MITSUBISHI

A850GOT Graphic Operation Terminal

User's Manual
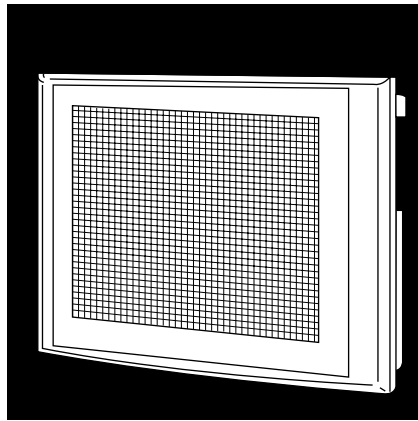
GRAPHIC OPERATION TERMINAL

800
Series

GOT
MELSEC

Mitsubishi Graphic Operation Terminal

● 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".

| ◇ DANGER | Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury. |
| ⚠ CAUTION | Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage. |

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]

◇ DANGER

- Some failures of the GOT main unit, communication module, bus connection module, communication cable or bus connection 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.
- 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.
  For other than bus connection　　 : 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.
- 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.

[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.
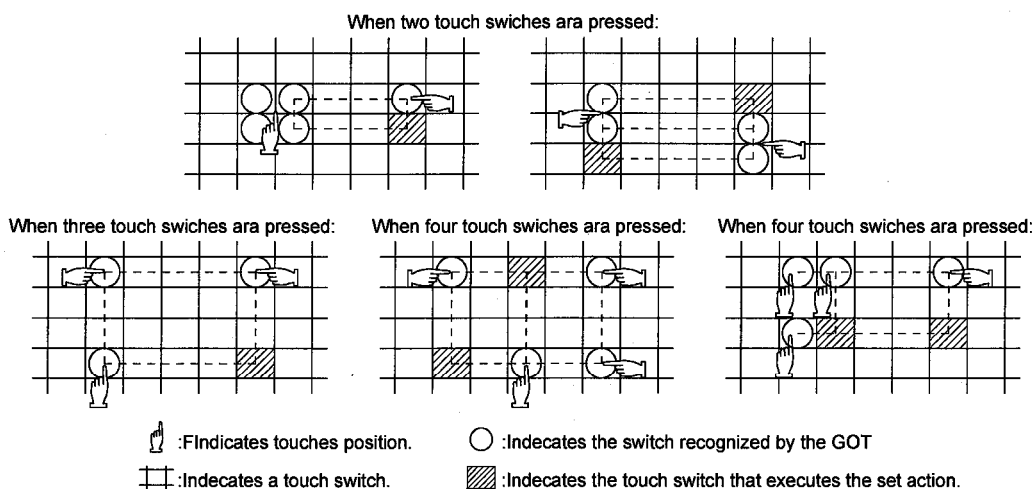 This may confuse an operator in thinking that the GOT is in "screensaver" mode, who then tries to release the GOT from this mode by touching the display section, which may cause a touch switch to operate.
  Note that the following occurs on the GOT when the backlight goes out.
  - The monitor screen 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.

When two touch swiches ara pressed:

When three touch swiches ara pressed: When four touch swiches ara pressed: When four touch swiches ara pressed:

- :FIndicates touches position.   ○ :Indecates the switch recognized by the GOT
- :Indecates a touch switch.   ▨ :Indecates the touch 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 sequence program, etc.
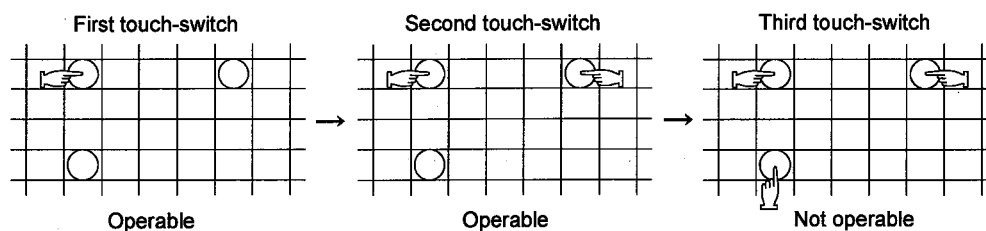A malfunction might cause a breakdown, accident, or damage to the machine.

[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.

First touch-switch	Second touch-switch	Third touch-switch
Operable	Operable	Not operable

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 and bus connection 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]

◇ DANGER

● Before installing or removing the GOT main unit to or from an enclosure, always switch off the GOT power externally in all phases.
Not doing so can cause a module failure or malfunction.
● Before loading or unloading the power supply module, communication module, bus connection module, memory cassette or memory card to or from the GOT, always switch off the GOT power externally in all phases.
Not doing so can cause a module failure or malfunction.

[Mounting Precautions]

◇ DANGER

- Make sure to switch all phases of the external GOT and PLC CPU side power supply off before connecting the communication cable and bus connection cable to the communication module and bus connection module.
  If you do not switch off the external power supply, it will cause failure or malfunction of the module.

⚠ 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 and option module 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, bus connection cables should be securely connected to the connectors of the bus connection module, bus connector conversion module, and base 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.
- The communication cable and GOT should be connected securely to the connector or terminal block on the communications module and PLC CPU side.
  Defective contact could cause a false input and output.
- When the communication module and bus connection module are installed to the GOT main module, attach them to the GOT attachment part by aligning to the screw guide, them tighten the module fixed screws within the range of specified torque.
  If the module fixed screws are loose, it may result in fallout, short circuits, or malfunctions.
  Tightening the module fixed screws too far may cause damages to the screws and/or the module, resulting in fallout, short circuits, or malfunction.

[Wiring Precautions]

◇ DANGER
• 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.

⚠ CAUTION
• 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. • Correctly wire the GOT 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 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 module. • When wiring the GOT, be careful that foreign objects, such as chips from the braided shield and wiring scraps, don't get caught in the GOT main module, power supply module, communication module, bus connection module, and the optional module. These can cause fire, failure or malfunctions.

[Test Operation Precautions]

◇ DANGER
• 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.

[Startup/Maintenance Precautions]

◇ DANGER

• 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.

⚠ CAUTION

• Do not disassemble or modify the GOT, communication module or option module.
  Doing so can cause a failure, malfunction, injury or fire.
• Do not touch the conductive and electronic parts of the GOT, communication module or option module directory.
  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, communication module and optional module.
  This may cause failure.

[Disposal Precautions]

◇ CAUTION
• When disposing of the product, handle it as industrial waste.

[Backlight Changing Precautions]

⚠ DANGER
• Before changing the backlight, always switch off the GOT power externally in all phases (when the GOT is connected to the bus, the PLC CPU power must also be switched off externally in all phases) and remove the GOT main unit from the enclosure. Not switching the power off in all phases may cause an electric shock. Not removing the unit from the enclosure can cause injury due to a drop.

⚠ 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 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 srecified 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]

◇ CAUTION
• When disposing of the backlight, handle it as industrial waste.

REVISIONS

Print Date	*Manual Number	Revision
Apr. 1996	IB(NA)-66669-A	First printing
Feb. 2002	IB(NA)-66669-B	Correction: SAFETY PRECAUTIONS

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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.

Contents

9. Installation

10. Maintenance and Inspection

11. Error Codes and Error Messages

12. Troubleshooting

Appendix

Appendix- 1

About the Manuals

The following product manuals are available. Please use this table as a reference to request the appropriate manual as necessary.

Related Manuals

Manual Name	Manual No. (Model Code)
SW1NIW-A8GOTP Graphic Settings Software Package Operating Manual (Introductory Manual) This manual is designed for the first-time user of the GOT. It describes how to create monitor screens with the A8GOTP, how to send monitor data to the GOT, and what the various screen displays mean. (Sold separately)	IB-66648 (13JF28)
SW1NIW-A8GOTP Graphic Settings Software Package Operating Manual (Startup Manual) This describes the configuration of the A8GOTP system, precautions regarding the configuration, and the specifications of the various functions, as well as the installation procedures, startup procedures, screen configurations, and basic operation procedures. (Sold separately)	IB-66649 (13JF29)
SW1NIW-A8GOTP Graphic Settings Software Package Operating Manual (Monitor Screen Creation Manual) This describes procedures for creating monitor screens, monitor functions that can be used with the GOT, procedures for setting the monitor functions, precautions to be observed when creating monitor screens, and precautions to be observed when appropriating conventional GOT monitor data for use with the GOT. (Sold separately)	IB-66650 (13JF30)
SW1NIW-A8GOTP Graphic Settings Software Package Operating Manual (Data Transmission/Debugging/Document Creation Manual) This manual describes the following items. (1) Procedures for downloading project data to the A870GOT and uploading data from the A870GOT (2) Procedures for installing the operating system in the A870GOT (3) Procedures for using the A8GOTP as a virtual sequencer and for debugging the A870GOT (4) Procedures for outputting created monitor data as a completed document (Sold separately)	IB-66651 (13JF31)
A870/A850GOT Graphic Operation Terminal Operating Manual (Expanded Functions Manual) This manual describes the operation procedures for using system monitor functions, monitor functions for special function units, and the dedicated monitor screens used with the circuit monitor functions. (Sold separately)	IB-66652 (13JF32)
A7GT-BUS Bus Connection Interface Unit User's Manual (Hardware Manual) This describes the specifications of the bus connection unit, the names of parts, and how to enter settings. (Sold separately)	IB-66556 (13JE92)
A7GT-BUS2 Multi-Drop Bus Connection Interface Unit User's Manual (Hardware Manual) This describes the specifications, names of parts, and settings for the multi-drop bus connection unit.	IB-66672 (13J849)
A7GT-CNB Bus Connector Conversion Box Instruction Manual This describes the specifications of the bus connector conversion box, and how connections are made.	BCN-P5138

Manual Name	Manual No. (Model Code)
A7GT-J71AP23/R23 Data Link Unit User's Manual This manual contains the specifications for the MELSECNET (II) Optical Data Link Unit/MELSECNET (II) Coaxial Data Link Unit, as well as the names and settings for the various parts.	IB-66438 (13JE26)
A7GT-J71AT23B Data Link Unit User's Manual This contains the specifications for the MELSECNET/B Data Link Unit, as well as the names and settings for the various parts.	IB-66439 (13JE27)
A7GT-J71LP23/BR13 Network Unit User's Manual This manual contains the specifications for the MELSECNET/10 Optical Loop Network Unit/MELSECNET/10 Coaxial Bus Network Unit, as well as the names and settings for the various parts.	IB-66558 (13JE94)
MELSECNET, MELSECNET/B Data Link System Reference Manual This manual contains an overview of the MELSECNET (II) and MELSECNET/B, as well as the specifications, names of parts, and the various settings.	IB-66350 (13JF70)
MELSECNET/10 Network System Reference Manual (For PC Networks) This manual contains an overview of the MELSECNET/10, along with the specifications, names of parts, and the settings.	IB-66440 (13JE33)
Computer Link/ Unit User's Manual (Computer Link Functions/Printer Functions Manual) This manual describes the unit settings, wiring, programming, troubleshooting procedures, and other information concerning communication with peripheral equipment using the dedicated protocol, the no-protocol mode and the bi-directional mode for the computer link unit, as well as printer functions. This manual can be used with the following computer link units: A1SJ71UC24-R2, A1SJ71UC24-R4, A1SJ71UC24-PRF, AJ71UC24, A2CCPUC24, A2CCPUC24-PRF, and A1SCPUC24-R2	SH-3511 (13JE77)
AJ71UC24 Computer Link/ Unit User's Manual (Hardware Manual) This manual explains the system configuration when using the unit, the unit specifications, and the names of parts and the settings, and contains diagrams of the external dimensions.	IB-66559 (13JE95)
A1SJ71UC24-R4 Computer Link/ Unit User's Manual (Hardware Manual) This manual explains the system configuration when using the unit, the unit specifications, and the names of parts and the settings, and contains diagrams of the external dimensions.	IB-66582 (13J805)
A8GT-50LT Backlight User's Manual This explains how to install the replacement backlight for the A850GOT.	IB-66670 (13J848)

1. Overview

This User's Manual describes the specifications, handling, utility functions, and other information pertaining to the A850GOT Graphic Operation Terminal unit (hereafter referred to as the GOT).

With the GOT, operations which were formerly handled using the operation panel, such as switch operations and displays of lamps, data, and messages, are now carried out using an electronic operation panel displayed on the monitor screen.

The GOT is equipped with the following types of displays.

