend on the FX PLC type.
For details of the settable range and the default value, refer to the following.
⇒ Programming manual for the FX PLC used

(2) Key functions
The table below shows the functions of the keys that are used for the operation on the parameter setting screen.

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>Initializes the parameters</td>
</tr>
<tr>
<td>OK</td>
<td>Completes the changed setting contents.</td>
</tr>
<tr>
<td>✗</td>
<td>Ends parameter setting.</td>
</tr>
</tbody>
</table>
16.2.16 Keyword

Registers, deletes, releases protection for, and sets protection for the FX PLC keywords.

1. Function usability of the MELSEC-FX list editor for keyword protection levels

The functions that can be used with the MELSEC-FX list editor depend on the keyword protection level.

- O: Available, x: Unavailable

<table>
<thead>
<tr>
<th>Function</th>
<th>Keyword protection level</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All operation protect (All on-line operation protect)(^2)</td>
<td>Read/Incorrect write protection (Read/write protect)(^2)</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Reading sequence programs</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Searching commands/devices</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Writing sequence programs</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Writing commands</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Changing operands/set values</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Inserting commands</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Deleting commands</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Sequence program all clear</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>PLC diagnostics</td>
<td>O(^1)</td>
<td>O</td>
</tr>
<tr>
<td>Parameter setting</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

\(^1\) When the 2nd keyword is set to an FX PLC that supports 2nd keyword, it becomes "x" (cannot be used).

\(^2\) The names within the parentheses ( ) are for when a keyword + 2nd keyword is set.

2. Operation

**OP** ➔ [Keyword setup] ➔ **GO**

**OP** ➔ Select [Keyword setup] with ▲ or ▼.

**GO**
3. **Keyword screen and protection level**

When [Keyword setup] is selected with the MELSEC-FX list editor, the keyword screen is displayed.

For the keyword operation, refer to the following.

➡️ 11.7 Keyword

**POINT**

**Keywords**

For details of the keyword, refer to the following.

➡️ Programming manual for the FX PLC used
16.2.17 List monitor

The status of contacts and coils in a sequence program is displayed.

1. Operation

![Operation Diagram]

When the list monitor is started on the FX list editor screen, the step numbers displayed on the FX list editor screen is displayed on the list monitor screen.

**POINT**

Starting list monitor with special function switches (FX list monitor)

With setting special function switches (FX list monitor), the list monitor can be started on the monitor screen.

When the list monitor is started on the monitor screen, the list editor cannot be used.

For how to set special function switches, refer to the following.

⇒ GT Designer3 (GOT2000) Help
2. Displays and key functions

The following describes the displays for the list monitor.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Display contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>List display area*1</td>
<td>The status of contacts and coils is displayed on the left of device displays.</td>
</tr>
<tr>
<td>2)</td>
<td>Keys</td>
<td>The same operations as in the READ mode of the FX list editor can be executed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➤ 16.2.8 Displaying sequence programs</td>
</tr>
<tr>
<td>3)</td>
<td>[×]</td>
<td>Ends the list monitor. (When the list monitor is executed on the FX list editor screen, the screen is switched to the FX list editor screen.)</td>
</tr>
</tbody>
</table>

*1 The status of contacts and coils is displayed as below.

<table>
<thead>
<tr>
<th>Type of instruction</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>■ Displayed ■ Not displayed</td>
</tr>
<tr>
<td>LD, AND, OR (Contact instruction (Normal open))</td>
<td>Contact</td>
<td>ON</td>
</tr>
<tr>
<td>LDI, ANI, ORI (Contact instruction (Normal close))</td>
<td>Contact</td>
<td>OFF</td>
</tr>
<tr>
<td>OUT, SET</td>
<td>TC: Coil</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>Except TC: Contact</td>
<td>ON</td>
</tr>
<tr>
<td>RST</td>
<td>TC: Reset</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>Word device</td>
<td>Value: 0</td>
</tr>
<tr>
<td></td>
<td>Except TC and word device: Contact</td>
<td>OFF</td>
</tr>
<tr>
<td>MC, STL</td>
<td>Contact</td>
<td>ON</td>
</tr>
<tr>
<td>LDP, ANDP, ORP, LDF, ANDF, ORF (Rise or fall contact instruction)</td>
<td>Not monitored</td>
<td>Always ■ not displayed</td>
</tr>
</tbody>
</table>

16.2.18 Action for an incorrect key input

If an incorrect key is input, cancel the input contents.

1. Operations

(1) Before touching the **GO** key (before reading/writing the input contents)

Before touching the **GO** key, touch the **CLR** key.

(2) After touching the **GO** key (after reading/writing the input contents)

Write the command again.

➤ 15.3.10 Writing commands

Commands finalized by writing and inserting operations are revised (overwritten) with the program writing.
16.2.19 Error messages and corrective actions

This section describes the error messages displayed when the MELSEC-FX list editor is executed, and corrective action.

<table>
<thead>
<tr>
<th>Error message</th>
<th>Description</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can not display while protected.</td>
<td>The all-operation protect, anti-plagiarism, or incorrect write protect keyword is set.</td>
<td>• Check the protected operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Clear the keyword protection or delete the keyword.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➤ 16.2.16 Keyword</td>
</tr>
<tr>
<td>Can not operate while protected.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC parameter error.</td>
<td>An FX PLC parameter is defective.</td>
<td>Set correct parameters in the FX PLC.</td>
</tr>
<tr>
<td>PLC communications error.</td>
<td>The communication with the FX PLC is defective.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check the FX PLC, cable, and GOT for abnormality.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check whether the communication settings are correct or not.</td>
</tr>
<tr>
<td>PLC is running.</td>
<td>A writing operation etc. has been made while the FX PLC.</td>
<td>Stop the FX PLC.</td>
</tr>
<tr>
<td>Can not write.</td>
<td>• The memory to write to is EPROM.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The protect switch of the EEPROM is on.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Set other than EPROM for the memory to write to.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Switch off the protect switch of the EEPROM.</td>
</tr>
<tr>
<td>Step number is out of a range.</td>
<td>The specified step number exceeded the maximum number.</td>
<td>Specify a step number below the maximum value.</td>
</tr>
<tr>
<td>Not found.</td>
<td>The specified command cannot be found.</td>
<td>Proceed to the next operation.</td>
</tr>
<tr>
<td>Not found.</td>
<td>The specified device cannot be found.</td>
<td>Proceed to the next operation.</td>
</tr>
<tr>
<td>Step overflow.</td>
<td>The program may exceed the available space.</td>
<td>Check the program memory space and delete commands to keep it within the space.</td>
</tr>
<tr>
<td></td>
<td>(Writing is not executed.)</td>
<td>➤ 16.2.12 Deleting commands</td>
</tr>
<tr>
<td>Command error.</td>
<td>An invalid command (non-existent command) was specified.</td>
<td>Input the correct command.</td>
</tr>
</tbody>
</table>

