Additional Explanation for A851GOT Graphic Operation Terminal

Specifications subject to change without notice.

When exported from Japan, this manual does not require application to the Ministry of Economy, Trade and Industry for service transaction permission.
**SAFETY PRECAUTIONS**

(Always read these instructions before using this equipment.)

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 instructions given in this manual are concerned with this product. For the safety instructions of the programmable controller system, please read the CPU module user’s manual.

In this manual, the safety instructions are ranked as “DANGER” and “CAUTION”.

<table>
<thead>
<tr>
<th>DANGER</th>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.</td>
<td>Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.</td>
</tr>
</tbody>
</table>

Note that the ▶ CAUTION level may lead to a serious consequence 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>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Some failures of the GOT or communication cable may keep the outputs on or off. 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.</td>
</tr>
<tr>
<td>• 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. For bus connection : The CPU becomes faulty and the GOT 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.</td>
</tr>
<tr>
<td>• 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. Failure to observe this instruction may result in an accident due to incorrect output or malfunction.</td>
</tr>
</tbody>
</table>
[Design Precautions]

DANGER

- Incorrect operation of the touch switch(s) may lead to a serious accident if the GOT backlight is gone out.

When the GOT backlight goes out, the display section turns black and causes the monitor screen to appear blank, while the input of the touch switch(s) still remains active.

This may confuse an operator in thinking that the GOT is in “screensaver” mode, who then tries to release the GOT from this mode by touching the display section, which may cause a touch switch to operate.

Note that the following occurs on the GOT when the backlight goes out.
  - The monitor screen disappears even when the screensaver is not set.
  - The monitor screen will not come back on by touching the display section, even if the screensaver is set.

<In case the GOT is installed with the system program (standard monitor OS) SW2NIW-A8SYSP version D or earlier>
- Regardless the touch-switch function is set or not, when multiple touch switches (two places or more) are pressed simultaneously as shown in the following diagram, the GOT is designed to execute a pre-defined operation of the touch switch if a touch switch function is defined at the fourth vertex of the rectangle.

<table>
<thead>
<tr>
<th>When two touch switches are pressed:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When three touch switches are pressed:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When four touch switches are pressed:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Diagram" /></td>
</tr>
</tbody>
</table>

When multiple touch switches are pressed simultaneously under the conditions described above, make sure that the system works safely by carefully considering the location of each touch switch function and adding an interlock circuit to the write device using sequence program, etc.

A malfunction might cause a breakdown, accident, or damage to the machine.
[Design Precautions]

⚠️ DANGER

<In case the GOT is installed with the system program (standard monitor OS) SW2NIW-A8SYSP version J or earlier>

- Please note that the touch-switch that is thirdly touched will not operate while three touch-switches are simultaneously touched.

![Switch Chart]

When setting the touch-switch that may cause serious accidents due to malfunction, be sure to create a switch outside the GOT. And then, make the settings so that the touch switch will operate by touching it together with the switch.

A malfunction might cause a breakdown, accident, or damage to the machine.

⚠️ CAUTION

- Do not bundle the communication cable 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.

[Mounting Precautions]

⚠️ CAUTION

- The GOT should be used in the environment given in the general specifications of the GOT user's manual.

Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.

- When mounting the GOT main unit to an enclosure, tighten the mounting screws in the specified torque range.

Undertightening can cause a drop, short circuit or malfunction.

Overtightening can cause a drop, short circuit or malfunction due to the damage of the screws or module.

- When using a bus connection, cables should be securely connected to the connectors of the base unit and GOT.

After connecting the connector, check to make sure they are securely tightened and not loose. Defective contact could cause a false input and output.

- The communication cable should be connected securely to the connector on the GOT main unit.

After connecting the connector, check to make sure they are securely tightened and not loose. Defective contact could cause a false input and output.
## [Wiring Precautions]

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
</table>
| • Before starting wiring, always switch off the GOT power externally in all phases. Not doing so may cause an electric shock, product damage or malfunction.  
• When turning on the power or operating the module after installation or wiring work, be sure the module’s terminal covers are correctly attached. Failure to attach the terminal covers may result in electric shock. |

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
</table>
| • Please make sure to ground FG terminal and LG terminal of the GOT power supply unit by applying Class D Grounding (Class 3 Grounding Method) or higher which is used exclusively for the GOT. Not doing so may cause an electric shock or malfunction.  
• When wiring the GOT, check the rated voltage and terminal layout of the wiring, and make sure the wiring is done correctly. Connecting a power supply that differs from the rated voltage or wiring it incorrectly may cause fire or failure.  
• Tighten the GOT’s terminal screws within the range of specified torque. If the terminal screws are loose, it may result in fallout, short circuits, or malfunction.  
• Be careful not to let foreign matter such as filings or wire chips get inside the GOT module. These can cause fire, breakdowns and malfunction. |

## [Test Operation Precautions]

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Before performing test operation (bit device on/off, word device's present value changing, timer/counter's set value and present value changing, buffer memory's present value changing) for a user-created monitor screen or system monitoring read the manual carefully to fully understand how to operate the equipment. 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.</td>
</tr>
</tbody>
</table>
### [Startup/Maintenance Precautions]

<table>
<thead>
<tr>
<th><strong>DANGER</strong></th>
</tr>
</thead>
</table>
| • 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 switching the power off in all phases can cause a module failure or malfunction.  
  Undertightening can cause a short circuit, fallout or malfunction.  
  Overtightening can cause a short circuit, fallout or malfunction due to the damage of the screws or module. |

<table>
<thead>
<tr>
<th><strong>CAUTION</strong></th>
</tr>
</thead>
</table>
| • Do not disassemble or modify the GOT, power supply module, communication module, option module, memory cassette or memory card.  
  Doing so can cause a failure, malfunction, injury or fire.  
• Do not touch the conductive and electronic parts of the GOT, power supply module, communication module, option module or memory cassette directly.  
  Doing so can cause a module malfunction or failure.  
• Because they are made of resin, don’t drop or given a strong shock to the GOT main module, power supply module, communication module, optional module, and memory cassette.  
  This may cause failure. |

### [Disposal Precautions]

<table>
<thead>
<tr>
<th><strong>CAUTION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• When disposing of the product, handle it as industrial waste.</td>
</tr>
</tbody>
</table>
### [Backlight Changing Precautions]

<table>
<thead>
<tr>
<th><strong>DANGER</strong></th>
</tr>
</thead>
</table>
| - Never disassemble or modify the GOT main module.  
  This may cause failure, malfunction, injury, and/or fire.  
- Do not remove the GOT printed wired board from the case.  
- Do not touch the conductive parts and electronic parts of the GOT main module and optional module.  
  This may cause the module to malfunction or failure. |

<table>
<thead>
<tr>
<th><strong>CAUTION</strong></th>
</tr>
</thead>
</table>
| - Perform replacement of the backlight at a place where no other machines exist in order to prevent troubles in case a fixed screw of the backlight or GOT drops.  
  If such screw is dropped, it may cause damage to the machine or an accident.  
- Do not touch the GOT’s circuit board or electronic parts when replacing the backlight.  
  Doing so could cause failure or malfunction.  
- Tighten the backlight fixed screws within the range of specified torque.  
  If the fixed screws are loose, it may result in fallout, short circuits, or malfunctions.  
  Tightening the fixed screws too far may result in damages, short circuits, or malfunctions of the screw and/or module.  
- Do not pull the cable connector of the backlight when replacing the backlight.  
  Doing so could cause damage or failure of the backlight. |

### [Disposal of The Backlight Precautions]

<table>
<thead>
<tr>
<th><strong>CAUTION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- When disposing of the backlight, handle it as industrial waste.</td>
</tr>
</tbody>
</table>
The manual number is given on the bottom left of the back cover...