Model	Display Unit
A850GOT-LWD	Monochrome LCD (ivory-colored, on the front of the main unit)
A850GOT-LBD	Monochrome LCD (dark gray, on the front of the main unit)
A850GOT-SWD	STN color LCD (ivory-colored, on the front of the main unit)
A850GOT-SBD	STN color LCD (dark gray, on the front of the main unit)

1.1 Features

1 **Free location of touch switches**

Up to 256 touch switches can be specified on one screen, so that touch switches can be positioned on any single dot on the screen.

The minimum size for touch switches is 16 x 16 dots (one full-width character), which provides the user with complete flexibility when creating monitor screens.

2 **32-bit RISC (*1) chip mounted in GOT CPU**

The GOT contains a 32-bit RISC chip, which enables high-speed processing in combination with use of a local bus.

This significantly reduces the amount of time needed for monitor screen switching, data display refreshing, and touch key response.

*1 RISC: Reduced Instruction Set Computer

3 **Backlights can be replaced by user, offers improved environmental features**

The backlights used in GOT display units are configured so that they can be replaced by the user. Also, GOT display units are waterproof and dustproof, and conform to standard IP65, enabling use under a wide range of environmental conditions.

4 | Accommodating diverse connection configurations such as bus connections and MELSECNET connections

In addition to bus connections which enable high-speed communications, the following are also possible: MELSECNET connections, calculator link unit connections, and direct connection to a CPU. This provides the user with unlimited flexibility in system configuration.

The connection interface required depends on the configuration being used.

① Bus connections (requires the A7GT-BUS/A7GT-BUS2 I/F unit)

This configuration offers the fastest PC CPU response speed. If a large-sized PC CPU is connected, the GOT can be installed up to 36.6 m (120 feet) from the main base. With a smaller PC CPU, the GOT can be installed as far as 30m (98 feet) from the main base. In addition, up to three GOT units can be connected to a single PC CPU. (There may be times when only two GOT units can be connected, depending on the type of PC CPU.)

Required interface unit ····· A7GT-BUS, A7GT-BUS2

— Connecting to a large-sized PC CPU —

· Connecting several GOT units

MAX 6.6m (22 feet)

MAX 30m (98 feet)

When 3 GOT units are being connected, the first one must always be positioned within 6.6 m (22 feet).

· Connecting one GOT at more than 6.6 m (22 feet)

MAX 6.6m (22 feet)

MAX 30m (98 feet)

A7GT-CNB (if the GOT is positioned at more than 6.6 m (22 feet) away, the A7GT-CNB is necessary.)

— Connecting to a small-sized PC CPU —

· Connecting several GOT units

MAX 6m (20 feet)

MAX 30m (98 feet)

When 3 GOT units are being connected, the first one must always be positioned within 6 m (20 feet).

· Connecting one GOT

MAX 6m (20 feet)

MAX 30m (98 feet)

② MELSECNET connections

This serves as a local station for a data link system, or an ordinary station for a network system, enabling several GOT units to be connected to one system.

Required interface unit A7GT-J71AP23, A7GT-J71AR23
A7GT-J71AT23B data link unit
A7GT-J71LP23, A7GT-J71BR13 network unit

Loop configuration   Bus configuration
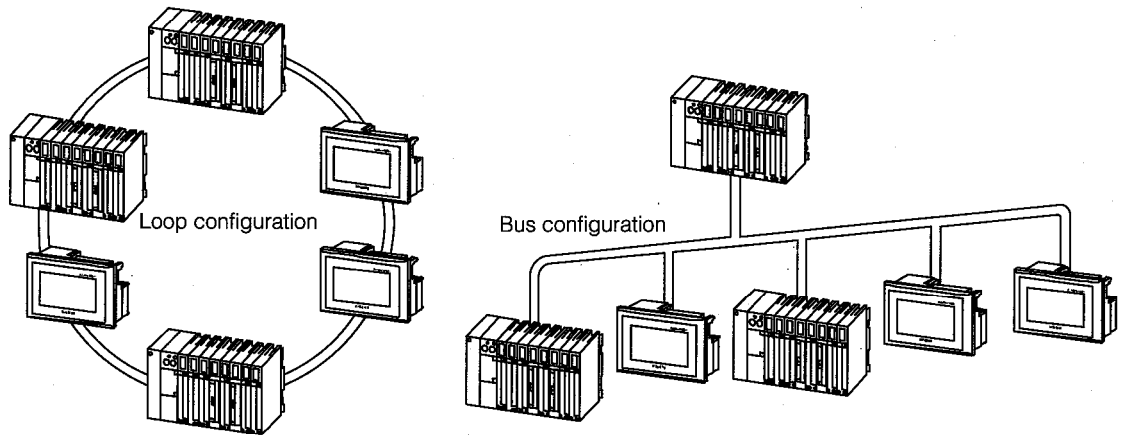
③ Calculator link connections

The GOT can be connected to a calculator link unit in a 1-to-1 configuration, enabling connection of several GOT units to one system.

Required interface unit: No interface unit is required.

AJ71UC24
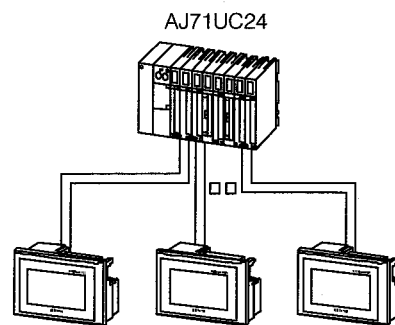
④ CPU direct connections

This is the most economical connection, requiring only an RS-422 cable.

Required interface unit: No interface unit is required.
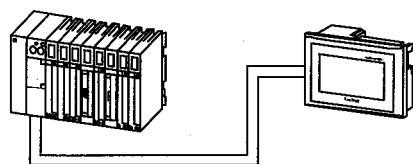
5 System monitor function for monitoring/changing the PC CPU device and special unit monitor function for monitoring/changing the buffer memory of a special function unit supported as a standard feature

· System monitor function .... This enables monitoring of PC CPU devices, as well as setting of values and changing of current values. (There are some restrictions that apply to monitoring with the QnACPU.)

(1) Entry monitor

Up to 8 points for a PC CPU device registered by the user can be monitored.

```
 ENTRY MONITOR    MENU FORM  SET
 NETWK No.[  0]   STATION[FF]

 D    15   -2147483648   DW
 D    10         -32767
 X   001          ●
 M    25          ○
 Y    70          ●
 W   200              43
 R    50        68378428   DW
 D     0               3
```

(2) Batch monitor

Up to 16 points subsequent to a PC CPU device specified by the user can be monitored.

```
 BATCH MONITOR    MENU FORM  SET
 NETWK No.[  0]   STATION[FF]

 D   10   32767    D   18    -500
 D   11       0    D   19    3234
 D   12       0    D   20       0
 D   13      -1    D   21       0
 D   14       0    D   22       0
 D   15       3    D   23  -32768
 D   16       0    D   24       0
 D   17       0    D   25       0
```

(3) T/C monitor

Up to 8 points subsequent to a PC CPU timer (T)/counter (C) specified by the user, including the current value, set value, contact point, and coil, can be monitored.

```
 TC MONITOR      MENU FORM  SET
 NETWK No.[  0]   STATION[FF]

 T    0  PV     0 SV    0 ─┤├─○┤ ▲
  [Production line  A]
 T    1  PV     0 SV    0 ─┤├─○┤
  [Production line  B]
 T    2  PV   150 SV  150 ─╂┤─●┤
  [Production line  C]
 T    3  PV     0 SV    0 ─┤├─○┤
  [Production line  D]                ▼
```

(4) Buffer memory monitor

Up to 16 points subsequent to the buffer memory of a special function unit specified by the user can be monitored.

```
 BM MONITOR      MENU FORM  SET
 NETWK No.[  0]   STATION[FF]
 I/O NO [  1]
 BM 1110   -32768   BM 1118       0
 BM 1111       64   BM 1119       0
 BM 1112      149   BM 1120     150
 BM 1113    -1111   BM 1121     131
 BM 1114      126   BM 1122  -32768
 BM 1115      160   BM 1123     555
 BM 1116      255   BM 1124    2368
 BM 1117     1200   BM 1125   11000
```

6 Screen debugging without connecting PC CPU

The graphics software supports a screen debugging function, so screens can be debugged simply by connecting the GOT and computer, without connecting the PC CPU.

Changing device value
Checking change to device value

Touch key operation
Checking change to screen display
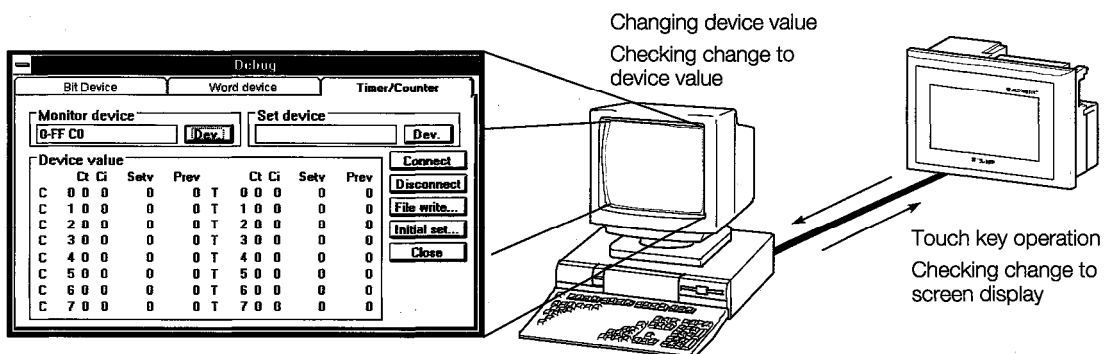
7 **Worldwide access through multi-language capability**

The Unicode^{*2} system is used to enable approximately 26,000 characters to be used, making it possible to accommodate languages from all over the world, including Japanese, Korea, Chinese (Mandarin), English, Italian, and French.

*2 Unicode = a standard international character code

8 **Graphics software is easier to use than ever before**

The graphics software runs on Windows 3.1, Windows 95^{*3}, so it can be used in a variety of development environments. Both Japanese and English can be used on-screen.

Through Windows, operation is easier than ever before.
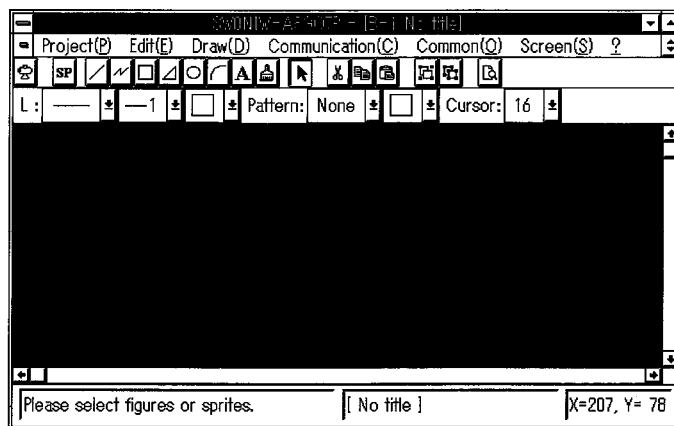
In addition, a panel kit library significantly reduces the amount of time required to create screens.

*3 Windows 3.1, Windows 95 is a registered trademark of Microsoft Corporation (U.S.).

1.2 Structure and Guide to the Use of This Manual

When the GOT is purchased, it comes with a user's manual. The graphics software also comes with five operating manuals. Manuals are categorized according to the purpose for which they are used. Please read the manual that corresponds to your particular objective in order to become familiar with the operations and functions of the software.

A850GOT User's Manual

- Install optional units (communications unit, power supply unit) in the GOT.
- Connect the GOT and the PC CPU.
- Find out how to attach the GOT and its external dimensions.
- Select a model.

A850GOT User's
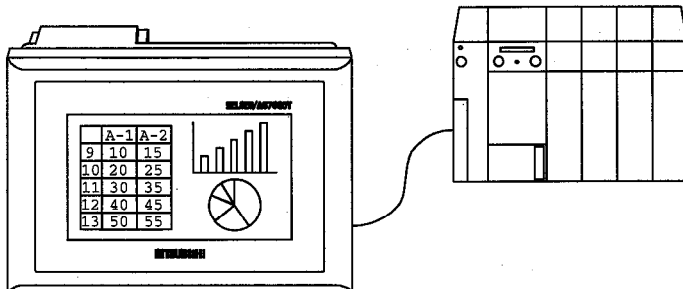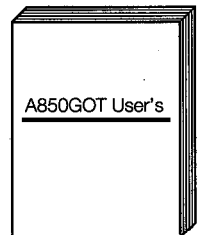
SW1NIW-A8GOTP Operating Manual

A870GOT/A850GOT Operating Manual

- Install the graphics software in the computer.
- Start up the graphics software.
- Learn fundamental information and basic operations for the graphics software.