**POINT**

**How to erase an error message**

An error message is not erased even if the cause of the error is eliminated.

To erase an error message, touch a key on the MELSEC-FX list editor screen.
16.3 FX3U-ENET-ADP Communication Setting Function

In GX Works2, the communication set value of the FX3U-ENET-ADP stored in the CPU can be changed. This function is not available when the communication set value of the FX3U-ENET-ADP is not set in advance in the CPU.

POINT

Communication setting in the CPU

In GX Works2, set in advance the communication set value of the FX3U-ENET-ADP to the CPU. For the details of the communication setting, refer to the following.

⇒ FX3U-ENET-ADP User's manual

16.3.1 Specifications

1. System configuration

This section describes the system configuration of the FX3U-ENET-ADP communication setting function. For the setting method in each connection form, used communication unit/cable and cautions on connection form, refer to the following manual.

⇒ GOT2000 Series Connection Manual For GT Works3 Version1

2. Required basic system application

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic system application</td>
<td>-</td>
</tr>
<tr>
<td>Communication driver</td>
<td>MELSEC-FX</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

3. Connection type

(O: Applicable, △: Partly restricted, ×: Inapplicable)

<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
<th>Connection type between GOT and controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX3U-ENET-ADP communication setting function</td>
<td>The communication set value of the FX3U-ENET-ADP stored in the CPU can be changed.</td>
<td>Direct CPU connection: ○, GOT multidrop connection: ×</td>
</tr>
</tbody>
</table>

4. Communication setting items

The table below shows the communication setting items and setting range.

<table>
<thead>
<tr>
<th>Communication setting items</th>
<th>Setting range</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address</td>
<td>0.0.0.1 to 223.255.255.254</td>
<td>If a value outside the setting range is entered, the error message &quot;SET NUMBER IS INCORRECT.&quot; appears.</td>
</tr>
<tr>
<td>Subnet mask pattern</td>
<td>192.0.0.0 to 255.255.255.252</td>
<td></td>
</tr>
<tr>
<td>Default router IP address</td>
<td>0.0.0.1 to 223.255.255.254</td>
<td></td>
</tr>
</tbody>
</table>

*1 Set the value "0.0.0.0" when not using the subnet mask pattern and default router IP address.
16.3.2 Display operation of FX3U-ENET-ADP communication setting function

Main Menu

Touch [Debug]

When the communication set value of the FX3U-ENET-ADP is not stored in the CPU

When reading from the CPU is protected by the keyword

Touch [×]

Touch [FX3U-ENET-ADP]

When the communication set value of the FX3U-ENET-ADP is stored in the CPU

Touch [OK]

Setting does not exist.

Touch [OK]

This func is protected.

Touch [OK]
16.3.3 Setting operation

Step 1. Touch the numerical part of the octet to be changed among the 1st to 4th octets.

Step 2. When the ten-key pad appears, enter a numerical value in up to 3 digits, and touch the ENT key.
If a numerical value outside the setting range is entered, the following error message appears. Enter a numerical value again.

For the details of the setting range, refer to the following.

16.3.1 Specifications

Step 3. The changed IP address is displayed. At this time, the changed communication set value of the FX3U-ENET-ADP is not written to the CPU. Touch the [×] key.

Step 4. When the screen shown on the left appears, touch the ESC key.

Continued to next page
Step 5.

When the screen shown on the left appears, the changed communication set value of the FX3U-ENET-ADP is written normally to the CPU. For making valid the contents of setting, turn OFF the power of the CPU, and then turn it ON again. Change the setting of the subnet mask pattern and default router IP address using the same procedure if necessary. An error message appears in the following cases. Touch the [OK] key to return to the step 1., and perform the setting procedure again.

- When the CPU is running
  The following error message appears. Stop the running status of the CPU.

- When a communication error occurs
  Set the communication between the GOT and the CPU to the normal status.

- When the memory cassette is write-protected
  Set to OFF the write-protect switch of the memory cassette.

- When writing to the CPU is protected by the keyword
  Clear the protection by the keyword against writing.
POINT

When the CPU stores the symbolic information

When the setting such as IP address is changed using this function and then the program is read by the programming tool from the CPU that stores the symbolic information, the following warning appears. However, the changed value is read correctly. Convert and compile the project again.

MELSOFT Application

Completed.

Caution
The project contains uncompiled code.
Because the symbolic information file and program file do not match, only the symbolic information will be read.
Please execute Verify with PLC or Write to PLC after converting/compiling the project.

[Button: OK]
17. MAINTENANCE

17.1 Touch Panel Calibration

1. Touch panel calibration setting function

Touch panel reading error can be corrected. Normally the adjustment is not required, however, the difference between a touched position and the object position may occur as the period of use elapses. When any difference between a touched position and the object position occurs, correct the position with this function.

![Diagram showing before and after adjustment]

The [Run] will operate though you intended to touch the [Stop] button.

The [Stop] button can be touched without fail.

2. Touch panel calibration setting display operation

![Diagram showing main menu and maintenance menus with instructions]

Touch [Maintenance].

Calibration
Press on the center of mark, exactly.
3. Touch panel calibration operation

Touch [+] displayed on the screen with the finger one by one to make the setting.