<table>
<thead>
<tr>
<th>Print Date</th>
<th>*Manual Number</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 1997</td>
<td>IB(NA)-66825-A</td>
<td>First printing</td>
</tr>
<tr>
<td>Feb. 2002</td>
<td>IB(NA)-66825-B</td>
<td>Correction: SAFETY PRECAUTIONS</td>
</tr>
</tbody>
</table>

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Introduction

Thank you for purchasing the Mitsubishi Graphic Operation Terminal.

Before using the equipment, please read this manual carefully to develop full familiarity with the functions and performance of the graphic operation terminal you have purchased, so as to ensure correct use.

Please forward a copy of this manual to the end user.

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3.4.2 Installing the GOT beyond the Maximum Expandable Distance (more than 6 m (19.7 ft))

Precautions Concerning the System Configuration

Connect the CON1 connector on the long-distance bus connection cable to the main base unit, and the CON2 connector to the GOT.
1. OVERVIEW

This manual is a supplementary publication describing the system configuration and specifications of the A851GOT Graphic Operation Terminal (hereafter abbreviated as the GOT or A851GOT).

This manual covers only the areas that differ from the contents of the A850GOT Graphic Operation Terminal User's Manual supplied with the package. Refer to the supplied User's Manual for any descriptions that are not covered in this document.

There are following types of GOT:

<table>
<thead>
<tr>
<th>Item</th>
<th>A861GOT-LWD (Color of the front area ivory white)</th>
<th>A861GOT-LBD (Color of the front area dark grey)</th>
<th>A851GOT-SWD (Color of the front area ivory white)</th>
<th>A851GOT-SBD (Color of the front area dark grey)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display unit</td>
<td>Monochrome LCD (2 colors)</td>
<td>6TN color LCD (8 colors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>320 x 240 dots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display size</td>
<td>86 mm (3.4 in.) (vertical) x 115 mm (4.5 in.) (horizontal)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of touch switch</td>
<td>300 points (15 rows x 20 rows)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connection type</td>
<td>Dedicated to the bus connection</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Because the A851GOT has a built-in bus connection interface, there is no need to prepare a bus connection interface module.
- The displayable sprite functions are the same as those of the A850GOT.
1.1 The Precautions when Using the A851GOT

The A851GOT cannot be used in a system which connects several display units to one PC CPU. Use the module in systems in which only one display unit is connected to one PC CPU.

1.2 The Precautions when Installing the OS and Creating Display Data

- Install the basic OS for the A850GOT.
- Always install a bus connection communication driver as the communication driver.
- When creating display data, set A850GOT as the GOT type for the data.

3. SYSTEM CONFIGURATIONS WHEN MAKING BUS CONNECTIONS

3.3.2 Installing the GOT beyond the Maximum Expandable Distance (more than 6.6 m (21.7 ft.))

Precautions Concerning the System Configuration

(1) It is essential to use the A7GT-CNBF bus-connector conversion box when the connected PC CPU is large and the GOT is placed at a location that exceeds the maximum expandable distance.

(2) Connect the CON1 connector on the long-distance bus connection cable to the A7GT-CNBF, and the CON2 connector to the GOT.

(3) The total length of expansion cables from the main base unit to the A7GT-CNBF should not exceed 6.6 m (21.7 ft.).

(4) The total length of all of the expansion cables and long-distance bus connection cables should not exceed 36.6 m (120.1 ft.).
3. SYSTEM CONFIGURATIONS WHEN MAKING BUS CONNECTIONS

3.3 System Configuration for Large-Sized PC CPUs

3.3.1 Installing the GOT within the Maximum Expandable Distance (6.6 m (21.7 ft.) or less)

Precautions Concerning the System Configuration

The total length of all of the expansion cables should not exceed 6.6 m (21.7 ft.).

1. OVERVIEW

1.3 Features

(1) The A851GOT may be installed at a position 36.6 m (120.1 ft.) max. away from the basic base for large-sized PC CPUs, and 30 m (98.4 ft.) max. away for compact CPU.

For a large-sized PC CPU

For a compact PC CPU

The A8GT-CN6 is essential if the GOT is installed at a position 6.6 m (22 ft.) or more away from the basic base.

(2) Since it is not necessary to connect the bus-connection module (it is built-in to the main module) and it has a structure in which the bus connection cable leads from the bottom of the main module, it does not take the depth of the bus-connection module, bus connector or bending dimensions of the cable when installing it onto the control panel, etc.

The depth dimension varies depending on the cable used.

<table>
<thead>
<tr>
<th>Cable Model Name</th>
<th>d2</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC05/10/30/50B</td>
<td>230 (8.1 in.)</td>
</tr>
<tr>
<td>A1SC05/07/0950B</td>
<td>210 (8.3 in.)</td>
</tr>
<tr>
<td>A1SC07/07/0950B</td>
<td></td>
</tr>
<tr>
<td>AC12/20/30B-R</td>
<td>130 (5.1 in.)</td>
</tr>
</tbody>
</table>

(Unit: mm)
1.4 How to Read this Manual

As it is noted in the overview, this manual only describes the parts that are different from the contents of the user's manual supplied with the product. The contents that are different from those of the supplied user's manual are listed in the table below. Replace the sections in the user's manual with the corresponding sections described in this manual.

<table>
<thead>
<tr>
<th>The sections in the user's manual that needs replacement</th>
<th>The sections in this manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1.4: Included Parts</td>
<td>Section 1.5: Included Parts</td>
</tr>
<tr>
<td>Chapter 2: SYSTEM CONFIGURATIONS USED FOR</td>
<td>Chapter 3: SYSTEM CONFIGURATIONS USED FOR</td>
</tr>
<tr>
<td>MONITOR SCREEN CREATION AND DATA TRANSMISSION</td>
<td>MONITOR SCREEN CREATION AND DATA TRANSMISSION</td>
</tr>
<tr>
<td>Chapter 3: SYSTEM CONFIGURATIONS WHEN MAKING BUS</td>
<td>Chapter 3: SYSTEM CONFIGURATIONS WHEN MAKING BUS</td>
</tr>
<tr>
<td>CONNECTIONS</td>
<td>CONNECTIONS</td>
</tr>
<tr>
<td>Chapter 4: SYSTEM CONFIGURATIONS FOR NON-</td>
<td>Delete Chapter 4 in the user's manual since A851GOT</td>
</tr>
<tr>
<td>BUS CONNECTIONS</td>
<td>only supports the bus connection</td>
</tr>
<tr>
<td>Section 5.1: General Specifications</td>
<td>Section 4.1: General Specifications</td>
</tr>
<tr>
<td>Section 5.2: Performance Specifications</td>
<td>Section 4.2: Performance Specifications</td>
</tr>
<tr>
<td>Section 5.3: Applicable CPU</td>
<td>Section 3.5: Applicable CPU</td>
</tr>
<tr>
<td>Section 5.5: List of Configuration Equipment</td>
<td>Section 5.6: List of Configuration Equipment</td>
</tr>
<tr>
<td>Section 6.1: Part Identification and Settings</td>
<td>Section 5.1: Part Identification and Settings</td>
</tr>
<tr>
<td>Section 6.2: Installation Method</td>
<td>Section 5.2: Installation Method</td>
</tr>
<tr>
<td>Appendix 1: Diagram of External Dimensions</td>
<td>Section 5.3: Diagram of External Dimensions</td>
</tr>
</tbody>
</table>

1.5 Included Parts

After opening the box, verify that all of the following items are included.

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOT main module</td>
<td>1</td>
</tr>
<tr>
<td>Attachment hooks</td>
<td>4</td>
</tr>
</tbody>
</table>

(1) Attaching the attachment hooks

1. Fit the attachment hook onto the GOT main module.
2. Slide the attachment hook in the direction indicated by $\triangleright$.
3. Slide the attachment hook in the direction of the notch provided for the hook.