SW1NIW-A8GOTP Operating

Startup manual

computer

Graphics software

Clock display
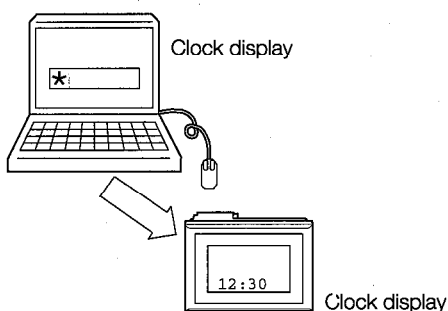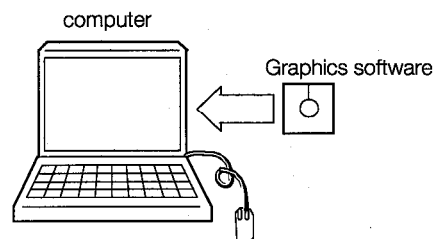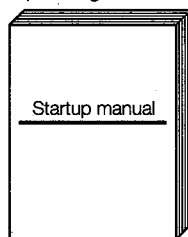
- Create simple graphics, monitor using the GOT, and learn the flow of a series of operations.

SW1NIW-A8GOTP Operating

Introductory manual

12:30

Clock display
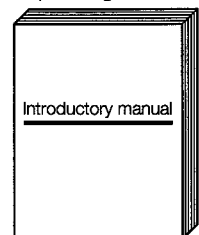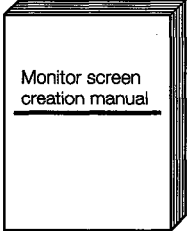
SW1NIW-A8GOTP
Operating

- Actually create screens for monitoring
  using the GOT.
  Drawing graphics
  Sprite settings
- Edit the data which has been created.

Monitor screen
creation manual

Line monitor
　　○ Conveyor 1
　　○ Conveyor 2
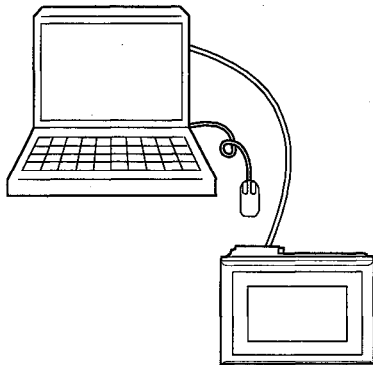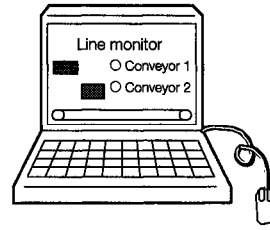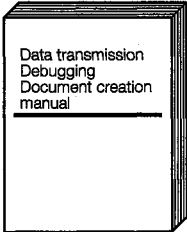
SW1NIW-A8GOTP
Operating

- Install the OS program and communi-
  cations driver in the GOT.
- Download created graphics to the GOT.
- Debug graphics between the computer
  and GOT.
- Create data documents.
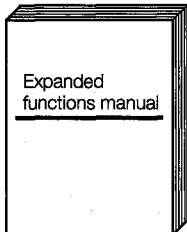
Data transmission
Debugging
Document creation
manual
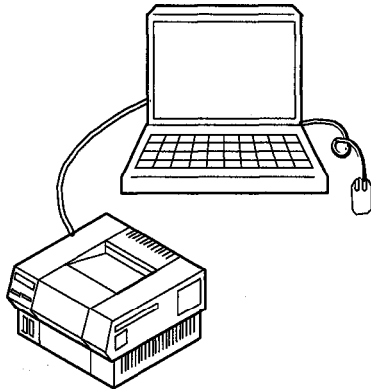
A870GOT/A850GOT
Operating

- Monitor the system.

Expanded
functions manual

System monitor

1 - 7
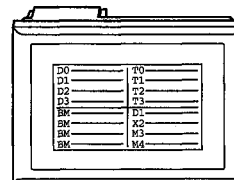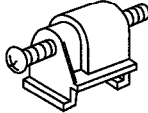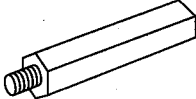
1.3   Abbreviations and Symbols Used in This Manual

(1) GOT .... This is the abbreviation for the A850GOT Graphic Operation Terminal. When the model name needs to be made explicit, however, "A850GOT" may be used.

(2) OS .... This is the abbreviation for the GOT system software.

(3) Internal memory .... This is the abbreviation for the memory (flash ROM) built into the GOT.

(4) BUS .... This refers to the A7GT-BUS connection interface unit.

(5) BUS 2 .... This refers to the A7GT-BUS2 multidrop connection interface unit.

(6) Bus connection unit .... This refers to the A7GT-BUS/A7GT-BUS2.

(7) Calculator link unit .... This refers to the AJ71UC24 calculator link unit and the A1SJ71C24-R4 calculator link unit.

(8) Data link unit .... This refers to the A7GT-J71AP23, A7GT-J71AR23, and A7GT-J71AT23B data link units.

(9) Network unit .... This refers to the A7GT-J71LP23 and A7GT-J71BR13 network units.

(10) Communications unit .... This refers to any unit used for communications, such as a bus connection unit, a calculator link unit, a data link unit, a network unit, or a serial communications unit.

(11) Graphics software .... This refers to the SW1NIW-A8GOTP Graphic Operation Terminal software package.

(12) computer .... This refers to a unit of peripheral equipment such as a Windows computer, on which the graphics software has been installed.

(13) Peripheral equipment for GPP
      functions .... This is a general term for peripheral equipment which supports GPP functions.

(14) MNET (II) .... This is an abbreviation for the MELSECNET (II) data link system.

(15) MNET/B .... This is an abbreviation for the MELSECNET/B data link system.

(16) MNET/10 .... This is an abbreviation for the MELSECNET/10 network system.

(17) CPU direct connection .... This refers to a system in which the GOT is connected to the PC CPU interface using an RS-422 cable.

(18) Bus connection ....This refers to a system in which the GOT is connected to the main base or expansion base using an expansion cable.

(19) Long-distance bus connection cable ....General term referring to long-distance connection cables such as the A7GT-C100EXS, A7GT-C200EXS, and A7GT-C100EXS.

(20) Long-distance GOT connection cable ......General term referring to long-distance cables used between GOT, such as the A7GT-C100B, A7GT-C200B, and A7GT-C300B.

(21) Bus connector conversion box ....Abbreviation referring to the A7GT-CNB bus connector conversion box.

(22) Calculator link connection ....This refers to a system in which the GOT is connected to the AJ71UC24, A1SJ71C24-R4, AJ71C24-S8, or AJ71QC24-R4.

(23) MELSECNET connection ....This refers to a system in which the GOT is connected to the MELSECNET (II), the MELSECNET/B, or the MELSECNET/10.

(24) Project data ....This refers to all of the data created using the graphics software, such as screen data.

*1 Windows is a registered trademark of Microsoft Corporation.

Product Name	Quantity
GOT main unit	1
Attachment hooks	4
Hex screws for securing communications unit	3

1 │ **Attaching the attachment hooks**
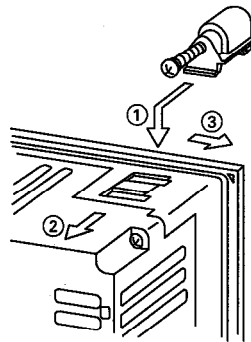
① Fit the attachment hook onto the GOT main unit.

② Slide the attachment hook in the direction indicated by ②.

③ Slide the attachment hook in the direction of the notch provided for the hook.

2 │ **Attaching the hex screws for securing the communications unit**
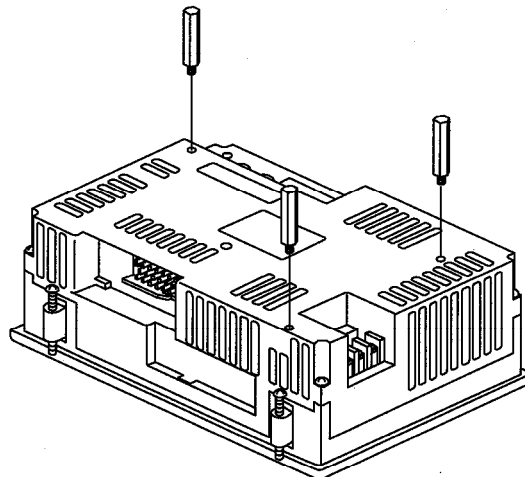
Tighten the hex screws for securing the communications unit tightly, within the rated torque (36.3 ~ 48 N-cm).
Failing to tighten these screws securely could cause the communications unit to fall off.

3 │ **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-50PSC protective sheet (transparent protective sheet) or the A8GT-50PSN (anti-reflection protective sheet), both of which are sold separately.

1.5   Procedures to Prepare for Starting Operation

```
                    ┌─────────────────────────┐
                    (         Start          )
                    └─────────────────────────┘
                                 │
                    ┌─────────────────────────┐ ┐
                    │ Install graphics software in │
                    │ computer                  │ │
                    └─────────────────────────┘ │
                                 │              │
                    ┌─────────────────────────┐ │  See A8GOTP
                    │ Boot graphics software   │ ├─ Operating
                    └─────────────────────────┘ │  Manual
                                 │              │
                    ┌─────────────────────────┐ │
                    │ Create project data      │ │
                    └─────────────────────────┘ │
                                 │              │
                    ┌─────────────────────────┐ │
                    │ Connect computer and GOT │ ┘
                    └─────────────────────────┘
                                 │                    Calculator link connection,
                                 │                    CPU direct connection
                    ◇─────────────────────────◇
                    ◇     Connecting the GOT   ◇────────────┐
                    ◇─────────────────────────◇            │
                                 │                          │
                    Bus connection MELSECNET               │
                    connection                             │
                                 │                          │
             ┌──  ┌─────────────────────────┐              │
             │    │ Install the bus connection unit/data │  │
             │    │ link unit/network unit   │             │
      See    │    └─────────────────────────┘              │
      Section 3  │              │                          │
      Section 6  │    ┌─────────────────────────┐  ┌─────────────────────────┐
             │    │ Set the switches for the units and │  │ Connect the cables      │
             │    │ connect the cables       │  └─────────────────────────┘
             └──  └─────────────────────────┘              │
                                 │◀─────────────────────────┘
                    ┌─────────────────────────┐
                    │ Install OS               │
                    └─────────────────────────┘
                                 │
                    ┌─────────────────────────┐      ········If necessary, register a password.
                    │ Download project data    │              When the data is downloaded,
                    └─────────────────────────┘              the GOT stops the monitoring
                                 │                            process and switches to off-line function.
                                 │
                    ┌─────────────────────────┐      ········If necessary, use the GOT utility function
                    │ Enter setup settings     │              to specify these.
                    └─────────────────────────┘              (See Section 7.3, Section 7.5.)
                                 │
                    ┌─────────────────────────┐
                    │ Run monitor              │
                    └─────────────────────────┘
```

POINT

(1) When the GOT is booted, if any numeric value other than 1 ~ 1024 is stored in a screen switching device, the No.1 monitor screen will be displayed. (Store the numeric value for the created monitor screen number.)

(2) If either of the following occurs, press the Reset switch on the GOT to reset it. (If a bus connection is being used, reset the power supply.)

  • If the parameters of the PC CPU have been changed

  • If changes have been made to the comment capacity of the PC CPU of another station being monitored, or to the file register capacity

(3) Before disconnecting the cable from the PC CPU being monitored through the CPU direct connection and connecting it to another PC CPU for monitoring, always turn off the power supply first.