Step 1. Touch the center of [+] displayed on the upper left precisely.

Step 2. Touch [+] displayed on the upper left.

Step 3. Touch [+] displayed on the upper right.

Step 4. Touch [+] displayed on the lower right.

Step 5. When the precise touch could not be made, touch the [YES] button to make the setting from Step 1 again.
17.2 Touch Panel Check

■ 1. Touch panel check function

Touch panel check function checks whether there is no dead zone area of 2 dots × 2 dots.

■ 2. Display operation of Touch panel check

![Diagram showing the display operation of Touch panel check]

**POINT**

Notes on Touch panel check

If the touched part is not filled with yellow color, there are the following two possible causes.
1. Display part failure
2. Touch panel failure

In that case, contact your local Mitsubishi (Electric System) Service.
3. Touch panel check operations

If touch [Panel check] of self-check, a black-filled screen is displayed over the entire screen area.

Step 1. Touch a part of the screen. The touched part becomes a yellow-filled display. Up to 40 parts becomes yellow-filled displays.

Step 2. If [×] on the upper right is touched, the screen returns to the self-check.

POINT

Checking the upper left part of the screen

Only the upper left part of the screen cannot be filled with yellow. If the screen returns to the self-check by touching the upper left part, judge that the upper left area operates normally.
17.3 Clean

In utility, the screen can be set as not to be effected by touching the screen when clean with clothes. For cleaning method, refer to the following.

 ➤ 21.3 Cleaning Method

■ 1. Display operation of clean

Touch [Maintenance].

Touch [Clean].

Step 1. Touching the [x] key closes the screen. Even if touch points other than the upper left corner and upper right corner of the screen, the GOT does not operates.

For details of cleaning method, refer to the following.

 ➤ 21.3 Cleaning Method
18. BootOS and System Application Installation Using Data Storage

There are the following two types for the installation of BootOS and system applications using a data storage.

1. Installing when starting the GOT

   ➤ 18.1 Installing when starting the GOT

   All the system applications and project data stored in the data storage are transferred to the GOT when powering on the GOT. This installing method is effective in the following cases.
   • The GOT utility cannot be displayed.
   • The system application is not installed.

2. Installing using the data control function (Utility)

   ➤ 18.1 Installing when starting the GOT

   By operating the utility, select the system application or project data stored in the data storage and transfer them to the GOT.

**POINT**

Precautions on installing BootOS, system applications

1. Installing both BootOS and system applications

   After completing BootOS installation, install system applications. When installing BootOS, the built-in flash memory in the GOT is initialized and goes to the status at factory shipment. (All system applications and project data are erased.)

   **BootOS is installed in the GOT at factory shipment. It is not necessary to install BootOS when not upgrading it.**

2. Installation cannot be interrupted.

   Do not perform any of the following during a BootOS or system application installation. Failure to do so may result in installation failure, causing the GOT malfunction.
   • Powering off the GOT
   • Pressing the reset button of the GOT
   • Removing the data storage

   If the installation failure and the GOT malfunction occur, take the following action.
   • If BootOS installation failed:
     ➤ Please consult your local Mitsubishi (Electric System) Service center or representative.
   • If the basic system application installation failed:
     ➤ 18.1 Installing when starting the GOT
18.1 Installing when starting the GOT

(1) When installing with an SD card

**Step 1.** Power OFF the GOT, and install the SD card where the BootOS, system application or project data is stored in the SD card interface of the GOT.

**Step 2.** Power on the GOT. While touching the lower right side of the GOT screen, power on the GOT. (1-point press installation function)

**Step 3.** The BootOS or system application is installed in the built-in flash memory. Do not pull out the SD card or power OFF the GOT.

**Step 4.** The GOT restarts automatically after the installation is completed.

**Step 5.** After confirming normal restart, confirm that the SD card access LED is not lit, and remove the SD card from the SD card interface of the GOT.

18.2 Installing using the data control function (Utility)

1. Operation procedure

**Step 1.** Power OFF the GOT, and attach the SD card which stores the basic system application and communication driver to the GOT.

**Step 2.** While touching the upper left corner of the GOT screen, power ON the GOT.

**Step 3.** When the screen shown on the left appears, select the [Data copy].

For details of install, refer to the following.

⇒ 15.7 Data Copy
19. INSTALLATION OF Boot OS AND BASIC SYSTEM APPLICATION

To execute the GOT utility, install the Boot OS and system applications on the C drive (built-in flash memory) of the GOT, or set the boot drive of the package data to [A: Standard SD card] and insert an SD card with the package data into the GOT. (Boot OS is installed in the GOT at factory shipment. It is not necessary to install Boot OS when upgrading of it is unnecessary.)

This chapter explains the installation using GOT.

Refer to the following for the installation which uses GT Designer3.

➤ GT Designer3 (GOT2000) Help

19.1 Boot OS and Basic System Application to be Installed

Under-mentioned Boot OS and basic system application are necessary to execute utility.

<table>
<thead>
<tr>
<th>System application name</th>
<th>Function overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boot OS</td>
<td>Required for the control of GOT and the communication between PC and GOT. Installed at factory shipment. (Boot OS can also be installed from GT Designer3. When Boot OS is installed, the GOT is initialized and goes to the status at factory shipment. When Boot OS needs to be reinstalled, the basic system application has to be installed in the GOT.)</td>
</tr>
<tr>
<td>System application</td>
<td>Required for the GOT operation as the monitoring function of GOT, installation and deletion of the system application or project data, touch key control or display function of the screen and guidance. Required for display and operation of the user-created screen and utility screen. Not installed in GOT at factory shipment. Install it from GT Designer3 or an SD card.</td>
</tr>
</tbody>
</table>
19.2 Prior Preparations for Installing Boot OS and System Application

For the installation using GOT, the data storage that is storing Boot OS or the system application is required. There are the following three methods for the installation of Boot OS and system application.