(2) The sheet affixed to the GOT display unit

When the GOT is shipped, a protective sheet is affixed over the display unit. This is a temporary sheet and is not the protective sheet which prevents the display unit from being scratched or damaged during actual use.

After the GOT has been attached to its base, peel off this temporary sheet and cover the display unit with the A8G7-50PS protective sheet (transparent protective sheet) or the A8G7-50PSN (anti-reflection protective sheet), both of which are sold separately.

3. SYSTEM CONFIGURATIONS WHEN MAKING BUS CONNECTIONS

(1) Settings when no expansion base unit is connected

Because the GOT cannot be assigned to a vacant I/O slot on the main base, if no expansion base is connected, it must still be assigned to a vacant slot in the first expansion stage number.

[Example of settings]

(2) Settings when the GOT is assigned to a vacant slot in the expansion base unit

Specify the expansion stage number in the vacant slot to which the GOT is to be assigned, and the I/O slot number.

[Example of settings]

(3) When there are no vacant I/O slots in the expansion base unit to which the GOT is connected

Get the vacant slot in the next expansion stage number of the expansion base unit currently connected to the GOT.

[Example of settings]

Point

If there are no vacant I/O slots in any of the expansion base units within the maximum range of expansion stage numbers, the expansion stage number switch and I/O slot switch should be set as shown above. If the CPU to which the GOT is connected is any of those listed below, however, the above settings cannot be used. There must always be a vacant I/O slot in the expansion base unit.

- A3DCPU
- A4UCPU
- Q3ACPU
- Q4ACPU
- A012HCPU
3. SYSTEM CONFIGURATIONS WHEN MAKING
BUS CONNECTIONS

3.2 Setting the Expansion Stage Number Switch and the I/O Slot Switch

It is necessary to assign the GOT to a vacant I/O slot of the expanded base unit to make a bus connection.
To assign, use the expansion stage number switch and the I/O slot switch.

![Diagram of I/O slot and Expansion stage number switch]

Expansion stage number switch
Set the number of expansion stages in the vacant I/O slots used for assigning the GOT.
1 to 7 : Set the expansion stage number
0, 8, 9 : Unusable

I/O slot switch
Set the vacant I/O slot number to which the GOT is assigned.
0 to 7 : Set the vacant I/O slot number
8, 9 : Unusable

**Point**
The GOT cannot be assigned to a vacant I/O slot on the basic base. Always assign it to the vacant slots on the expansion base.

1. OVERVIEW

1.6 Precautions when Installing the ROM_BIOS/OS

Notes about executing the ROM_BIOS/OS installation are described in the following.

1) Before installing the ROM_BIOS/OS, confirm that the connectors of the communication cable are securely connected to the G1 and the personal computer.
If the ROM_BIOS/OS installation is executed when the connectors are not connected securely, the GOT might stop operating after installation.

2) Note that the ROM_BIOS/OS installation cannot be interrupted once it is started. The GOT might stop running if the power of the GOT or personal computer is turned off, or the communication cable is disconnected in order to interrupt in the middle of the installation.

3) Do not turn off the power supply of the GOT or personal computer, and do not disconnect the communication cable during the ROM_BIOS/OS installation. The GOT might stop running if the power of the GOT or personal computer is turned off, or the communication cable is disconnected during the ROM_BIOS/OS installation.

4) If one of the operations described above was done by mistake, or if the GOT does not work after the ROM_BIOS/OS installation, follow the steps shown in the following to reinstall the ROM_BIOS/OS.

1) Turn off the power supply of the GOT.
2) If a communication module is installed, disconnect the communication module.
3) Turn on the power supply of the GOT while pressing the two locations on the G11 display simultaneously as shown in the following diagram:

![Diagram of pressing locations on the G11 display]

4) A message, "Reinstall ROM_BIOS/OS", will appear on the GOT display area.
5) Reinstall the ROM_BIOS/OS.
Refer to Section 3.1 of "SW2NIW-A8GOTP Graphic Settings Software Package Operating Manual" (Data Transmission/Debugging/Document Creation Manual) for the procedure of ROM_BIOS/OS installation.
3. SYSTEM CONFIGURATIONS WHEN MAKING BUS CONNECTIONS

3.1 Useful Information when Making Bus Connections

3.1.1 Handling of the GOT from the PC CPU in a Bus Connection

When using a bus connection, the PC CPU recognizes the GOT as a special function module with 32 I/O points.
For this reason, when one GOT is connected, there must always be one vacant I/O slot (32 vacant points) on the expansion base unit.

However, even if there are no vacant I/O slots, the GOT may be connected in a bus connection if the PC CPU has 32 vacant I/O points.

3.1.2 Restrictions when Using a Direct PC CPU Connection

Keep in mind that the input X is not allowed at vacant slots if the connected CPU-LU is a compact type with direct I/O control method and the GOT is connected with the 5 m (16.4 ft) extension cable (A1SC50B).

The above restrictions do not apply if the refresh method is being used for I/O control.
With a PC CPU in which the I/O control method can be changed using a switch, the method should be set to the refresh method.

When input X of the vacant slot is being used

1) When input X has been assigned with the MELSECNET (II, /B) data link or MELSECNET/10 network
2) When the data received from the MELSECNET/Mini-S3 data link is read to the Input X by FROM command
3) When input X of the vacant slot is turned on and off from the calculator link module
4) When input X of the vacant slot is turned on and off using a touch switch function (bit SET/RST, alternate, momentary) of the GOT

2. SYSTEM CONFIGURATIONS USED FOR MONITOR SCREEN CREATION AND DATA TRANSMISSION

2.1 System Configuration when Creating Monitor Screens

This shows the system configuration when using the graphics software to create monitor screens.

- Main module: Personal computer which runs Microsoft Windows Ver. 3.1
- Personal computer which runs Microsoft Windows 95
- Main memory: At least 4 MB is required (8 MB or more is strongly recommended)
- Hard disk: At least 10 MB of space must be available when the program is installed
- CRT: Must be able to connect to main module and be used with Microsoft Windows
- Mouse: Any mouse which can be used with a Windows computer

* Windows 3.1, Windows 95 is a trademark of Microsoft Corporation.
2.2 System Configuration Used for Data Transmission, Debugging, and Document Creation

2.2.1 System Configuration

This shows the system configuration used for transmission data, debugging, and creating documents.

Windows personal computer

RS-232C cable

A851GOT

Graphics software
System program

Printer cable

Printer which operates under windows

2.2.2 RS-232C Cables Used for Data Transmission

The cable shown in the internal connections drawing below, a connector or a cable with the model name noted below, is required.

* The connector on the A851GOT side should be a screw-on connector (with inch screws).

<table>
<thead>
<tr>
<th>Manufacture</th>
<th>Model Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitsubishi Electric</td>
<td>AC96R3-9P, F2-232CAB-1</td>
</tr>
</tbody>
</table>
2.2 System Configuration Used for Data Transmission, Debugging, and Document Creation

2.2.1 System Configuration
This shows the system configuration used for transmission data, debugging, and creating documents.

Windows personal computer → RS-232C cable → A851GOT → Printer or system program

Graphics software
System program

Printer cable → Printer which operates under windows

2.2.2 RS-232C Cables Used for Data Transmission
The cable shown in the internal connections drawing below, a connector or a cable with the model name noted below, is required.

- The connector on the A851GOT side should be a screw-on connector (with inch screws).