2. System Configuration 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
(SW1NIW-GOT800PSET)
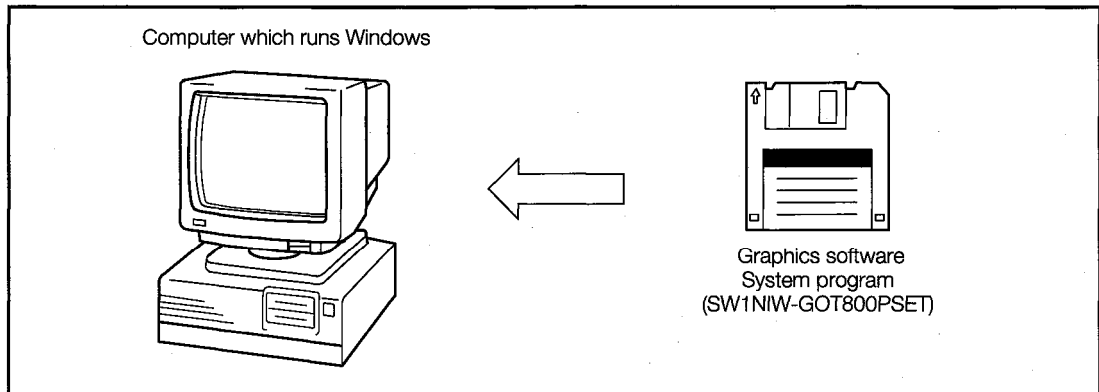
Main unit	:	Personal computer which runs Microsoft Windows Ver. 3.1
		Personal computer which runs Microsoft Windows 95
Main memory	:	At least 4 MB is required (8 MB or more is strongly recommended)
Hard disk	:	At least 10 MB of space must be available when the program is installed
CRT	:	Must be able to connect to main unit 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 Coufiguration

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

Computer which runs Windows	RS-232C cable	A850GOT
Graphics software System program SW1NIW-GOT800PSET	Printer cable	Printer which operates under Windows
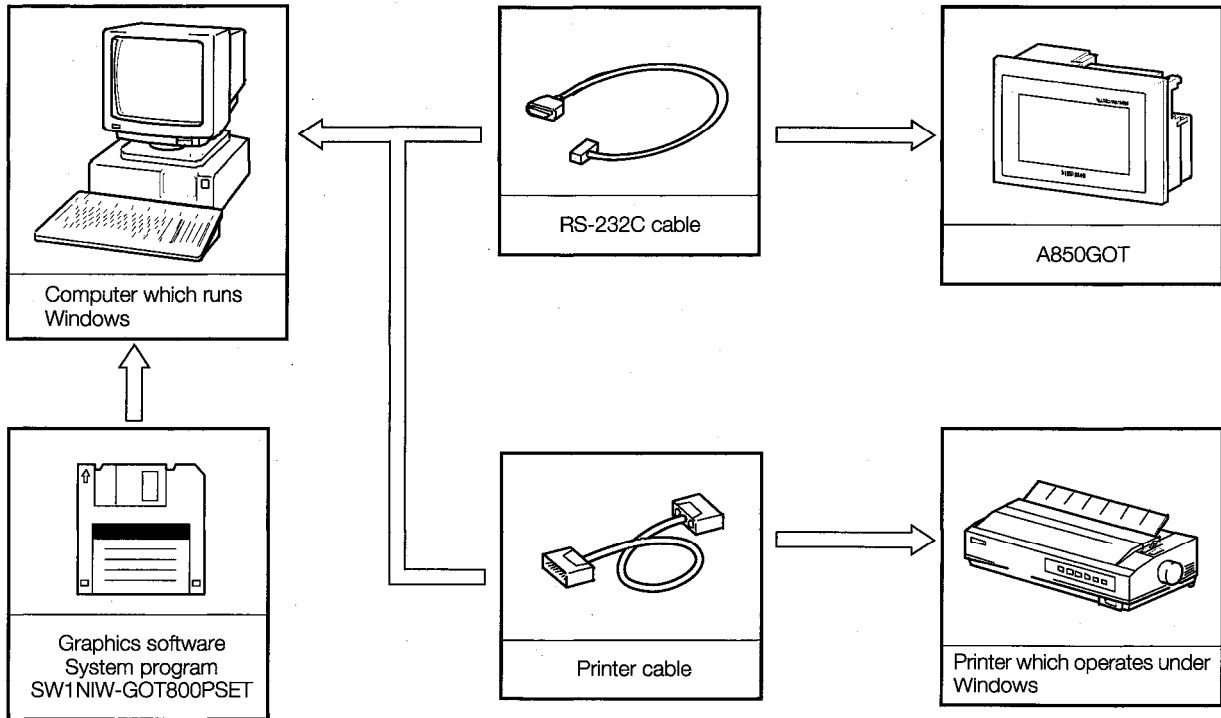
2.2.2 RS-232C Cables Used for Data Transmission

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

computer				A850GOT	
RXD	2		2	RXD	
TXD	3		3	TXD	
RTS	7		7	RTS	
CTS	8		8	CTS	
DSR	6		6	DSR	
SG	5		5	SG	
DTR	4		4	DTR	

* The connector on the A850GOT side should be a screw-on connector (with inch threads).

computer (9-pin) — AC30R2-9P F2-232CAB-1 — A850GOT

9-pin → 25-pin conversion connector
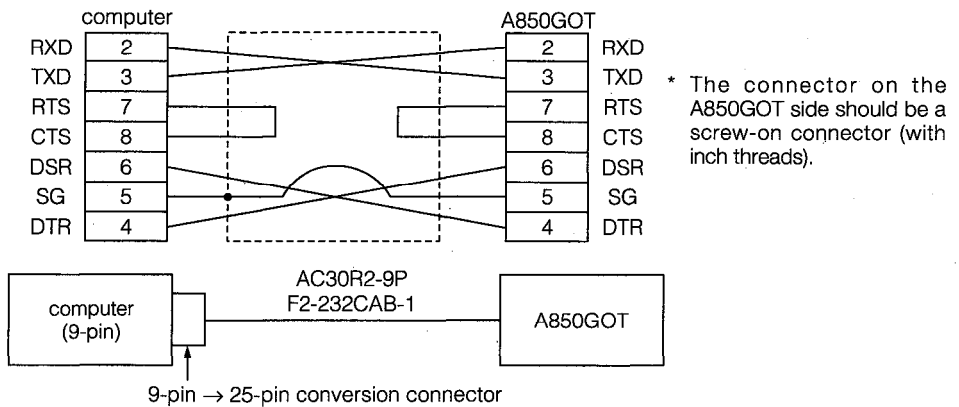
Maker	Model Name
Mitsubishi Electric	AC30R2-9P F2-232CAB-1 (introductory product)

3. System Configurations When Making Bus Connections

In addition to bus connections, the following are also possible: MELSECNET connections, calculator link unit connections, and direct connection to a CPU. The bus connection offers the fastest PC CPU response speed.

With bus connections, expansion connectors are used to connect the main base and the expansion base to the GOT. If a large-sized PC CPU is connected, the GOT can be installed up to 36.6 m (120 feet) from the main base. With a smaller PC CPU, the GOT can be installed as far as 30 m (98 feet) from the main base.

In addition, up to three GOT units can be connected to a single PC CPU. (There may be times when only two GOT units can be connected, depending on the type of PC CPU.)

Connecting to a small-sized PC CPU

(1) Connecting one GOT

(2) Connecting several GOT units

MAX 6 m (20feet)

MAX 3 m (98feet)

GOT

MAX 6 m (20feet)

GOT

MAX 3 m (98feet)

GOT

GOT
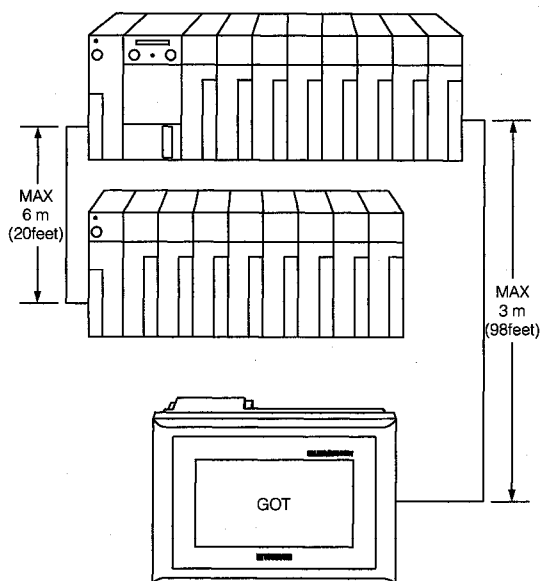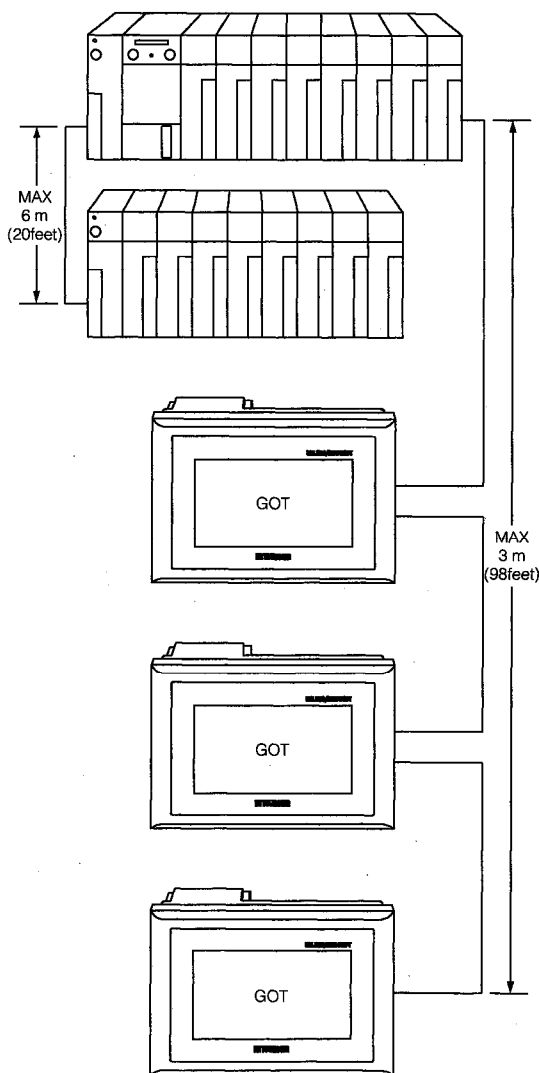
Connecting to a large-sized PC CPU

(1) Connecting a GOT within 6.6 m (22 feet)

MAX
6.6 m
(22 feet)

GOT
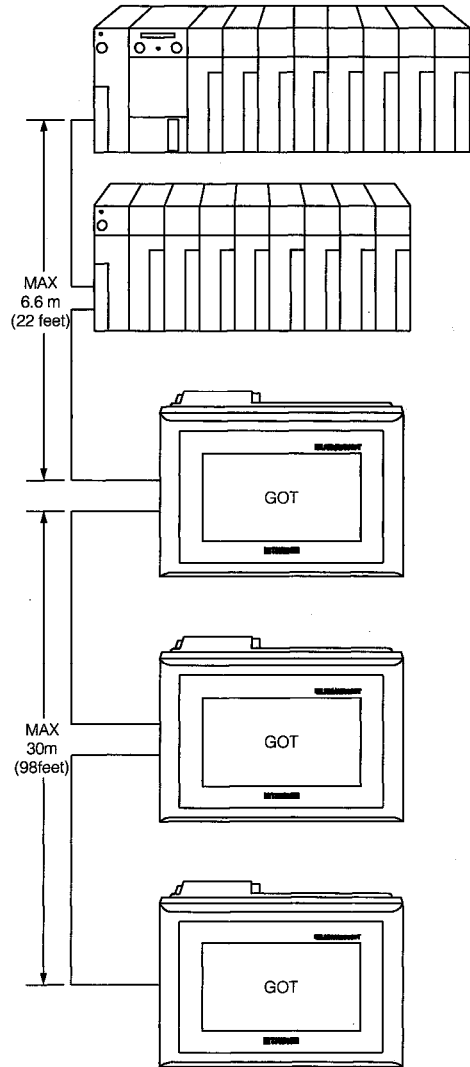
(2) Connecting a GOT at more than 6.6 m (22 feet)
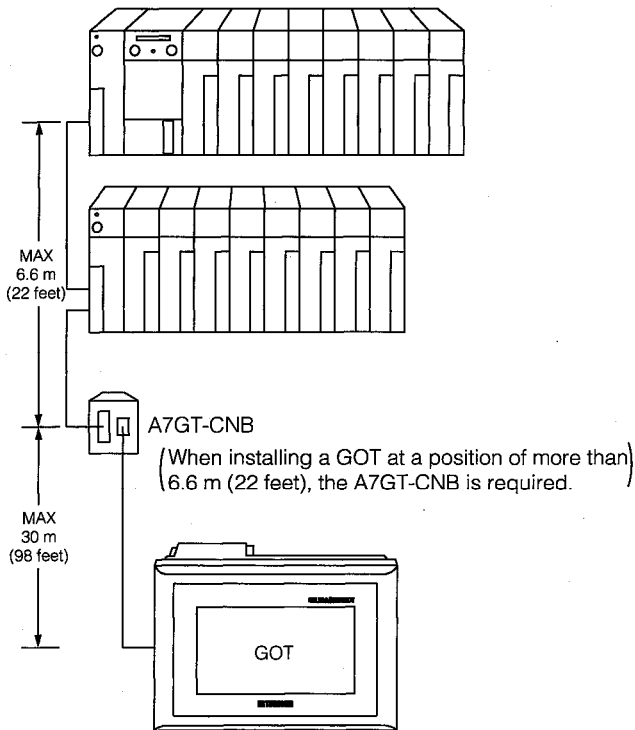
MAX
6.6 m
(22 feet)

A7GT-CNB

(When installing a GOT at a position of more than
6.6 m (22 feet), the A7GT-CNB is required.)