1. [To Memory Card] from GT Designer3
   ➤ GT Designer3 (GOT2000) Help

2. Uploading from another GOT (the package data has been installed)
   ➤ 18. BootOS and System Application Installation Using Data Storage

3. Using an SD card that stores data with OS boot drive set to A drive
   ➤ GT Designer3 (GOT2000) Help

**POINT

Precautions when installing Boot OS and the package data into an SD card

When installing Boot OS and the package data into the SD card, be sure to execute by the utility of another GOT or GT Designer3.

The installation is not executed properly with the SD card to which data is uploaded from the utility of GOT or copied by software other than GT Designer3.

Note the available capacity of the SD card.

The available capacity of Boot OS and system applications can be confirmed by [To Memory Card] or [Write Option] of GT Designer3.

[Diagram of available space of data and system application]

Available space of the data

Available space of the system application
This chapter describes the error message and the corrective actions displayed on the GOT.

<table>
<thead>
<tr>
<th>Error message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCREEN DOES NOT EXIST.</td>
<td>• Specified base screen does not exist in the project data.</td>
</tr>
<tr>
<td></td>
<td>• Specified base screen is out of the permissible area.</td>
</tr>
<tr>
<td></td>
<td>Specify the existing base screen.</td>
</tr>
<tr>
<td>SCREEN ERROR</td>
<td>The monitored device No. is out of the permissible area of the targeted PLC CPU. Set the device within the range that can be monitored by the monitored PLC CPU and parameter settings.</td>
</tr>
<tr>
<td>COMM. ERROR</td>
<td>Error occurred while writing in the device.</td>
</tr>
<tr>
<td></td>
<td>• Check the cable omission and the status of the PLC.</td>
</tr>
<tr>
<td>DEVICE ERROR.</td>
<td>Error occurred while writing in the device</td>
</tr>
<tr>
<td></td>
<td>Correct the device.</td>
</tr>
<tr>
<td>SET NUMBER IS INCORRECT.</td>
<td>The input value was illegal when writing to the device.</td>
</tr>
<tr>
<td></td>
<td>Check the input value.</td>
</tr>
<tr>
<td>PLC IS RUNNING.</td>
<td>The operation, which could not be performed during RUN of PLC CPU, was performed. Stop the PLC CPU.</td>
</tr>
<tr>
<td>CAN NOT WRITE.</td>
<td>The memory cassette installed in the PLC CPU is EPROM or E2PROM, and it is in a protected status. Confirm the memory cassette installed in PLC CPU.</td>
</tr>
<tr>
<td>THIS FUNC IS PROTECTED.</td>
<td>The key word is set in PLC CPU. Cancel the key word.</td>
</tr>
<tr>
<td>CAN NOT USE THE FUNCTION.</td>
<td>The function cannot be used with the package data configuration written in the GOT.</td>
</tr>
<tr>
<td></td>
<td>• Review the package data configuration.</td>
</tr>
<tr>
<td></td>
<td>• Install the latest version of GT Designer3 and write the package data again to the GOT.</td>
</tr>
<tr>
<td>DATA IS NOT FOUND.</td>
<td>The package data is not downloaded or the package data is not sufficient. Download the package data.</td>
</tr>
<tr>
<td>PASSWORD IS INCORRECT.</td>
<td>The input password does not match the security level password or the utility start-up password. Check the target password.</td>
</tr>
<tr>
<td>Password cannot be changed because you are not logged in.</td>
<td>When authenticating the operator, the password cannot be changed before logging in. Log in.</td>
</tr>
<tr>
<td>The password does not match, the GOT cannot be booted.</td>
<td>The passwords for transmitting the data from package data on Drive C and package data directly started from memory card do not match, so the GOT cannot be started. Match the data transmission passwords.</td>
</tr>
</tbody>
</table>
### 21. MAINTENANCE AND INSPECTION

#### STARTUP AND MAINTENANCE PRECAUTIONS

**WARNING**

- When power is on, do not touch the terminals. Doing so can cause an electric shock or malfunction.
- Before starting cleaning or terminal screw retightening, always switch off the power externally in all phases. Not doing so can cause the unit to fail or malfunction.
- Undertightening can cause a short circuit or malfunction. Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.

#### STARTUP AND MAINTENANCE PRECAUTIONS

**CAUTION**

- Do not disassemble or modify the unit. Doing so can cause a failure, malfunction, injury or fire.
- Do not touch the conductive and electronic parts of the unit directly. Doing so can cause a unit malfunction or failure.
- The cables connected to the unit must be run in ducts or clamped. Not doing so can cause the unit or cable to be damaged due to the dangling, motion or accidental pulling of the cables or can cause a malfunction due to a cable connection fault.
- When unplugging the cable connected to the unit, do not hold and pull from the cable portion. Doing so can cause the unit or cable to be damaged or can cause a malfunction due to a cable connection fault.
- Before touching the unit, always touch grounded metals, etc. to discharge static electricity from human body, etc. Not doing so can cause the unit to fail or malfunction.

#### DISPOSAL PRECAUTIONS

**CAUTION**

- When disposing of this product, treat it as industrial waste.

The GOT does not include consumable components that will cause the shorten life. However, the liquid crystal screen and backlight have life length. For the life of the LCD screen or backlight, refer to the following.

⇒ 3.2 Performance Specifications
21.1 Daily Inspection

1. Daily inspection items

<table>
<thead>
<tr>
<th>Item</th>
<th>Inspection Item</th>
<th>Inspection Method</th>
<th>Criterion</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GOT mounting status</td>
<td>Check for loose mounting screws.</td>
<td>Securely mounted</td>
<td>Retighten screws within the specified torque range</td>
</tr>
<tr>
<td>2</td>
<td>Connection status</td>
<td>Loose terminal screws</td>
<td>Retighten screws with screwdriver</td>
<td>Not loose</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proximate solderless terminals</td>
<td>Visual check</td>
<td>Proper space</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loose connectors</td>
<td>Visual check</td>
<td>Not loose</td>
</tr>
<tr>
<td>3</td>
<td>Usage status</td>
<td>Foreign material attachment</td>
<td>Visual check</td>
<td>No foreign matter sticking</td>
</tr>
</tbody>
</table>

21.2 Periodic Inspection

1. Yearly or half-yearly inspection items

The following inspection should also be performed when equipment has been moved or modified or the wiring changed.