<table>
<thead>
<tr>
<th>Manufacture</th>
<th>Model Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitsubishi Electric</td>
<td>AC236R3-9P</td>
</tr>
<tr>
<td></td>
<td>F2-232CAB-1 (introductory product)</td>
</tr>
</tbody>
</table>
3. SYSTEM CONFIGURATIONS WHEN MAKING BUS CONNECTIONS

3.1 Useful Information when Making Bus Connections

3.1.1 Handling of the GOT from the PC CPU in a Bus Connection

When using a bus connection, the PC CPU recognizes the GOT as a special function module with 32 I/O points.

For this reason, when one GOT is connected, there must always be one vacant I/O slot (32 vacant points) on the expansion base unit.

However, even if there are no vacant I/O slots, the GOT may be connected in a bus connection if the PC CPU has 32 vacant I/O points.

3.1.2 Restrictions when Using a Direct PC CPU Connection

Keep in mind that the input X is not allowed at vacant slots if the connected PC CPU is a compact type with direct I/O control method and the GOT is connected with the 5 m (16.4 ft) extension cable (A1S6S60).

The above restrictions do not apply if the refresh method is being used for I/O control.

With a PC CPU in which the I/O control method can be changed using a switch, the method should be set to the refresh method.

When input X of the vacant slot is being used

1) When input X has been assigned with the MELSECNET (II, /B) data link or MELSECNET/10 network
2) When the data received from the MELSECNET/mini-S3 data link is read to the input X by FROM command
3) When input X of the vacant slot is turned on and off from the calculator link module
4) When input X of the vacant slot is turned on and off using a touch switch function (bit SET/RST, alternate, momentary) of the GOT

2. SYSTEM CONFIGURATIONS USED FOR MONITOR SCREEN CREATION AND DATA TRANSMISSION

2.1 System Configuration when Creating Monitor Screens

This shows the system configuration when using the graphics software to create monitor screens.

Computer which runs Windows

Graphics software

System program

Main module: Personal computer which runs Microsoft Windows Ver. 3.1
Personal computer which runs Microsoft Windows 95

Main memory: At least 4 MB is required (8 MB or more is strongly recommended)

Hard disk: At least 10 MB of space must be available when the program is installed

CRT: Must be able to connect to main module and be used with Microsoft Windows

Mouse: Any mouse which can be used with a Windows computer

* Windows 3.1, Windows 95 is a trademark of Microsoft Corporation.
### 3. SYSTEM CONFIGURATIONS WHEN MAKING BUS CONNECTIONS

#### MELSEC GOT

#### 3.1.3 Restrictions on the Number of GOTs Loaded to a Special Function Module

When using a bus connection, there are some restrictions on the number of special function modules that can be loaded, depending on the PC CPU.

<table>
<thead>
<tr>
<th>No. of GOTs + special function modules which can be loaded</th>
<th>GDIACP</th>
<th>ADIACP, ADUCP, ADUSCP</th>
<th>Other CPU</th>
</tr>
</thead>
<tbody>
<tr>
<td>No restriction</td>
<td>No restriction</td>
<td>A total of six modules can be connected, including the GOT and special function modules.</td>
<td>A total of two modules can be connected, including the GOT and special function modules.</td>
</tr>
</tbody>
</table>

* Special function modules include the following models:
  - AD51(S3), AD51H(S3), AD51FD(S3), AD57G(S3), AJ71C21(S1), AJ71C23, AJ71C24(S9/S6/S8), AJ71E71, AJ71UC24, A1S71UC24(R2/PRF/R4), A1S71E71

#### 3.1.4 Supplying Power to the PC CPU and the GOT

When supplying power to the PC CPU and the GOT, please observe the precautions noted below.

1. Always use one of the procedures below to turn on the power supply to the PC CPU and GOT.
   1. Turn on the power supply to the PC CPU and the GOT at the same time.
   2. Turn on the power supply to the PC CPU first, and then to the GOT.

2. If the power supply is turned on using method 2) above, the CPU begins to run when the power supply to the GOT is turned on.

3. When power is being supplied to the PC CPU and the GOT, turning off the power supply to the PC CPU causes a communications error. If this happens, turn off the power supply to the GOT and follow procedure (1) above to turn on the power supplies to the PC CPU and the GOT.

4. The PC CPU continues to run even if the power supply to the GOT is turned off during monitoring.

> **CAUTION**  
> • When disconnecting the expansion cable that connects the PC CPU and the GOT, to prevent errors from occurring, make sure the power supplies to the PC CPU and the GOT are turned off first.

#### 3.1.5 Hardware Reset of the A851GOT

To reset the hardware, restart the GOT (power OFF → ON).

The reset switch at the rear of the A851GOT is a hardware reset switch that is enabled only in the event of a hardware error.

When the A851GOT is operating normally, a hardware reset will not occur even if the reset switch is pressed.
1. OVERVIEW

1.6 Precautions when Installing the ROM_BIOS/OS

Notes about executing the ROM_BIOS/OS installation are described in the following.

1) Before installing the ROM_BIOS/OS, confirm that the connectors of the communication cable are securely connected to the GU1 and the personal computer.
   If the ROM_BIOS/OS installation is executed when the connectors are not connected securely, the GOT might stop operating after installation.

2) Note that the ROM_BIOS/OS installation cannot be interrupted once it is started.
   The GOT might stop running if the power of the GOT or personal computer is turned off, or the communication cable is disconnected in order to interrupt in the middle of the installation.

3) Do not turn off the power supply of the GOT or personal computer, and do not disconnect the communication cable during the ROM_BIOS/OS installation.
   The GOT might stop running if the power of the GOT or personal computer is turned off, or the communication cable is disconnected during the ROM_BIOS/OS installation.

4) If one of the operations described above was done by mistake, or if the GOT does not work after the ROM_BIOS/OS installation, follow the steps shown in the following to reinstall the ROM_BIOS/OS.

1) Turn off the power supply of the GOT.
2) If a communication module is installed, disconnect the communication module.
3) Turn on the power supply of the GOT while pressing the two locations on the GU1 display simultaneously as shown in the following diagram:

   ![Diagram of GOT with two locations being pressed]

4) A message, "Reinstall ROM_BIOS/OS", will appear on the GOT display area.
5) Reinstall the ROM_BIOS/OS.
   Refer to Section 3.1 of "SW2NIW-A8GOTP Graphic Settings Software Package Operating Manual" (Data Transmission/Debugging/Document Creation Manual) for the procedure of ROM_BIOS/OS installation.

Point

- The GOT cannot be assigned to a vacant I/O slot on the basic base.
- Always assign it to the vacant slots on the expansion base.
1. OVERVIEW

1.4 How to Read this Manual

As it is noted in the overview, this manual only describes the parts that are different from the contents of the user’s manual supplied with the product. The contents that are different from those of supplied user’s manual are listed in the table below. Replace the sections in the user’s manual with the corresponding sections in this manual.

<table>
<thead>
<tr>
<th>The sections in the user’s manual that needs replacement</th>
<th>The sections in this manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1.4 Included Parts</td>
<td>Section 1.5 Included Parts</td>
</tr>
<tr>
<td>Chapter 2. SYSTEM CONFIGURATIONS USED FOR</td>
<td>Chapter 2. SYSTEM CONFIGURATIONS USED FOR</td>
</tr>
<tr>
<td>MONITOR SCREEN CREATION AND DATA TRANSMISSION</td>
<td>MONITOR SCREEN CREATION AND DATA TRANSMISSION</td>
</tr>
<tr>
<td>Chapter 3. SYSTEM CONFIGURATIONS WHEN</td>
<td>Chapter 3. SYSTEM CONFIGURATIONS WHEN</td>
</tr>
<tr>
<td>MAKING BUS CONNECTIONS</td>
<td>MAKING BUS CONNECTIONS</td>
</tr>
<tr>
<td>Chapter 4. SYSTEM CONFIGURATIONS FOR NON-BUS CONNECTIONS</td>
<td>Delete Chapter 4 in the user’s manual since A851GOT only supports the bus connection</td>
</tr>
<tr>
<td>Section 4.1 General Specifications</td>
<td>Section 4.2 General Specifications</td>
</tr>
<tr>
<td>Section 4.3 Performance Specifications</td>
<td>Section 4.4 Performance Specifications</td>
</tr>
<tr>
<td>Section 4.5 Applicable CPU</td>
<td>Section 4.5 Applicable CPU</td>
</tr>
<tr>
<td>Section 5.1 List of Configuration Equipment</td>
<td>Section 5.2 List of Configuration Equipment</td>
</tr>
<tr>
<td>Section 6.1 Part Identification and Settings</td>
<td>Section 5.3 Part Identification and Settings</td>
</tr>
<tr>
<td>Appendix 1 Diagram of External Dimensions</td>
<td>Section 5.5 Diagram of External Dimensions</td>
</tr>
</tbody>
</table>

1.5 Included Parts

After opening the box, verify that all of the following items are included.