MAX
30 m
(98 feet)

GOT

(3) Connecting several GOT units

MAX
6.6 m
(22 feet)

GOT

MAX
30m
(98feet)

GOT

GOT

When 3 GOT units are being connected,
the first one must always be positioned
within 6.6 m(22 feet)

3.1 Useful Information When Making Bus Connections

3.1.1 PC CPU Handling of the GOT with Bus Connections

When using a bus connection, the PC CPU recognizes the GOT as a special function unit with 32 I/O points. For this reason, when one GOT is connected, there must always be one empty I/O slot (32 empty points) on the expansion base unit.
When connecting two GOT units, there must be two empty slots (64 empty points), and when connecting three GOT units, 3 slots are required (96 empty points).

Even if there are no empty I/O slots, however, the GOT can be connected and used through a bus connection if the number of empty points listed below are available.

Connecting 1 GOT ·········· 32 points
Connecting 2 GOTs ········· 64 points
Connecting 3 GOTs ········· 96 points

3.1.2 Restrictions When Using a Direct PC CPU Connection

If a direct I/O control is being used with the CPU connected to the GOT, the empty slot input X cannot be used when the GOT is connected as described below.

· When a 5 m(197 inch) expansion cable (AC50B (-R), A1SC50NB) is used to connect one GOT to the main/expansion base unit.

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 empty 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 FROM command input X

3) When input X of the empty slot is turned on and off from the calculator link unit

4) When input X of the empty slot is turned on and off using a touch switch function (bit SET/RST, alternate, momentary) of the GOT

└──┘

3.1.3   Restrictions on the Number of GOTs Connected to a PC CPU

When using a bus connection, there are some restrictions on the number of GOTs that can be connected, depending on the PC CPU to which the GOTs are connected, and the number of special function units installed.

	Q☐ACPU	A☐ACPU, A☐UCPU, A2USCPU	Other CPU
No. of GOTs which can be connected	Up to 3	Up to 3	Up to 2
No. of GOTs + special function units which can be installed	No restriction	Up to 6 altogether, including GOTs and special function units	Up to 2 altogether, including GOTs and special function units

*1. Special function units include the following models:

    AD51(S3), AD51H(S3), AD51FD(S3), AD57G(S3), AJ71C21(S1), AJ71C23,
    AJ71C24(S3/S6/S8), AJ71E71, AJ71UC24, A1SJ71UC24(R2/PRF/R4), A1SJ71E71

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. One of these procedures should be used even if several GOTs are connected to the CPU.

    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.

       If several GOTs have been connected, and the power supplies are being turned on one by one, the power supplies may be turned on in any order.

(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. If several GOTs have been connected, turning on the power supplies to all of the GOTs runs the CPU.

(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   Resetting the Hardware with a Bus Connection

When the GOT is connected using a bus connection, pressing the reset switch on the back of the GOT main unit does not reset the hardware.

When using a bus connection, the hardware should be reset by restarting the GOT (turning the power supply off and then on again).

3.2   Switch Settings for a Bus Connection Unit

When using a bus connection, the GOT must be assigned to one of the empty I/O slots in the expansion base unit. The assignment is made using the expansion stage switch and the I/O slot switch on the left side of the bus connection unit to which the GOT is connected.

Expansion stage switch

I/O slot switch

Bus connection unit
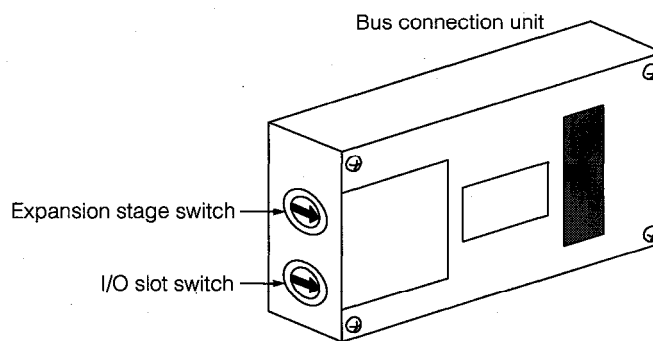
Expansion stage switch

Set the number of expansion stages of the empty I/O slots to which the GOT is assigned.
1 ~ 7   : Sets the number of expansion stages
0, 8, 9 : Cannot be used

I/O slot switch

Set the number of the empty I/O slot to which the GOT is assigned.
0 ~ 7   : Sets the number of the I/O slot
8, 9   : Cannot be used

POINT

The GOT cannot be assigned to an empty I/O slot on the main base; it must always be assigned to an empty I/O slot on the expansion base.

---

1 When no expansion base unit is connected

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

Example of settings

① When 1 GOT is connected

Expansion stage switch : 1
I/O slot switch : 0

② When 2 GOTs are connected

Expansion stage switch : 1
I/O slot switch : 0

Expansion stage switch : 1
I/O slot switch : 1

③ when 3 GOTs are connected

Expansion stage switch : 1
I/O slot switch : 0

Expansion stage switch : 1
I/O slot switch : 1

Expansion stage switch : 1
I/O slot switch : 2
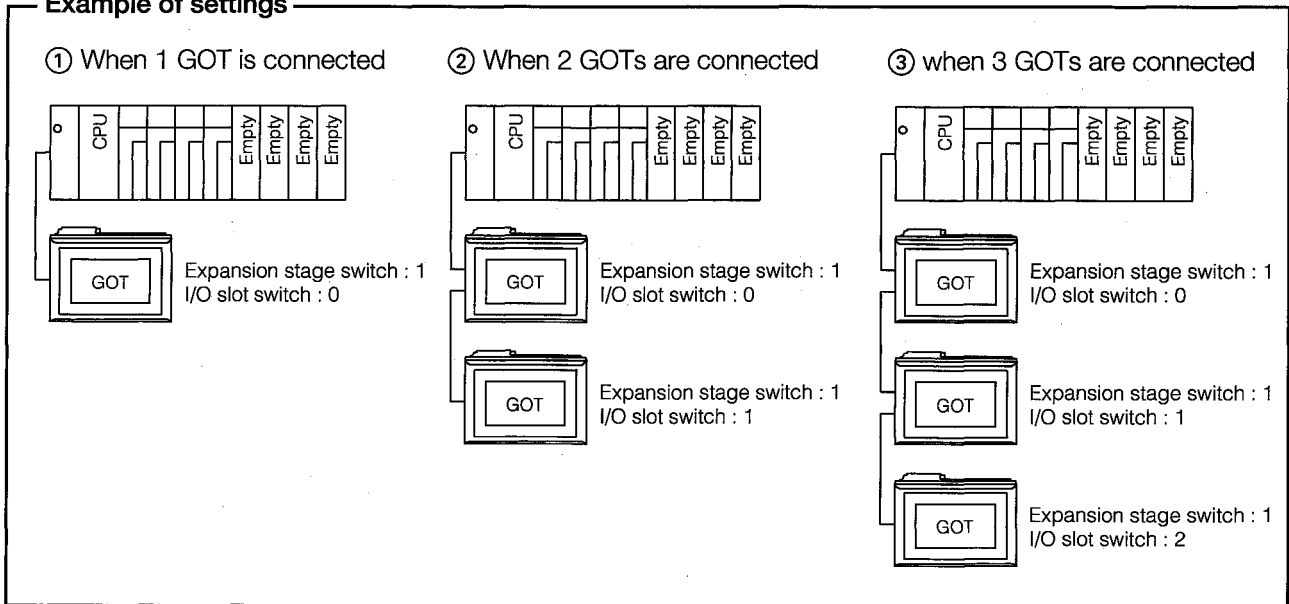
2 Settings when the GOT is assigned to an empty slot in the expansion base unit

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

Example of settings

① When 1 GOT is connected

Expansion stage switch: 1
I/O slot switch: 2 ~ 7

② When 2 GOTs are connected

Expansion stage switch: 1
I/O slot switch: 2 ~ 7

Expansion stage switch: 1
I/O slot switch: 2 ~ 7

Be careful that the same I/O slot switch
is not used for more than one setting.

③ When 3 GOTs are connected

Expansion stage switch: 1
I/O slot switch: 2 ~ 7

Expansion stage switch: 1
I/O slot switch: 2 ~ 7

Expansion stage switch: 1
I/O slot switch: 2 ~ 7

Be careful that the same I/O slot switch
is not used for more than one setting.

3 **When there are no empty I/O slots in the expansion base unit to which the GOT is connected**

Set the empty slots in the next expansion stage of the expansion base unit currently connected to the GOT.

Example of settings

① When 1 GOT is connected

Expansion stage switch : 2
I/O slot switch : 0

32 empty I/O points in the PC CPU are required.

② When 2 GOTs are connected

Expansion stage switch : 2
I/O slot switch : 0

Expansion stage switch : 2
I/O slot switch : 1

64 empty I/O points in the PC CPU are required.

③ When 3 GOTs are connected

Expansion stage switch : 2
I/O slot switch : 0

Expansion stage switch : 2
I/O slot switch : 1

Expansion stage switch : 2
I/O slot switch : 2

96 empty I/O points in the PC CPU are required.

POINT

If there are no empty I/O slots in any of the expansion base units within the maximum range of expansion stages, the expansion stage 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 an empty I/O slot in the expansion base unit.

· A3□CPU   · A4UCPU   · Q3ACPU   · Q4ACPU   · A0J2HCPU

If the CPU connected to the GOT is the A0J2HCPU, the GOT should be assigned to I/O slot 0 ~ 3 of the expansion stage unit.

3.3   System Configuration When 1 GOT is Connected

3.3.1   When the GOT is Installed within the Maximum Expansion Distance
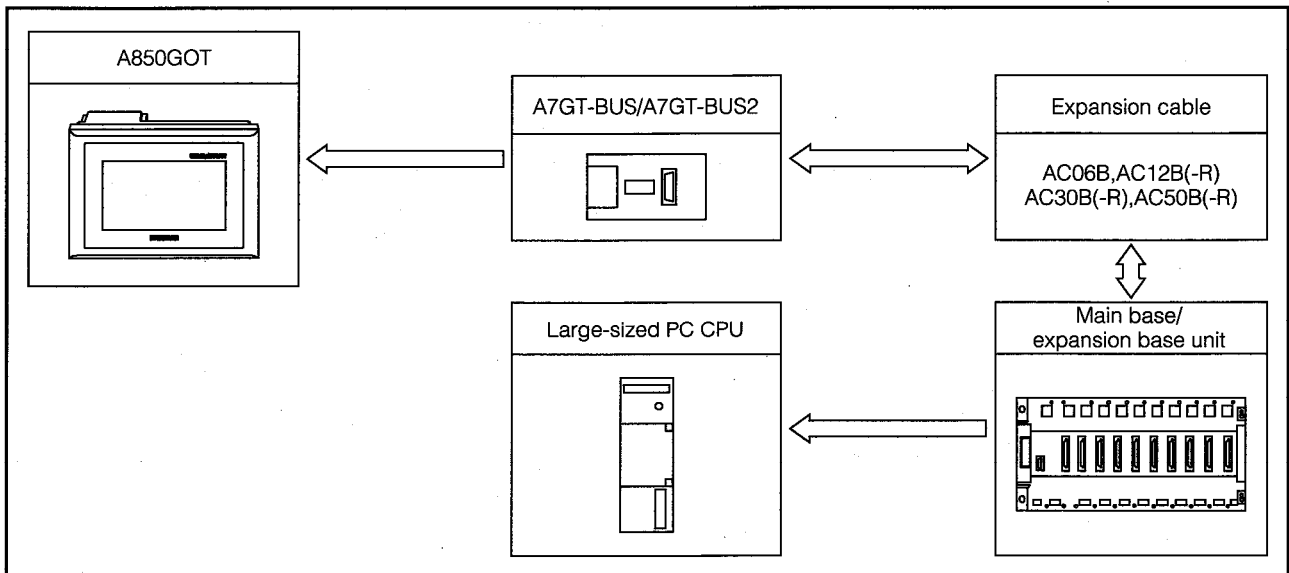
1 When the GOT is connected to a large-sized PC CPU

┌─── Precautions Concerning the System Configuration ───┐

(1) When using the A7GT-BUS, Version B or a subsequent version should be used.