<table>
<thead>
<tr>
<th>Item</th>
<th>Inspection Item</th>
<th>Inspection Method</th>
<th>Criterion</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Surrounding environment</td>
<td>Ambient temperature</td>
<td>Make measurement with thermometer or hygrometer.</td>
<td>0 to 50°C For use in control panel, temperature inside control panel is ambient temperature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ambient humidity</td>
<td>Measure corrosive gas.</td>
<td>10 to 90%RH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Atmosphere</td>
<td></td>
<td>No corrosive gas</td>
</tr>
<tr>
<td>2</td>
<td>Power supply voltage check</td>
<td>24VDC Measure voltage across terminals.</td>
<td>20.4 to 26.4VDC</td>
<td>Change supply power</td>
</tr>
<tr>
<td>3</td>
<td>Mounting status</td>
<td>Looseness</td>
<td>Move module</td>
<td>Should be mounted firmly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foreign material attachment</td>
<td>Visual check</td>
<td>No foreign matter sticking</td>
</tr>
<tr>
<td>4</td>
<td>Connection status</td>
<td>Loose terminal screws</td>
<td>Retighten screws with screwdriver</td>
<td>Not loose</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proximate solderless terminals</td>
<td>Visual check</td>
<td>Proper space</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loose connectors</td>
<td>Visual check</td>
<td>Not loose</td>
</tr>
</tbody>
</table>
21.3 Cleaning Method

Use the GOT always in a clean condition. To clean the GOT, wipe the dirty part with a soft cloth using neutral detergent. For the display operation of the [Clean] screen, refer to the following.

➡️ 17.3 Clean

POINT

Precautions for cleaning
Do not use chemicals such as thinner, organic solvents and strong acids, since they may cause the protective sheet to be deformed or the dissolvable paint on the surface to peel off. In addition, do not use spray solvents since they may cause the electrical failure of the GOT and peripheral devices.
21.4 Backlight Shutoff Detection

A GOT has a built-in backlight for the liquid crystal display. When a GOT detects the backlight shutoff, the POWER LED alternately flashes with orange/green color. The brightness of the backlight degrades as the usage period passes. Replace the backlight when it is shut off or the display gets blurry.

For the replacement of the backlight, contact your local distributor.

(1) Backlight life

The usage period of the backlight can be extended by setting [Screen saving backlight off] in the GOT utility function (GOT setup). For details, refer to the following.

⇒ 12. DISPLAY AND OPERATION SETTINGS (GOT SET UP)

21.4.1 Backlight shutoff detection and external alarm

When the GOT has detected that the backlight is shut off, the system information set by using drawing software is turned on. The information of the backlight shutoff can be output from a PLC to an external device (such as lamp and buzzer) by using the system information. An alarm for prevention of touch operation should be set and the external interlock should also be set for the dangerous load.

For system information details, refer the following.

⇒ GT Designer3 (GOT2000) Help

POINT

(1) Example of alarm for external devices (such as lamp and buzzer)

System information is used to output the backlight shutoff detection signal from a FX series PLC to an external device.
Condition: The write device is D20 and all data is used (the [Select All] button on the setting screen of drawing software is clicked) for the system information assignment.
D36 b14: Backlight shutoff detection (System number 2-2)
This signal turns on when the backlight shutoff is detected.
This signal is used in a sequence programs shown below.

<table>
<thead>
<tr>
<th>RUN monitor</th>
<th>MOV</th>
<th>D36</th>
<th>K4M20</th>
<th>M34</th>
<th>Y***</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backlight shutoff detection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output to external device of PLC Activated the output upon backlight shutoff detection.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*indicates the output number at which the external device is connected.

(2) Caution when the backlight is shut off

Even when the backlight is shut off, the touch keys are available. Replace the dead backlight as soon as possible.
22. TROUBLESHOOTING

This chapter describes the GOT restoration sheets and the lists of error messages and system alarms.

22.1 GOT Restoration Sheets

This section describes how to restore the GOT that operates improperly in the check sheet format.

The following describes how to use each sheet.

(1) **When the GOT does not operate or operates improperly (GOT status check sheet)**

   When the GOT does not operate or operates improperly, check the cause of a malfunction by following the GOT status check sheet and take corrective actions.

   After the GOT is restored, see how the GOT works.

(2) **When wiring needs to be modified (GOT installation status check sheet)**

   When the check (1) is performed and then noise and other failures generated by improper wiring of the GOT are considered as the cause of the malfunction, modify the wiring by following the GOT installation status check sheet.

   After the GOT is restored, see how the GOT works.

(3) **When corrective actions other than the above (1) and (2) are required (System configuration check sheet)**

   If the GOT still does not operate or operates improperly even though the check (1) and (2) are performed and the corrective actions are taken, write the system configuration used on the system configuration check sheet and contact your local distributor.

   When sending the actual product, attach the GOT restoration sheets (GOT status check sheet, GOT installation status check sheet, and System configuration check sheet) which are checked in this section.

   Keep a copy of each sheet.
## 1. GOT status check sheet

Start the check from (1) GOT status.
Follow the instructions in the corrective action column.