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOT main module</td>
<td>1</td>
</tr>
<tr>
<td>Attachment hooks</td>
<td>4</td>
</tr>
</tbody>
</table>

(1) Attaching the attachment hooks

1. Fit the attachment hook onto the GOT main module.
2. Slide the attachment hook in the direction indicated by x.
3. Slide the attachment hook in the direction of the notch provided for the hook.

(2) The sheet affixed to the GOT display unit

When the GOT is shipped, a protective sheet is affixed over the display unit. This is a temporary sheet and is not the protective sheet which prevents the display unit from being scratched or damaged during actual use. After the GOT has been attached to its base, peel off this temporary sheet and cover the display unit with the A8GT-50PS protective sheet (transparent protective sheet) or the A8GT-50PSN (anti-reflection protective sheet), both of which are sold separately.

3. SYSTEM CONFIGURATIONS WHEN MAKING BUS CONNECTIONS

(1) Settings when no expansion base unit is connected

Because the GOT cannot be assigned to a vacant I/O slot on the main base, if no expansion base is connected, it must still be assigned to a vacant slot in the first expansion stage number.

[Example of settings]

![Diagram of GOT with expansion stage number switch set to 1 and I/O slot switch set to 0]

(2) Settings when the GOT is assigned to a vacant slot in the expansion base unit

Specify the expansion stage number in the vacant slot to which the GOT is to be assigned, and the slot number.

[Example of settings]

![Diagram of GOT with expansion stage number switch set to 1 and I/O slot switch set to 2 to 7]

(3) When there are no vacant I/O slots in the expansion base unit to which the GOT is connected

Set the vacant slot in the next expansion stage number of the expansion base unit currently connected to the GOT.

[Example of settings]

![Diagram of GOT with expansion stage number switch set to 2 and I/O slot switch set to 0]

**Point**

If there are no vacant I/O slots in any of the expansion base units within the maximum range of expansion stage numbers, the expansion stage number switch and I/O slot switch should be set as shown above. If the CPU to which the GOT is connected is any of those listed below, however, the above settings cannot be used. There must always be a vacant I/O slot in the expansion base unit.

- A3DCPU
- A4UCPU
- A3ACPU
- A4ACPU
- A012HCPU
3. SYSTEM CONFIGURATIONS WHEN MAKING
BUS CONNECTIONS

MELSEC GOT

3.3 System Configuration for Large-Sized PC CPUs

3.3.1 Installing the GOT within the Maximum Expandable Distance (6.6 m (21.7 ft.) or less)

Precautions Concerning the System Configuration

The total length of all of the expansion cables should not exceed 6.6 m (21.7 ft.).

1. OVERVIEW

1.3 Features

(1) The A851GOT may be installed at a position 36.6 m (120.1 ft.) max. away from the basic base for
large-sized PC CPUs, and 30 m (98.4 ft.) max. away for compact systems.

For a large sized PC CPU

For a compact PC CPU

MAX 6.6 m
(22 feet)

MAX 30 m
(98 feet)

(2) Since it is not necessary to connect the bus-connection module (it is built-in to the main module)
and it has a structure in which the bus connection cable leads from the bottom of the main
module, it does not take the depth of the bus-connection module, bus connector or bending
dimensions of the cable when installing it onto the control panel, etc.

A851GOT side face

A850GOT side face

The depth dimension varies depending on the cable used.

<table>
<thead>
<tr>
<th>Cable Model Name</th>
<th>d</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC06/12/20/30CB</td>
<td>230 (8.1 in.)</td>
<td></td>
</tr>
<tr>
<td>A1SC05/07/09/50B</td>
<td>210 (8.3 in.)</td>
<td></td>
</tr>
<tr>
<td>AC12/20/30/50B-R</td>
<td>190 (7.5 in.)</td>
<td></td>
</tr>
</tbody>
</table>

(Unit: mm)
1.1 The Precautions when Using the A851GOT

The A851GOT cannot be used in a system which connects several display units to one PC CPU. Use the module in systems in which only one display unit is connected to one PC CPU.

3. SYSTEM CONFIGURATIONS WHEN MAKING BUS CONNECTIONS

3.3.2 Installing the GOT beyond the Maximum Expandable Distance (more than 6.6 m (21.7 ft.))

- A851GOT
- Long-distance bus connection cable
  - A6GT-G1000CKDG
  - A6GT-G700EXSS
  - A6GT-G300EXSS

- A7GT-CNB
- Expansion cable
  - A9081B-AH160C(-F)
  - AC8081R-F/AC800R-F

- Large-sized PC CPU
- Main base/ expansion base unit

Precautions Concerning the System Configuration

1. It is essential to use the A7GT-CNB bus-connector conversion box when the connected PC CPU is large and the GOT is placed at a location that exceeds the maximum expandable distance.

2. Connect the CON1 connector on the long-distance bus connection cable to the A7GT-CNB, and the CON2 connector to the GOT.

3. The total length of expansion cables from the main base unit to the A7GT-CNB should not exceed 6.6 m (21.7 ft.).

4. The total length of all of the expansion cables and long-distance bus connection cables should not exceed 36.6 m (120.1 ft.).

1.2 The Precautions when Installing the OS and Creating Display Data

- Install the basic OS for the A850GOT.
- Always install a bus connection communication driver as the communication driver.
- When creating display data, set A850GOT as the GOT type for the data.
3. SYSTEM CONFIGURATIONS WHEN MAKING
BUS CONNECTIONS

3.4 System Configuration for Compact PC CPUs

3.4.1 Installing the GOT within the Maximum Expandable Distance (6 m (19.7 ft.) or less)

Precautions Concerning the System Configuration
(1) The GOT cannot be connected to a compact expansion base unit. It should be connected to the main base unit.
(2) The total length of all of the expansion cables should not exceed 6 m (19.7 ft.).

1. OVERVIEW

This manual is a supplementary publication describing the system configuration and specifications of the A851GOT Graphic Operation Terminal (hereafter abbreviated as the GOT or A851GOT).

This manual covers only the areas that differ from the contents of the A850GOT Graphic Operation Terminal User's Manual supplied with the package. Refer to the supplied User's Manual for any descriptions that are not covered in this document.

There are following types of GOT:

<table>
<thead>
<tr>
<th>Item</th>
<th>A861GOT-LWD (Color of the front area ivory white)</th>
<th>A861GOT-LBD (Color of the front area dark grey)</th>
<th>A851GOT-SWD (Color of the front area ivory white)</th>
<th>A851GOT-SBD (Color of the front area dark grey)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display unit</td>
<td>Monochrome LCD (2 colors)</td>
<td>6TN color LCD (8 colors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>320 x 240 dots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display size</td>
<td>86 mm (3.4 in.) (vertical) x 115 mm (4.5 in.) (horizontal)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of touch switch</td>
<td>300 points (15 rows x 20 rows)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connection type</td>
<td>Dedicated to the bus connection</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Because the A851GOT has a built-in bus connection interface, there is no need to prepare a bus connection interface module.
- The displayable sprite functions are the same as those of the A850GOT.
Introduction
Thank you for purchasing the Mitsubishi Graphic Operation Terminal.
Before using the equipment, please read this manual carefully to develop full familiarity with the functions and performance of the graphic operation terminal you have purchased, so as to ensure correct use.
Please forward a copy of this manual to the end user.