(2) The total length of all of the expansion cables should not exceed 6.6 m(22 feet).

2 | **When the GOT is connected to a small-sized PC CPU**


```
┌──────────────────────────────────────────────────────────────────────────┐
│  A850GOT              A7GT-BUS/A7GT-BUS2              Expansion cable        │
│                                                       A1SC05NB              │
│                                                       A1SC07NB              │
│                                                       A1SC30NB              │
│                                                       A1SC50NB              │
│                                                                            │
│                                                       Main base unit        │
│                       Small-sized PC CPU                                    │
└──────────────────────────────────────────────────────────────────────────┘
```

┌─ **Precautions Concerning the System Configuration** ──────────────────────┐

(1) When using the A7GT-BUS, Version B or a subsequent version should be used.

(2) The GOT cannot be connected to a small-sized expansion base unit. It should be connected to the main base unit.

(3) The total length of all of the expansion cables should not exceed 6 m(20 feet).

3   **When the GOT is connected to the A0J2HCPU**


```
┌─────────────────┐      ┌─────────────────────┐      ┌──────────────────────┐
│ A850GOT         │      │ A7GT-BUS/A7GT-BUS2  │      │ Expansion cable      │
│                 │◄──   │                     │ ◄──► │ A0J2C04B A0J2C10B    │
│                 │      │                     │      │ (used when no        │
│                 │      │                     │      │  expansion base is   │
│                 │      │                     │      │  connected)          │
│                 │      │                     │      │ AC06B,AC12B(-R)      │
│                 │      │                     │      │ AC30B(-R),AC50B(-R)  │
└─────────────────┘      └─────────────────────┘      └──────────────────────┘
```

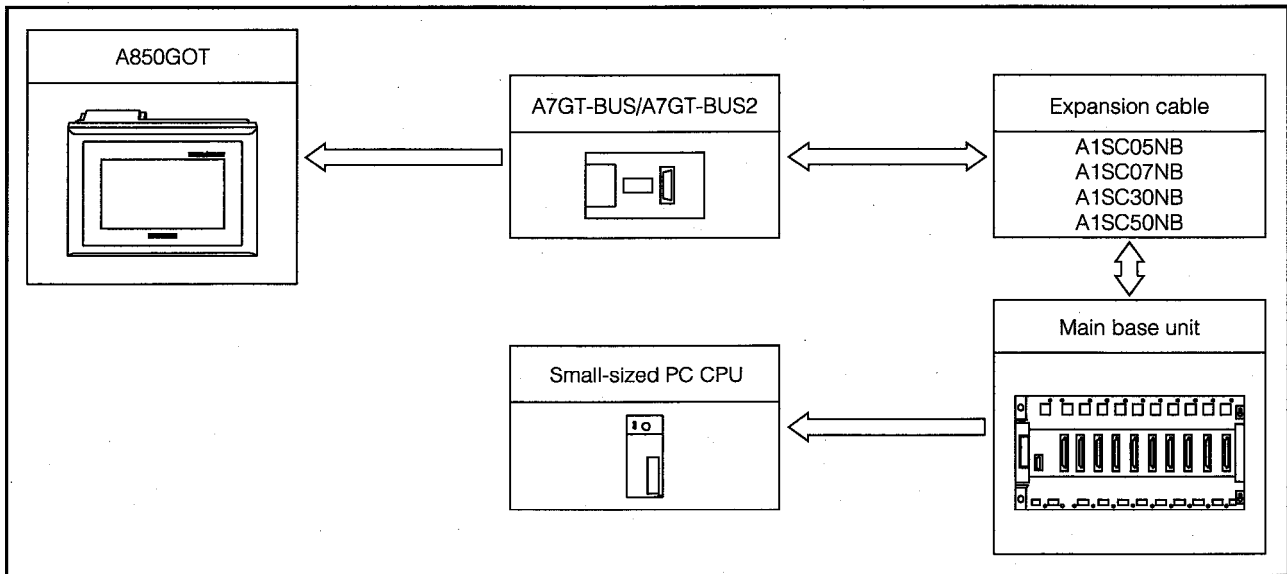|		
A0J2HCPU	I/O cable A0J2C □□	Power supply unit A0J2-PW
		Expansion cable A0J2C04B A0J2C10B

Expansion base unit (A55B, A65B)

┌── Precautions Concerning the System Configuration ──┐

(1) When using the A7GT-BUS, Version C or a subsequent version should be used.

(2) If the GOT is connected to the A0J2HCPU, always use the A0J2-PW power supply unit.

(3) The total length of all of the expansion cables should not exceed 6.6 m(22 feet).

3.3.2   When the GOT is Positioned beyond the Maximum Expansion Distance
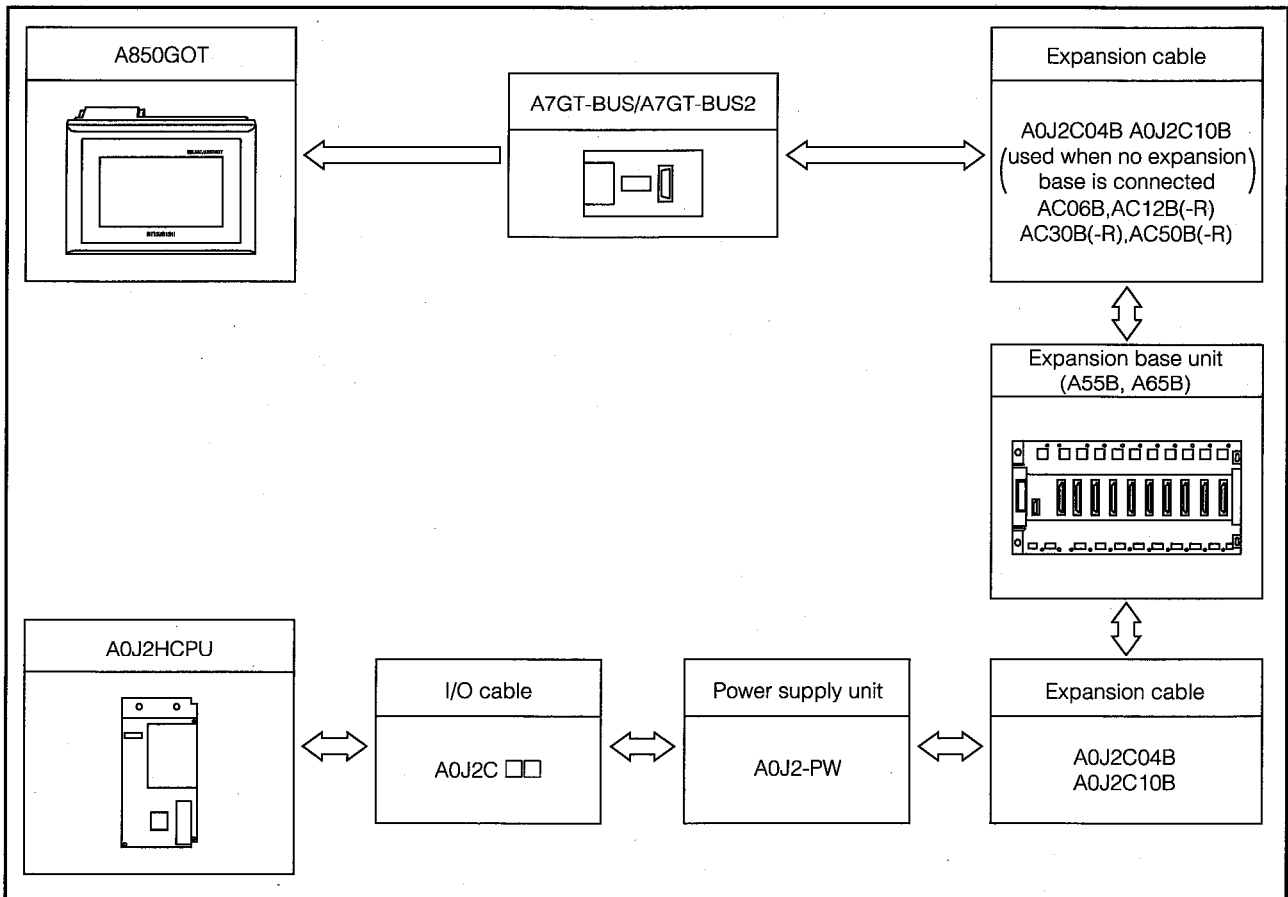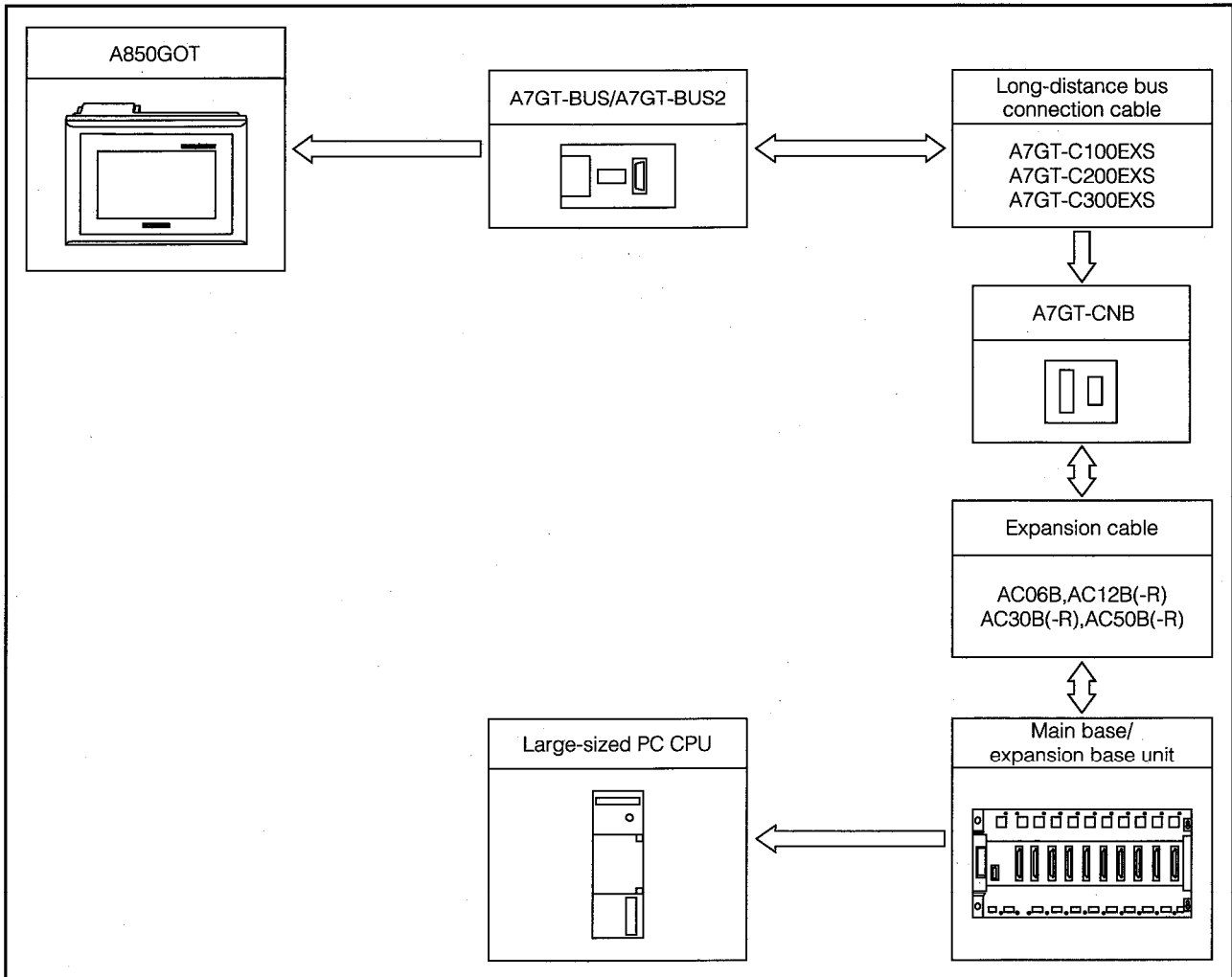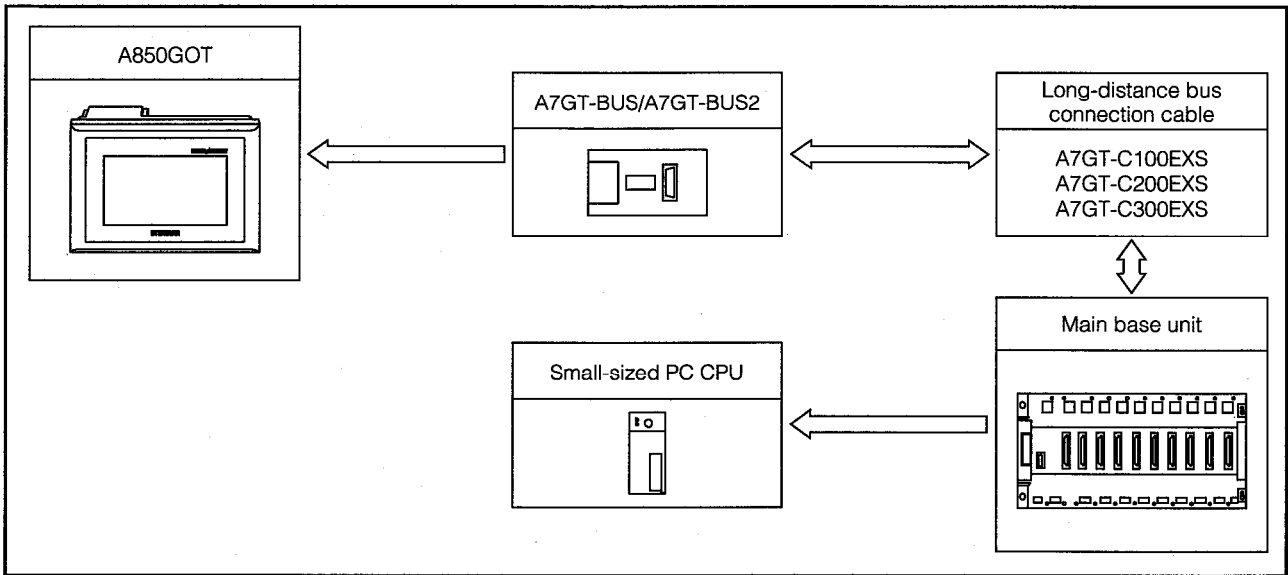
| 1 | When the GOT is connected to a large-sized PC CPU