### (1) GOT status

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Cause/Status</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Frequency of a case where the GOT does not operate or the screen is not displayed properly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Always</td>
<td>Frequency: (Example: Once a month)</td>
<td>Go to (1)-(b).</td>
</tr>
<tr>
<td>□ Sometimes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) The display of an error code (system alarm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Can be confirmed</td>
<td>Error code (system alarm): (Example: 460 Communication unit error)</td>
<td>Take corrective actions for the confirmed error code (system alarm) and error message. If the status does not change even after the corrective actions are taken, go to (1)-(c).</td>
</tr>
<tr>
<td>□ Cannot be confirmed</td>
<td></td>
<td>Go to (1)-(c).</td>
</tr>
<tr>
<td>(c) Screen display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ The screen is entirely black.</td>
<td>The possible cause is a failure of the liquid crystal or an error of the Boot OS.</td>
<td>Take corrective actions in the following order. 1) Re-install the Boot OS. 2) Re-install the standard monitor OS. When the GOT is still not restored after Action 1) and 2) are taken, perform the following. If the GOT is still not restored, go to (5) Actual product investigation.</td>
</tr>
<tr>
<td>□ The screen is entirely white.</td>
<td>The possible cause is a hardware failure of the GOT.</td>
<td>Go to (5) Actual product investigation.</td>
</tr>
<tr>
<td>□ A line appears on the screen.</td>
<td>The possible cause is a hardware failure of the GOT. Example: A vertical line appears on the screen.</td>
<td>Go to (5) Actual product investigation.</td>
</tr>
<tr>
<td>□ Other display errors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ The screen is frozen.</td>
<td>The screen display is not updated and the screen cannot be operated.</td>
<td>Go to (1)-(d).</td>
</tr>
<tr>
<td>(d) Buzzer sound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ No buzzer sound</td>
<td>Buzzer sound: (Example: The buzzer repeats in the rhythm of “beep-beep-beep, beep, beep-beep”.</td>
<td>Go to (2) Status where the GOT screen is frozen.</td>
</tr>
<tr>
<td>□ Beeps randomly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Beeps in a pattern</td>
<td>The possible cause is the activated buzzer output signal. When the reading device of the system information is set, the device may be turned on and the buzzer output signal may be activated.</td>
<td>Check the setting of the reading device. When the buzzer output signal has no error, proceed to (2) Status where the GOT screen is frozen.</td>
</tr>
<tr>
<td>□ Beeps without a pause</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Status where the GOT screen is frozen (When the screen operation stops)

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Cause/Status</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Switching to the utility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Enabled</td>
<td>Error code (system alarm): ( Example: 460 Communication unit error )</td>
<td>When the system alarm display function can be used, take corrective actions for the displayed error code (system alarm). Otherwise, go to (2)-(b).</td>
</tr>
<tr>
<td>□ Disabled</td>
<td>The system alarm display function cannot be used.</td>
<td>Go to (2)-(c).</td>
</tr>
<tr>
<td>(b) I/O check with the utility of the GOT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Communication fault</td>
<td>Display contents: ( Example: A message that indicates the possible cause is a connection failure is displayed. )</td>
<td>Go to (2)-(c).</td>
</tr>
<tr>
<td>□ No error</td>
<td>Hardware such as the communication interface has no error.</td>
<td>Go to (3) PLC CPU status.</td>
</tr>
<tr>
<td>(c) Objects that are not displayed on the monitor screen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Exists</td>
<td>Detail: ( Example: The numerical display is not displayed. )</td>
<td>Go to (3) PLC CPU status.</td>
</tr>
<tr>
<td>□ None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## PLC CPU status

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Cause/Status</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) PLC error</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Always</td>
<td>The possible cause is CONTROL-BUS. ERROR, SP. UNIT LAY. ERROR, or other errors. Error code (system alarm): ( Example: 1204 CPU H/W fault )</td>
<td>Go to the following. ➤ 22.1</td>
</tr>
<tr>
<td>□ Sometimes</td>
<td>The possible cause is noise or a hardware failure. Frequency: ( Example: Once a month )</td>
<td>Go to (4) GOT restoration procedure.</td>
</tr>
<tr>
<td>□ Normal operation</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
(4) **GOT restoration procedure**

Follow the procedures in order from (a) and check if the GOT is restored. If the GOT is still not restored, go to the next step.

<table>
<thead>
<tr>
<th>Check item</th>
<th>Cause</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) The GOT is restored by using the reset switch on the GOT.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Restored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Not restored (Go to b.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) The GOT is restored by powering on and off the GOT.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Restored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Not restored (Go to c.)</td>
<td></td>
<td>It may be a temporary malfunction due to noise.</td>
</tr>
<tr>
<td>(c) The GOT is restored by resetting or powering on and off the PLC CPU.</td>
<td></td>
<td>Take the corrective action described in (4)-(h).</td>
</tr>
<tr>
<td>□ Restored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Not restored (Go to d.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) The GOT is restored by powering on and off the GOT and the PLC CPU simultaneously.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Restored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Not restored (Go to e.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) The GOT is restored by reconnecting cables.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Restored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Not restored (Go to f.)</td>
<td></td>
<td>The possible cause is a cable connection fault.</td>
</tr>
<tr>
<td>(f) The GOT is restored by reinstalling project data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Restored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Not restored (Go to g.)</td>
<td></td>
<td>In such a case where the GOT is powered off during installation of project data or OS, the data may be corrupted.</td>
</tr>
<tr>
<td>(g) The GOT is restored by reinstalling OS.</td>
<td></td>
<td>Do not power off the GOT during data transmission.</td>
</tr>
<tr>
<td>□ Restored</td>
<td></td>
<td>When the error occurs again, go to (5) Actual product investigation.</td>
</tr>
<tr>
<td>□ Not restored (Go to h.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(h) The GOT is restored by taking corrective actions against noise described in the corrective action column.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Restored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Not restored (Go to i.)</td>
<td></td>
<td>It may be a temporary malfunction due to noise.</td>
</tr>
<tr>
<td>(i) The GOT is not restored even after the corrective actions in (a) to (h) are taken.</td>
<td></td>
<td>Take corrective actions by following the GOT installation status check sheet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 Before powering on the GOT again (OFF → ON), make sure to power off the PLC.

(5) **Actual product investigation**

When the GOT still operates improperly even after the corrective actions described above are taken, contact your local distributor. Depending on the error status, the actual product may need to be returned to us. In that case, attach the GOT status check sheet, GOT installation status check sheet, and system configuration check sheet (Write down your system configuration used on the sheet).
2. GOT installation status check sheet

Check the actual installation status of the GOT used according to the GOT installation status described in the upper rows of items (1) to (7). When the corrective actions described in the lower rows need to be taken, take the actions. Only when the corrective actions are taken, put a check mark in the check box of "Effective" or "Ineffective" depending on the results of the actions.