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3.4.2 Installing the GOT beyond the Maximum Expandable Distance (more than 6 m (19.7 ft.))

Precautions Concerning the System Configuration
Connect the CON1 connector on the long-distance bus connection cable to the main base unit, and the CON2 connector to the GOT.
3. SYSTEM CONFIGURATIONS WHEN MAKING
BUS CONNECTIONS

MELSEC GOT

3.5 Applicable CPU

The GOT can be used in the following systems.

(1) CPU module which can be connected

CPU models which can be connected are listed below. Items in parentheses indicate the software version of each CPU. To confirm the version, please refer to the user’s manual for each CPU.

<table>
<thead>
<tr>
<th>CPU Type</th>
<th>CPU Module Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building-block CPU</td>
<td>A15CPU, A15CPU, A25CPU (C and subsequent), A25CPU, A25CPU-S1</td>
</tr>
<tr>
<td></td>
<td>A15CPU (H and subsequent), A15CPU P21/R21 (L and subsequent)</td>
</tr>
<tr>
<td></td>
<td>A25CPU (H and subsequent), A25CPU P21/R21 (L and subsequent)</td>
</tr>
<tr>
<td></td>
<td>A25CPU-S1 (H and subsequent), A25CPU P21/R21-S1 (L and subsequent)</td>
</tr>
<tr>
<td></td>
<td>A3NCPU (H and subsequent), A3NCPU P21/R21 (L and subsequent)</td>
</tr>
<tr>
<td></td>
<td>A3ACPU, A3ACPU P21, R21</td>
</tr>
<tr>
<td></td>
<td>A2ACPU-S1, A3ACPU P21/R21-S1</td>
</tr>
<tr>
<td></td>
<td>A4CPU, A4CPU-S1</td>
</tr>
<tr>
<td></td>
<td>A3ACPU, A4ACPU-S1</td>
</tr>
<tr>
<td></td>
<td>Q3ACPU, Q3ACPU-S1</td>
</tr>
<tr>
<td></td>
<td>Q3ACPU, Q3ACPU-P1/R21</td>
</tr>
<tr>
<td></td>
<td>A3UCPU, A4CPU</td>
</tr>
<tr>
<td></td>
<td>Q4ACPU, Q4ACPU</td>
</tr>
<tr>
<td>Motion controller</td>
<td>A171SCPU</td>
</tr>
<tr>
<td></td>
<td>A171SCPU (SW15RX-SV12H (J, K) only)</td>
</tr>
<tr>
<td></td>
<td>A21/22CPU, A23/24CPU, A272/32CPU</td>
</tr>
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</table>

(2) CPU module which cannot be connected.

<table>
<thead>
<tr>
<th>CPU Type</th>
<th>CPU Module Name</th>
</tr>
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<tbody>
<tr>
<td>Building-block CPU</td>
<td>A1CPF, A1CPF P21/R21</td>
</tr>
<tr>
<td></td>
<td>A2CPF, A2CPF P21/R21</td>
</tr>
<tr>
<td></td>
<td>A3CPF, A3CPF P21/R21</td>
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<tr>
<td></td>
<td>A3HCPF, A3HCPF P21/R21</td>
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<tr>
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<td>A3MCPU, A3MCPU P21/R21</td>
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<tr>
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<td>A3MCPU, A3MCPU P21/R21</td>
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<tr>
<td></td>
<td>A4CPF, A4CPF P21/R21</td>
</tr>
<tr>
<td></td>
<td>A5CPF, A5CPF P21/R21</td>
</tr>
<tr>
<td></td>
<td>A5CPF, A5CPF P21/R21</td>
</tr>
<tr>
<td>Compact CPU</td>
<td>A52CPF</td>
</tr>
<tr>
<td></td>
<td>A52HCPF, A52HCPF P21/R21</td>
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<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>A52CPU</td>
</tr>
<tr>
<td></td>
<td>A52GCPU</td>
</tr>
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</table>

*1 It can be used by A550GOT

---

Revisions

<table>
<thead>
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<th>Print Date</th>
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<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 1007</td>
<td>IBN (NA) 6626-A</td>
<td>First printing</td>
</tr>
</tbody>
</table>

* The manual number is noted at the lower left of the back cover.

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### 3.6 List of Configuration Equipment

<table>
<thead>
<tr>
<th>Component</th>
<th>Model</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOT main module</td>
<td>A851GOT-UXD</td>
<td>Monochrome LCD, color of front area ivory white (with 24VDC power supply)</td>
</tr>
<tr>
<td></td>
<td>A851GOT-LBD</td>
<td>Monochrome LCD, color of front area dark gray (with 24VDC power supply)</td>
</tr>
<tr>
<td></td>
<td>A851GOT-6WD</td>
<td>STN color LCD, color of front area ivory white (with 24VDC power supply)</td>
</tr>
<tr>
<td></td>
<td>A851GOT-SBD</td>
<td>STN color LCD, color of front area dark gray (with 24VDC power supply)</td>
</tr>
<tr>
<td>Backlight</td>
<td>A85T-50LT</td>
<td>For replacing the backlight for A851GOT/A850GOT</td>
</tr>
<tr>
<td>Protective sheet</td>
<td>A85T-50PSC</td>
<td>Transparent protective sheet (for A851GOT/A850GOT)</td>
</tr>
<tr>
<td></td>
<td>A85T-90PSN</td>
<td>Anti-reflection protective sheet (for A851GOT/A850GOT)</td>
</tr>
<tr>
<td>Long-distance bus connection cable</td>
<td>A8GT-C106ESSS *1</td>
<td>For connecting A851GOT and base unit. Cable length 10 m (32.8 ft.)</td>
</tr>
<tr>
<td></td>
<td>A8GT-C206ESSS *1</td>
<td>For connecting A851GOT and base unit. Cable length 20 m (65.6 ft.)</td>
</tr>
<tr>
<td></td>
<td>A8GT-C206ESSS *1</td>
<td>For connecting A851GOT and base unit. Cable length 30 m (98.4 ft.)</td>
</tr>
<tr>
<td>Bus connector conversion box</td>
<td>A8GT-CN</td>
<td>For conversion from the large-sized connector to the compact connector</td>
</tr>
<tr>
<td>A8GT-C12NB *1</td>
<td>1.2 m (3.9 ft.)</td>
<td></td>
</tr>
<tr>
<td>A8GT-C20NB *1</td>
<td>3 m (9.8 ft.)</td>
<td></td>
</tr>
<tr>
<td>A8GT-C30NB *1</td>
<td>5 m (16.4 ft.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A1S5C01B</td>
<td>0.7 m (2.3 ft.)</td>
</tr>
<tr>
<td></td>
<td>A1S5C02B</td>
<td>1.2 m (3.9 ft.)</td>
</tr>
<tr>
<td></td>
<td>A1S5C03B</td>
<td>3 m (9.8 ft.)</td>
</tr>
<tr>
<td></td>
<td>A1S5C04B</td>
<td>5 m (16.4 ft.)</td>
</tr>
<tr>
<td></td>
<td>Compatible software package</td>
<td>SW1MW-GOT800PSET</td>
</tr>
<tr>
<td>GOT ** personal computer connection cable</td>
<td></td>
<td>Refer to Section 2.2.2.</td>
</tr>
</tbody>
</table>

*1 It may not be used for the connections between the basic base and expansion base unit, or the expansion base and expansion base unit.
4. SPECIFICATIONS

4.1 General Specifications

The following indicates the common specifications for various modules to be used.