Precautions Concerning the System Configuration

(1) When using the A7GT-BUS, Version C or a subsequent version should be used.

(2) If the GOT is connected to a large-sized CPU and is positioned beyond the maximum expansion distance, the A7GT-CNB bus connector conversion box is required.

(3) Connect the CON1 connector on the long-distance bus connection cable to the A7GT-CNB, and the CON2 connector to the A7GT-BUS/A7GT-BUS2.

(4) The total length of expansion cables from the main base unit to the A7GT-CNB should not exceed 6.6 m(22 feet).

(5) The total length of all of the expansion cables and long-distance bus connection cables should not exceed 36.6 m(120 feet).
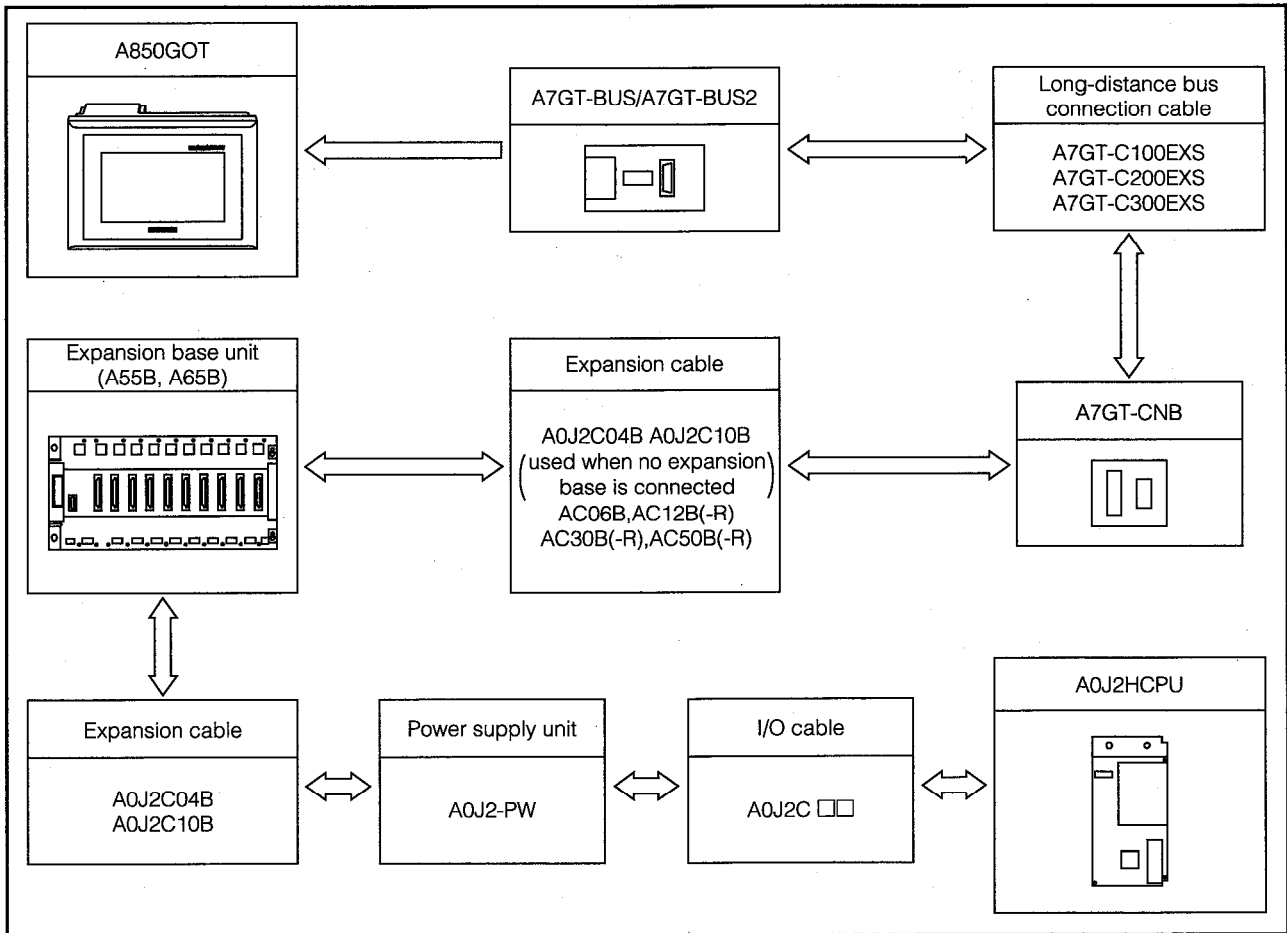
2   **When the GOT is connected to a small-sized PC CPU**

┌─── **Precautions Concerning the System Configuration** ───┐

(1) When using the A7GT-BUS, Version C or a subsequent version should be used.

(2) Connect the CON1 connector on the long-distance bus connection cable to the main base unit, and the CON2 connector to the A7GT-BUS/A7GT-BUS2.

3 When the GOT is connected to the A0J2HCPU

A850GOT		A7GT-BUS/A7GT-BUS2		Long-distance bus connection cable

A7GT-C100EXS
A7GT-C200EXS
A7GT-C300EXS

Expansion base unit (A55B, A65B)		Expansion cable		A7GT-CNB

A0J2C04B A0J2C10B
(used when no expansion base is connected)
AC06B,AC12B(-R)
AC30B(-R),AC50B(-R)

| Expansion cable		Power supply unit		I/O cable		A0J2HCPU
A0J2C04B A0J2C10B		A0J2-PW		A0J2C □□		

Precautions Concerning the System Configuration

(1) When using the A7GT-BUS, Version C or a subsequent version should be used.

(2) If the GOT is connected to a large-sized CPU and is positioned beyond the maximum expansion distance, the A7GT-CNB bus connector conversion box is required.

(3) Connect the CON1 connector on the long-distance bus connection cable to the A7GT-CNB, and the CON2 connector to the A7GT-BUS/A7GT-BUS2.

(4) The total length of expansion cables from the expansion base unit to the A7GT-CNB should not exceed 6.6 m(22 feet).

(5) The total length of all of the expansion cables and long-distance bus connection cables should not exceed 36.6 m(120 feet).

3.4   System Configuration When 2 GOTs are Connected

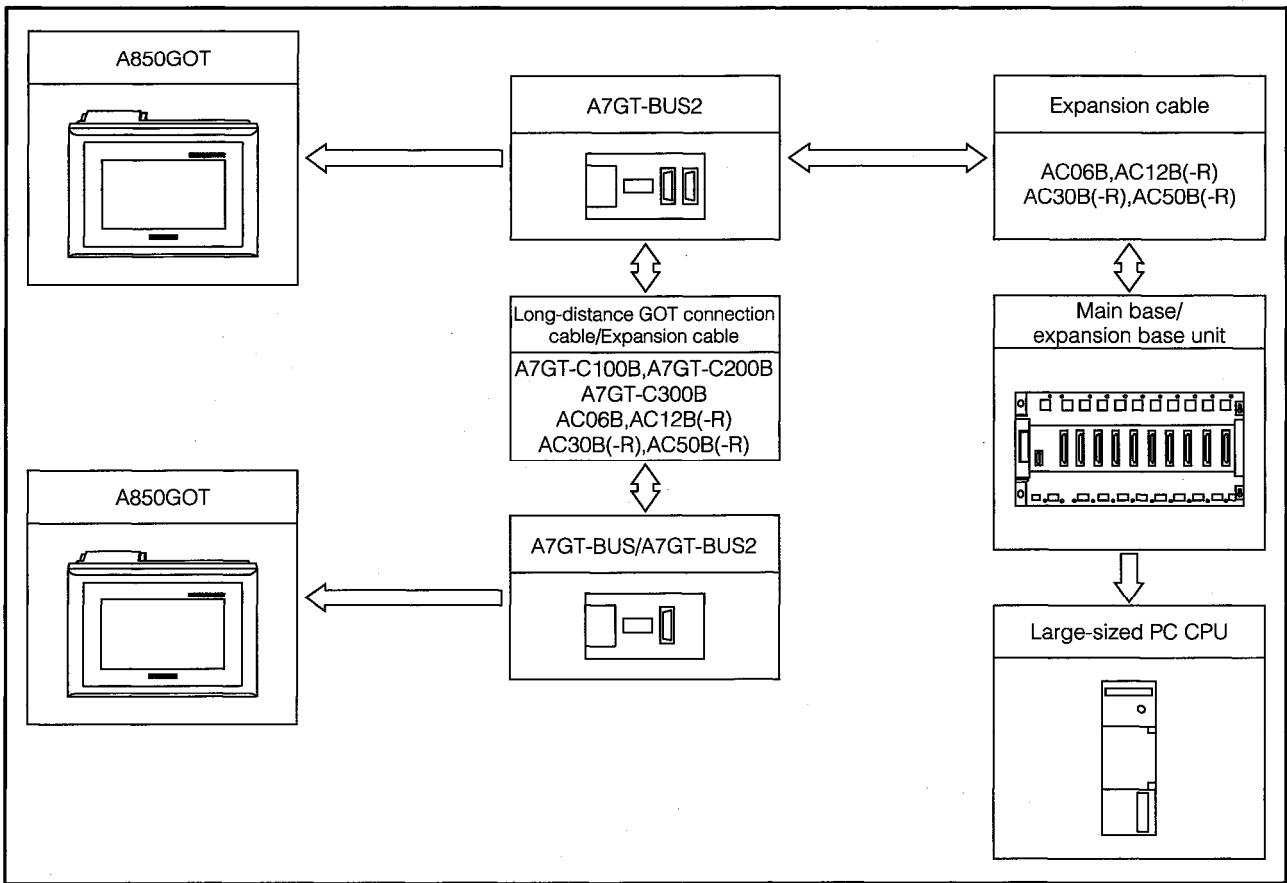### 3.4.1   When the GOTs are Connected to a Large-sized PC CPU