(1) Wiring inside

**Actual status**

Power lines such as power supply cables or servo amplifier drive cables and communication cables are crossed each other in the wiring duct in the control panel.

<table>
<thead>
<tr>
<th>Crossed</th>
<th>Not crossed</th>
</tr>
</thead>
</table>

**Corrective action**

Wiring the power lines and the communication cables to keep them away from each other in the control panel will help minimize noise interference.

<table>
<thead>
<tr>
<th>Effective</th>
<th>Ineffective</th>
</tr>
</thead>
</table>

(2) Outside the panel

**Actual status**

Power lines and communication cables are bundled together.

<table>
<thead>
<tr>
<th>Bundled</th>
<th>Not bundled</th>
</tr>
</thead>
</table>

**Corrective action**

Setting outlets of the power lines and the communication cables separately, as shown in Figure A, will help minimize noise interference. In the duct, keeping the communication cables away from the power lines or using a metal separator, as shown in Figure B, can reduce noise interference.

<table>
<thead>
<tr>
<th>Effective</th>
<th>Ineffective</th>
</tr>
</thead>
</table>
### (3) Wiring of the GOT’s FG cables and power lines

<table>
<thead>
<tr>
<th>Actual status</th>
<th>The GOT’s FG cables and power lines are bundled together.</th>
<th>☐ Bundled</th>
<th>☐ Not bundled</th>
</tr>
</thead>
</table>

#### Corrective action for when they are bundled

<table>
<thead>
<tr>
<th>Corrective action</th>
<th>Keeping the GOT’s FG cables and power lines away from each other will help minimize noise interference.</th>
<th>☐ Effective</th>
<th>☐ Ineffective</th>
</tr>
</thead>
</table>

#### Entry columns for surge suppressors

<table>
<thead>
<tr>
<th>Model of surge suppressor</th>
<th>Device for which the surge suppressor is used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### (4) Countermeasures to prevent surges

<table>
<thead>
<tr>
<th>Actual status</th>
<th>Surge suppressors are used for wiring equipment (loads) such as no fuse breakers, electromagnetic contactors, relays, solenoid valves, and induction motors. (When surge suppressors are used, write their models and the names of devices for which the surge suppressors are used in the following table.)</th>
<th>☐ Used</th>
<th>☐ Not used</th>
</tr>
</thead>
</table>

#### Corrective action for when surge suppressors are not used

<table>
<thead>
<tr>
<th>Corrective action</th>
<th>Using surge suppressors on the wiring near loads can reduce interference of the GOT surge.</th>
<th>☐ Effective</th>
<th>☐ Ineffective</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Model of surge suppressor</th>
<th>Device for which the surge suppressor is used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**GOT Restoration Sheets**
## (5) Installation status

### Actual status

![Diagram showing FG cables of control equipment and power equipment connected in Figure A.]

The FG cables of control equipment (such as a PLC) and power equipment (such as a servo amplifier) are connected each other as shown in a.

<table>
<thead>
<tr>
<th>True</th>
<th>False</th>
</tr>
</thead>
</table>

### Corrective action for when it is true

Carry out the independent grounding at two points as shown in Figure A. Independent grounding will help minimize noise interference.

- Effective
- Ineffective

If the independent grounding is impossible, carry out the shared grounding as shown in Figure B.

![Diagram showing shared grounding in Figure B.]

### Figure A

- Carry out the independent grounding at two points.
- Independent grounding will help minimize noise interference.
- If the independent grounding is impossible, carry out the shared grounding.

### Figure B

- Carry out the shared grounding.
- Shared grounding helps in noise interference.
<table>
<thead>
<tr>
<th>Actual status</th>
<th>A ground cable is led from the control panel where control equipment such as a PLC is installed to the control panel where the GOT is installed.</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
</table>

**Figure A**

> Connecting a ground cable to the panel where the GOT is installed as shown in Figure A reduces electric potential difference between the ground points, which may avoid malfunction of the GOT.

If the wiring shown in Figure A cannot be carried out, perform the wiring as shown in Figure B.

**Effective** | **Ineffective** |

**Figure B**

> Attaching a ferrite core to the ground cable connected to the control panel where the GOT is installed, as shown in Figure C, will help minimize noise interference.

If the wiring shown in Figure C cannot be carried out, perform the wiring as shown in Figure D.

**Effective** | **Ineffective** |
### Power supply system

#### Actual status

I/O equipment (such as a relay) and power equipment (such as a servo amplifier) use the power supply in the same system as the one of the GOT.

<table>
<thead>
<tr>
<th>True</th>
<th>False</th>
</tr>
</thead>
</table>

#### Corrective action for when it is true

Carry out the wiring with the power supply of the GOT separated from the one of the I/O equipment and power equipment and connect an isolation transformer. This will help minimize noise interference.

<table>
<thead>
<tr>
<th>Effective</th>
<th>Ineffective</th>
</tr>
</thead>
</table>

![Diagram](image-url)
3. System configuration check sheet

Write the model of each unit in the following square brackets ([ ]).