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Display area: 0 to 40°C, Other than display area: 0 to 55°C</td>
</tr>
<tr>
<td></td>
<td>Ambient storage temperature: -20 to 60°C</td>
</tr>
<tr>
<td></td>
<td>Ambient operating humidity: 10 to 90% RH, Non-condensing</td>
</tr>
<tr>
<td></td>
<td>Ambient storage humidity: 10 to 90% RH, Non-condensing</td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>Conforming to JIS B3101, IEC 1131-2</td>
</tr>
<tr>
<td></td>
<td>Under intermittent vibration: 10 to 57 Hz, 57 to 150 Hz, 9.8 m/s² (1G)</td>
</tr>
<tr>
<td></td>
<td>Frequency: 10 Hz to 57 Hz, Amplitude: 0.075 mm (0.003 in.)</td>
</tr>
<tr>
<td></td>
<td>Number of sweeps: 10 times each in X, Y, Z directions (for 80 min.)</td>
</tr>
<tr>
<td></td>
<td>Under continuous vibration: 10 to 57 Hz, 57 to 150 Hz, 4.9 m/s² (0.5G)</td>
</tr>
<tr>
<td></td>
<td>Frequency: 10 Hz to 57 Hz, Amplitude: 0.025 mm (0.001 in.)</td>
</tr>
<tr>
<td>Shock resistance</td>
<td>Conforming to JIS B3101, IEC 1131-2</td>
</tr>
<tr>
<td></td>
<td>Noise durability: 1000 Vp-p, 1 m.</td>
</tr>
<tr>
<td></td>
<td>Dielectric withstand voltage: AC between DC external terminal batch and ground: 500V, 1 min.</td>
</tr>
<tr>
<td></td>
<td>Insulation resistance: DC between DC terminal batch and ground: 600V, 10MΩ or greater measurement on the insulation resistance tester</td>
</tr>
<tr>
<td>Operating ambience</td>
<td>No corrosive gases</td>
</tr>
<tr>
<td>Operating elevation</td>
<td>2900 m (9552 ft.) max.</td>
</tr>
<tr>
<td>Installation location</td>
<td>Control panel</td>
</tr>
<tr>
<td>Over voltage category</td>
<td>1 max.</td>
</tr>
<tr>
<td>Pollution level</td>
<td>2 max.</td>
</tr>
</tbody>
</table>

*1 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 rated voltage of 300V is 2500V.

*2 This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used. Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensation must be expected occasionally.

[PRECAUTIONS WHEN REPLACING THE BACKLIGHT]

⚠️ DANGER
- When replacing the backlight, turn off the GOT power (When the GOT is connected to a bus, turn off the PC's CPU power), and first remove the GOT main module from the panel. If left in the panel, the GOT could fall and cause an injury. If this is done while the power is on, it could cause electric shock.

⚠️ CAUTION
- Perform replacement of the backlight at a place where no other machines exist in order to prevent troubles in case a fixed screw of the backlight or GOT drope.
- If such screw is dropped, it may cause damage to the machine or an accident.
- Do not touch the GOT's circuit board or electronic parts when replacing the backlight.
- Doing so could cause failure or malfunction.
- Tighten the backlight fixed screws within the range of specified torque (14.7 to 24.5 N·cm). Doing so could cause damage or failure of the backlight.
- Do not pull the cable connector of the backlight when replacing the backlight. Doing so could cause damage or failure of the backlight.

[PRECAUTIONS WHEN DISPOSING THE BACKLIGHT]

⚠️ CAUTION
- When disposing the backlight, treat it as industrial waste.
4. SPECIFICATIONS

4.2 Performance Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display unit</td>
<td>A851GOT-LWD, A859GOT-LBD</td>
</tr>
<tr>
<td>Type</td>
<td>Monochrome LCD</td>
</tr>
<tr>
<td>Resolution</td>
<td>Horizontal: 320 dots, vertical: 240 dots</td>
</tr>
<tr>
<td>Display size</td>
<td>86 mm (3.4 in.) (vertical) x 115 mm (4.5 in.) (horizontal)</td>
</tr>
<tr>
<td>Display color</td>
<td>Single color (white, black)</td>
</tr>
<tr>
<td>Backlights</td>
<td>Chilled cathode tube backlight, Backlights can be replaced</td>
</tr>
<tr>
<td>Touch panel</td>
<td>300 (15 mes x 20 columns)</td>
</tr>
<tr>
<td>Key size</td>
<td>16 dots x 16 dots min. (per key)</td>
</tr>
<tr>
<td>Repeat function</td>
<td>None</td>
</tr>
<tr>
<td>Memory 1</td>
<td>Internal memory (Flash ROM)</td>
</tr>
<tr>
<td>Approx.</td>
<td>For storing project data/for storing system monitor OS</td>
</tr>
<tr>
<td>Capacity</td>
<td>768 KB (user area)</td>
</tr>
<tr>
<td>RS232C interface</td>
<td>For connecting personal computer; 1 channel</td>
</tr>
<tr>
<td>Bus connection interface</td>
<td>For connecting bus connection cable; 1 channel</td>
</tr>
<tr>
<td>Interface for connecting optional module</td>
<td>For connecting optional module (for future expansion); 1 channel</td>
</tr>
<tr>
<td>Buzzer</td>
<td>Single sound (length of sound can be adjusted)</td>
</tr>
<tr>
<td>Lifetime 2</td>
<td>Display unit 50,000 hours (when ambient temperature during use is 25°C)</td>
</tr>
<tr>
<td></td>
<td>Backlights 10,000 hours (50% of display brightness)</td>
</tr>
<tr>
<td></td>
<td>Touch keys 1 million times min. (at operational force of 100 g (0.2 lb) or less)</td>
</tr>
<tr>
<td>Internal memory</td>
<td>No. of settings: 100,000</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>24VDC (+30%, -35%)</td>
</tr>
<tr>
<td>Allowable failure time</td>
<td>10 ms</td>
</tr>
<tr>
<td>Power consumption</td>
<td>0.54</td>
</tr>
<tr>
<td>I/O allocation</td>
<td>10 special points</td>
</tr>
<tr>
<td>Environmental protection construction</td>
<td>IP65 or equivalent (front panel section)</td>
</tr>
<tr>
<td>External dimensions</td>
<td>182 mm (7.6 in.) (W) x 135 mm (5.3 in.) (H) x 62 mm (2.4 in.) (D)</td>
</tr>
<tr>
<td>Overall external dimensions</td>
<td>184 mm (7.2 in.) (W) x 134 mm (5.3 in.) (H) x 68.9 mm (2.7 in.) (D)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.802 kg (1.8 lb)</td>
</tr>
<tr>
<td></td>
<td>0.805 kg (1.8 lb)</td>
</tr>
</tbody>
</table>

*1: The internal memory is a ROM which enables overwriting of new data without deleting previously written data. (No data backup power supply is required.)

*2: When parts need to be replaced, please consult your nearest distributor or branch office.

Remark

With the GOT, if a momentary power failure occurs, the screen display disappears. If the power is restored within 20 ms, however, monitor functions and other functions resume normal operation.
### 5. PART IDENTIFICATION AND INSTALLATION METHOD

#### 5.1 Part Identification and Settings

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Display unit</td>
<td>Displays monitor screens</td>
</tr>
<tr>
<td>2</td>
<td>Power supply LED</td>
<td>Lights when power supply is on</td>
</tr>
<tr>
<td>3</td>
<td>Reset switch</td>
<td>A hardware reset switch enabled only in the event of a GOT hardware error. When the GOT is operating normally, the hardware reset will not occur even if the reset switch is pressed.</td>
</tr>
<tr>
<td>4</td>
<td>IF slot switch</td>
<td>Set the IF slot number to which the GOT is to be assigned.</td>
</tr>
<tr>
<td>5</td>
<td>Expansion stage number switch</td>
<td>Set the number of expansion stages used for assigning the GOT.</td>
</tr>
<tr>
<td>6</td>
<td>RS-232C interface</td>
<td>RS-232C Interface for connecting a PC</td>
</tr>
<tr>
<td>7</td>
<td>Terminal base</td>
<td>For input of 24 VDC power supply</td>
</tr>
<tr>
<td>8</td>
<td>Attachment hook installation</td>
<td>Attachment hook is installed here</td>
</tr>
<tr>
<td>9</td>
<td>Rating plate</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Optional module interface</td>
<td>For future expansion</td>
</tr>
<tr>
<td>11</td>
<td>Bus connection interface</td>
<td>Interface for connecting bus connection cable</td>
</tr>
</tbody>
</table>

#### [INSTALLATION PRECAUTIONS]

⚠️ **CAUTION**
- When using a bus connection, extension cables should be securely connected to the connectors of the base unit and the graphic operation terminal. After connecting the connectors, check to make sure they are securely tightened and not loose. Defective contact could cause input and output errors.
- The communication cable should be connected securely to the connector on the GOT main module. Defective contact could cause input and output errors.

#### [WIRING PRECAUTIONS]

⚠️ **DANGER**
- Before beginning any installation or wiring work, make sure all phases of the power supply have been obstructed from the outside. Failure to completely shut off the power-supply phases may cause electric shock and/or damage to the module.
- When turning on the power or operating the module after installation or wiring work, be sure the module's terminal covers are correctly attached. Failure to attach the terminal covers may result in electric shock.

⚠️ **CAUTION**
- The FG and LG terminals should always be grounded using the class-3 or higher grounding designed specially for the GOT. Failure to ground these terminals may cause electric shock or malfunction.
- When wiring the GOT, check the rated voltage and terminal layout of the wiring, and make sure the wiring is done correctly. Connecting a power supply that differs from the rated voltage or wiring it incorrectly may cause fire or failure.
- Tighten the UQI's terminal screws within the range of specified torque. If the terminal screws are loose, it may result in failure, short circuits, or malfunction.
- Be careful not to let foreign matter such as filings or wire chips get inside the GOT module. These can cause fire, breakdowns and malfunction.
5. PART IDENTIFICATION AND INSTALLATION METHOD

5.2 Installation Method

Use the fitted installation screws that come with the main module to assemble it.

(1) Installation panel and processing dimensions
If modules such as the control panel door and an attachment base made by the user are to be attached, the door and attachment base need to be processed as shown in the illustration below.

(2) Installation position
When installing the GOT, it should be separated from other equipment by the clearances indicated below.

[Design Precautions]

⚠️ DANGER
- Regardless the touch-switch function is set or not, when multiple touch switches (two places or more) are pressed simultaneously as shown in the following diagram, the GOT is designed to execute a pre-defined operation of the touch switch if a touch switch function is defined at the fourth vertex of the rectangle.

When two touch switches are pressed:

When three touch switches are pressed:

When four touch switches are pressed:

: Indicates touch switch.
: Indicates the switch recognized by the GOT.
: Indicates the switch that executes the set action.

When multiple touch switches are pressed simultaneously under the conditions described above, make sure that the system works safely by carefully considering the location of each touch switch function and adding an interlock circuit to the write device using a sequence program, etc. A malfunction might cause a breakdown, accident, or damage to the machine.

⚠️ CAUTION
- Do not bunch the communication cables with the main circuit or power wires, or install them close to each other. They should be installed 100 mm (3.9 inch) or more from each other. Failure to do so may result in noise that would cause malfunction.

[Installation Precautions]

⚠️ CAUTION
- Make sure GOT is fixed securely to the base, with the screws tightened carefully. Loose screws could cause the GOT to fall over and cause injury.
- Use the GOT in the environment given in the general specifications of the GOT User's Manual. Using the GOT outside the range of the general specifications may result in electric shock, fire or malfunction, or may damage or degrade the module.
5. PART IDENTIFICATION AND INSTALLATION METHOD

5.3 Diagram of External Dimensions

• SAFETY PRECAUTIONS •

(Read these precautions before using)

When using Mitsubishi equipment, thoroughly read this manual and the associated manuals introduced in this manual. Also pay careful attention to safety and handle the module properly. These precautions apply only to Mitsubishi equipment. Refer to the CPU module user's manual for a description of the PC system safety precautions.

These •SAFETY PRECAUTIONS• classify the safety precautions into two categories: "DANGER" and "CAUTION".

- **DANGER**
  - Procedures which may lead to a dangerous condition and cause death or serious injury if not carried out properly.

- **CAUTION**
  - Procedures which may lead to a dangerous condition and cause superficial to medium injury, or physical damage only, if not carried out properly.

Depending on circumstances, procedures indicated by **CAUTION** may also be linked to serious results.

In any case, it is important to follow the directions for usage.

Store this manual in a safe place so that you can take it out and read it whenever necessary. Always forward it to the end user.

[DESIGN PRECAUTIONS]

- **DANGER**
  - A malfunction in the GOT main module may keep the output ON or OFF. Add a circuit to externally monitor the output, which could lead to a serious accident.

An accident may occur by false output or malfunction.

- If a communication error (including by a disconnected cable) occurs while the monitor is running on the GOT, the communication between the GOT and the master station is interrupted, and the GOT stops running.

When using the bus connection: PC CPU goes down and the GOT stops running.

Put the system configuration using a GOT, design the system such that the crucial switching to the system is performed by the equipment other than the GOT with the assumption that a communication error could occur in the GOT.

An accident may occur by false output or malfunction.
WARRANTY

Please confirm the following product warranty details before starting use.

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 repaired at no cost via the dealer or Mitsubishi Service Company. Note that if repairs are required at a site overseas, on a detached island or remote place, expenses to dispatch an engineer shall be charged for.
   **[Gratis Warranty Term]**
   The gratis warranty term of the product shall be for one year 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. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.
   **[Gratis Warranty Range]**
   (1) 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.
   (2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
      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 (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
      5. 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.
      6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
      7. Any other failure found not to be the responsibility of Mitsubishi or the user.

2. Onerous repair term after discontinuation of production
   (1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued. Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.
   (2) Product supply (including repair parts) is not possible after production is discontinued.

3. Overseas service
   Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

4. Exclusion of chance loss 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, chance losses, lost profits incurred to the user by Failures of Mitsubishi products, damages and secondary damages caused from special reasons regardless of Mitsubishi's expectations, compensation for accidents, and compensation for damages to products other than Mitsubishi products and other duties.

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 MELSEC programmable logic controller, 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 programmable logic controller device, and that backup and fail-safe functions are systematically provided outside of the device for any problem or fault.
   (2) The Mitsubishi general-purpose programmable logic controller 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 National Defense purposes shall be excluded from the programmable logic controller applications.
      Note that even with these applications, if the user approves that the application is to be limited and a special quality is not required, application shall be possible.
      When considering use in aircraft, medical applications, railways, incineration and fuel devices, manned transport devices, equipment for recreation and amusement, and safety devices, in which human life or assets could be greatly affected and for which a particularly high reliability is required in terms of safety and control system, please consult with Mitsubishi and discuss the required specifications.
Additional Explanation for A851GOT

Graphic Operation Terminal

Specifications subject to change without notice.

When exported from Japan, this manual does not require application to the Ministry of Economy, Trade and Industry for service transaction permission.

IB(NA)-66825-B(0202)MEE