(1) System configuration of the GOT

<table>
<thead>
<tr>
<th>(a) GOT</th>
<th>[ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) Communication interface</td>
<td>[ ]</td>
</tr>
<tr>
<td>(c) Cable between the PLC and GOT</td>
<td>[ ]</td>
</tr>
<tr>
<td>(d) Cable length</td>
<td>[ m ]</td>
</tr>
</tbody>
</table>

(2) System configuration of the PLC

<table>
<thead>
<tr>
<th>(a) Power supply unit</th>
<th>[ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) CPU module</td>
<td>[ ]</td>
</tr>
<tr>
<td>(c) Serial communication unit</td>
<td>[ ]</td>
</tr>
<tr>
<td>/computer link unit</td>
<td>[ ]</td>
</tr>
<tr>
<td>(d) Network unit</td>
<td>[ ]</td>
</tr>
<tr>
<td>/ Not used</td>
<td>[ ]</td>
</tr>
<tr>
<td>/ Not used</td>
<td>[ ]</td>
</tr>
<tr>
<td>(e) Interrupt module</td>
<td>[ ]</td>
</tr>
<tr>
<td>/ Not used</td>
<td>[ ]</td>
</tr>
<tr>
<td>(f) Positioning module</td>
<td>[ ]</td>
</tr>
<tr>
<td>/ Not used</td>
<td>[ ]</td>
</tr>
<tr>
<td>(g) Number of extended PLC stages</td>
<td>[ ]</td>
</tr>
<tr>
<td>(h) When other units or devices are used, write their names.</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Entry column for writing the status of the phenomenon (when the GOT still operates improperly after corrective actions are taken)

(3) Write the details of the error operations. (Such as when the GOT screen is frozen or the screen is displayed improperly)
23. CONNECTION

This chapter describes connection types which are supported by GOT SIMPLE series. Refer to the following manuals.

GOT2000 Series Connection Manual (Mitsubishi Product) For GT Works3 Version1*1
GOT2000 Series Connection Manual (Non Mitsubishi Product 2) For GT Works3 Version1*1
GOT2000 Series Connection Manual(Microcomputer, MODBUS, Products, Peripherals) For GT Works3 Version1*1

*1 An icon, is given in these manuals.
   The icon indicates the following.
   - The presence of refers to the connection type supported by the GOT SIMPLE series.
   - The absence of refers to the connection type unsupported by the GOT SIMPLE series.
Appendix.1  External Dimensions

1. GS2110-WTBD

The thickness of the panel face is 1.6 to 4mm.

Unit: mm (inch)
The thickness of the panel face is 1.6 to 4mm.

Unit: mm (inch)

M2.6 (Metric screw thread)

#4-40UNC (Inch screw thread)
### 3. Communication cable

**GT01-C30R4-25P**

Unit: mm (inch)

<table>
<thead>
<tr>
<th>Value</th>
<th>L length (mm (inch))</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>10000 (393.7&quot;)</td>
</tr>
<tr>
<td>200</td>
<td>20000 (787.4&quot;)</td>
</tr>
<tr>
<td>300</td>
<td>30000 (1181.1&quot;)</td>
</tr>
</tbody>
</table>

**GT01-C30R4-8P**

Unit: mm (inch)

<table>
<thead>
<tr>
<th>Value</th>
<th>L length (mm (inch))</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1000 (39.37&quot;)</td>
</tr>
<tr>
<td>30</td>
<td>3000 (118.11&quot;)</td>
</tr>
<tr>
<td>100</td>
<td>10000 (393.7&quot;)</td>
</tr>
<tr>
<td>200</td>
<td>20000 (787.4&quot;)</td>
</tr>
<tr>
<td>300</td>
<td>30000 (1181.1&quot;)</td>
</tr>
<tr>
<td>Print Date</td>
<td>Manual Number</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Jan., 2014</td>
<td>JY997D52901A</td>
</tr>
<tr>
<td>Jul., 2014</td>
<td>JY997D52901B</td>
</tr>
<tr>
<td>Feb., 2014</td>
<td>JY997D52901C</td>
</tr>
<tr>
<td>Oct., 2014</td>
<td>JY997D52901C</td>
</tr>
<tr>
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<td>JY997D52901D</td>
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<tr>
<td>Dec., 2015</td>
<td>JY997D52901E</td>
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<tr>
<td>May, 2016</td>
<td>JY997D52901F</td>
</tr>
<tr>
<td>Jan., 2017</td>
<td>JY997D52901G</td>
</tr>
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<td>Apr., 2017</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Jan., 2019</td>
<td>JY997D52901I</td>
</tr>
<tr>
<td>Jan., 2020</td>
<td>JY997D52901J</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This manual confers no industrial property rights or any rights of any other kind, nor does it confer any patent licenses. Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.
WARRANTY

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be replaced at no cost via the sales representative.

[Gratis Warranty Term]

The gratis warranty term of the product shall be for twelve (12) months after the date of purchase or delivery to a designated place.
Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months.

[Gratis Warranty Range]

(1) The customer shall be responsible for the primary failure diagnosis unless otherwise specified.
(2) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.
(3) Even within the gratis warranty term, the following cases are not guaranteed.

1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
2. Failure caused by unapproved modifications, etc., to the product by the user.
3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
4. Failure that could have been avoided if consumable parts designated in the instruction manual had been correctly serviced or replaced.
5. Replacing consumable parts such as the battery, backlight and fuses.
6. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
7. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
8. Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

2. Repair and Analysis

The repair and the failure analysis are not executed to the product.

3. Discontinuation of production

(1) Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.
(2) Product supply (including spare parts) is not available after production is discontinued.

4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

5. Changes in product specifications

The specifications given in the catalogs, manuals or technical documents are subject to change without prior notice.

6. Product application

(1) In using the Mitsubishi graphic operation terminal, the usage conditions shall be that the application will not lead to a major accident even if any problem or fault should occur in the graphic operation terminal device, and that backup and fail-safe functions are systematically provided outside of the device for any problem or fault.
(2) The Mitsubishi graphic operation terminal has been designed and manufactured for applications in general industries, etc. Thus, applications in which the public could be affected such as in nuclear power plants and other power plants operated by respective power companies, and applications in which a special quality assurance system is required, such as for Railway companies or Public service purposes shall be excluded from the graphic operation terminal applications.

In addition, applications in which human life or property that could be greatly affected, such as in aircraft, medical applications, incineration and fuel devices, manned transportation equipment for recreation and amusement, and safety devices, shall also be excluded from the graphic operation terminal range of applications.
However, in certain cases, some applications may be possible, providing the user consults the local Mitsubishi representative outlining the special requirements of the project, and providing that all parties concerned agree to the special circumstances, solely at our discretion.

In some of three cases, however, Mitsubishi Electric Corporation may consider the possibility of an application, provided that the customer notifies Mitsubishi Electric Corporation of the intention, the application is clearly defined and any special quality is not required.