1   **When both GOTs are positioned within 6.6 m(22 feet)**
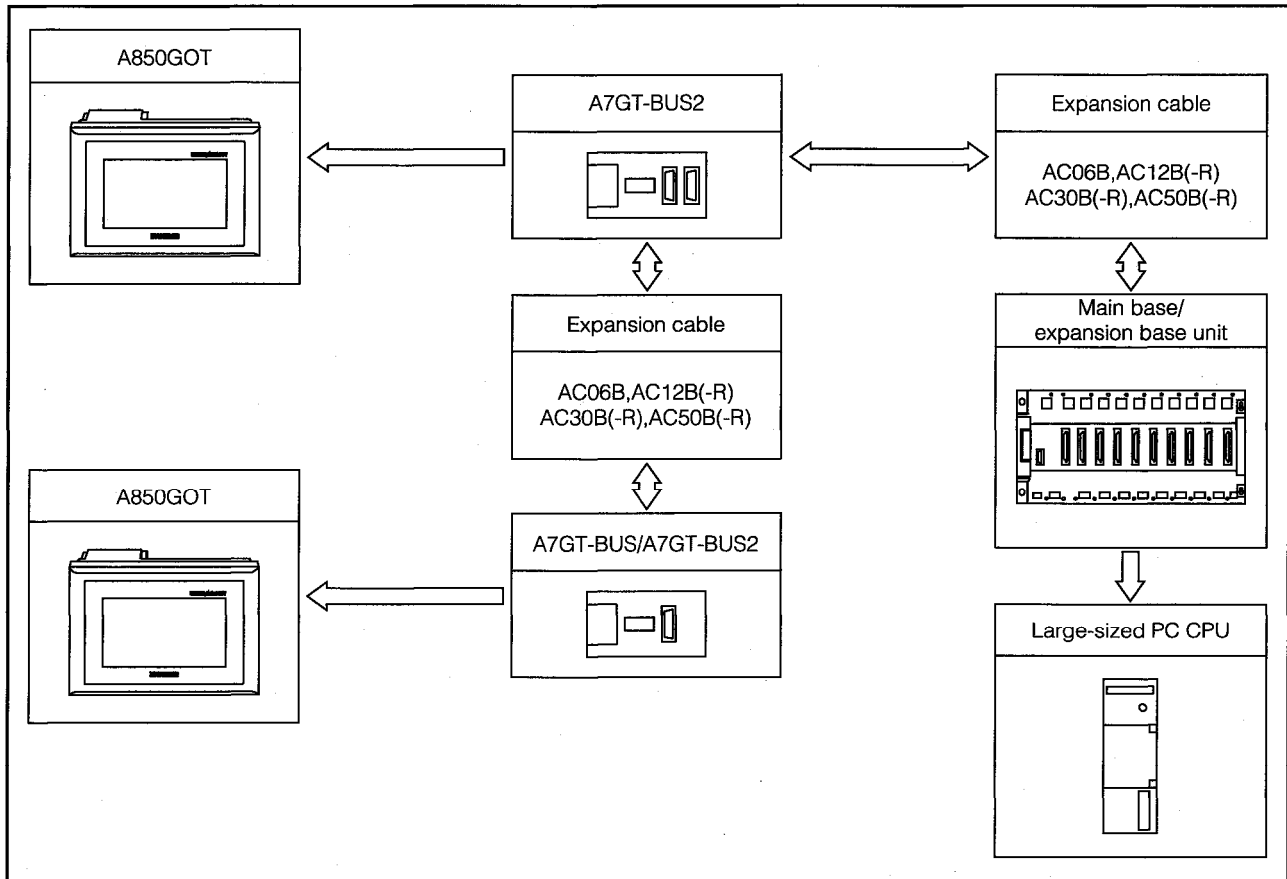
┌─── **Precautions Concerning the System Configuration** ───────────┐

(1) When the two GOTs are connected to the A7GT-BUS, Version C or a subsequent version
should be used.

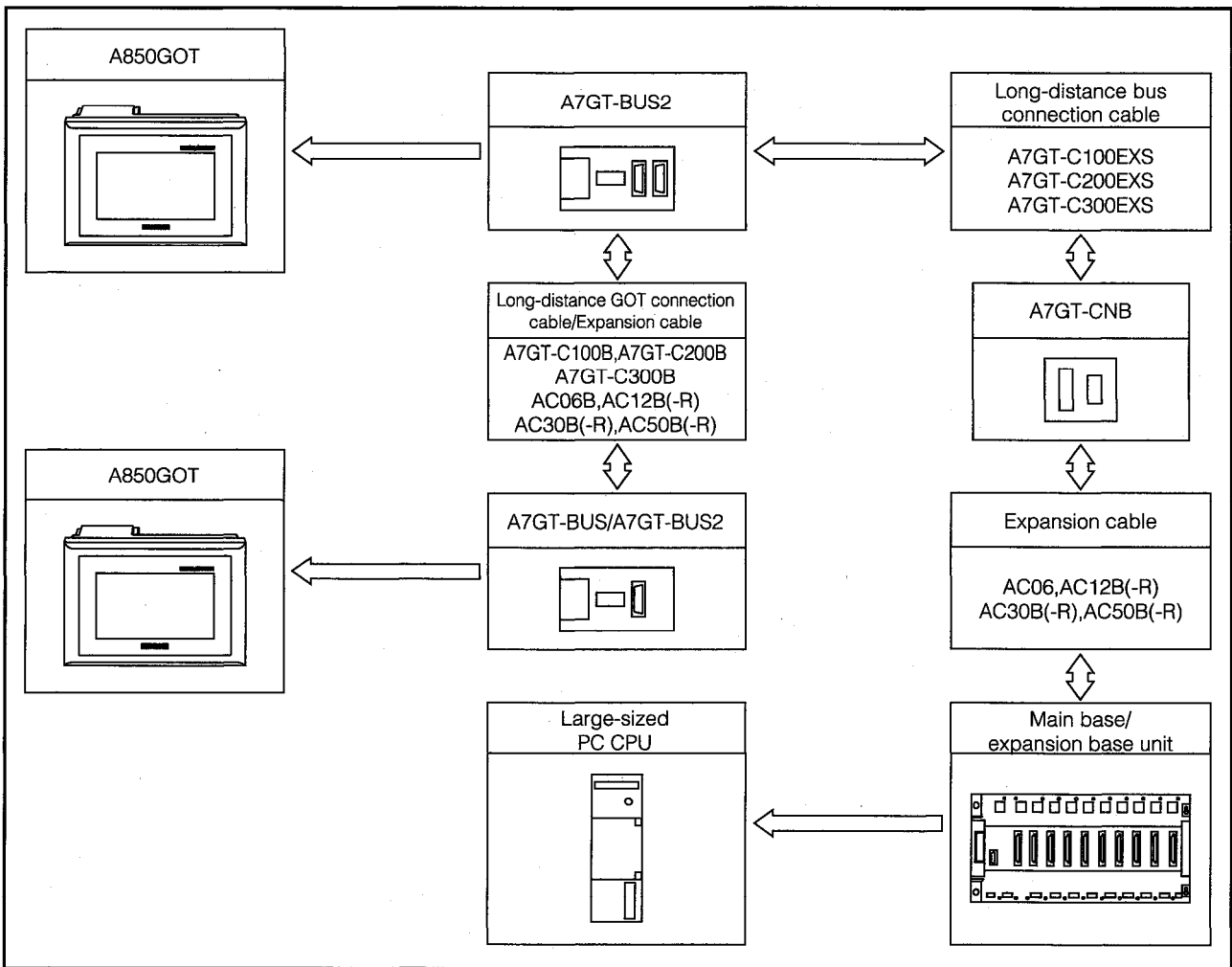(2) The total length of all of the expansion cables should not exceed 6.6 m(22 feet).

2 When one GOT is positioned within 6.6 m(22 feet) and the other exceeds 6.6 m(22 feet)

A850GOT	A7GT-BUS2	Expansion cable
		AC06B,AC12B(-R) AC30B(-R),AC50B(-R)

	Long-distance GOT connection cable/Expansion cable	Main base/ expansion base unit
A850GOT	A7GT-C100B,A7GT-C200B A7GT-C300B AC06B,AC12B(-R) AC30B(-R),AC50B(-R)	

	A7GT-BUS/A7GT-BUS2	Large-sized PC CPU

Precautions Concerning the System Configuration

(1) When the two GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

(2) The total length of all of the expansion cables and long-distance GOT connection cables should not exceed 36.6 m(120 feet).

3 **When both GOTs are beyond 6.6 m(22 feet)**

A850GOT	A7GT-BUS2	Long-distance bus connection cable
		A7GT-C100EXS A7GT-C200EXS A7GT-C300EXS

Long-distance GOT connection cable/Expansion cable	A7GT-CNB
A7GT-C100B,A7GT-C200B A7GT-C300B AC06B,AC12B(-R) AC30B(-R),AC50B(-R)	

A850GOT	A7GT-BUS/A7GT-BUS2	Expansion cable
		AC06,AC12B(-R) AC30B(-R),AC50B(-R)

Large-sized PC CPU	Main base/ expansion base unit

Precautions Concerning the System Configuration

(1) When the two GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

(2) If the GOTs are connected to a large-sized CPU and are positioned beyond the maximum expansion distance, the A7GT-CNB bus connector conversion box is required.

(3) Connect the CON1 connector on the long-distance bus connection cable to the A7GT-CNB, and the CON2 connector to the A7GT-BUS/A7GT-BUS2.

(4) The total length of expansion cables from the main base unit to the A7GT-CNB should not exceed 6.6 m(22 feet).

(5) The total length of all of the expansion cables, long-distance bus connection cables, and long-distance GOT connection cables should not exceed 36.6 m(120 feet).

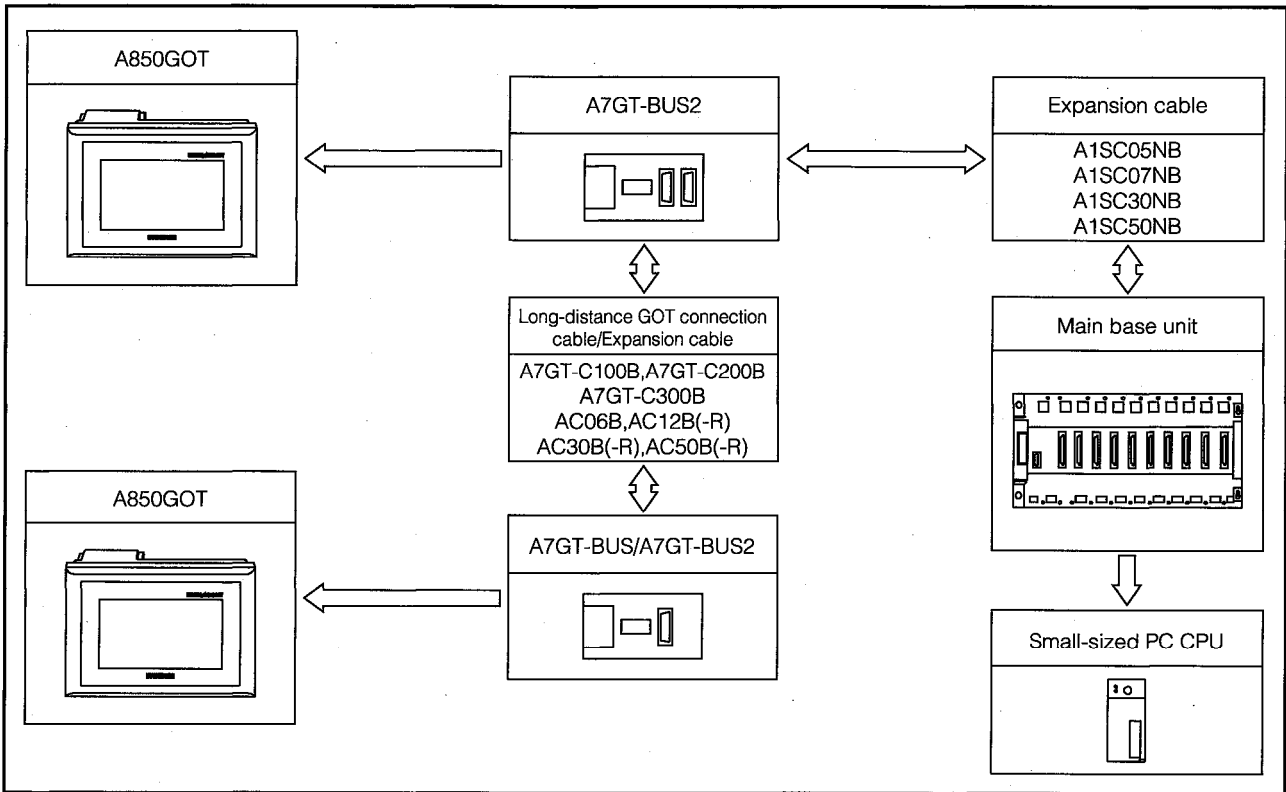### 3.4.2 When the GOTs are Connected to a Small-sized PC CPU

| 1 | When both GOTs are positioned within 6 m(20 feet)
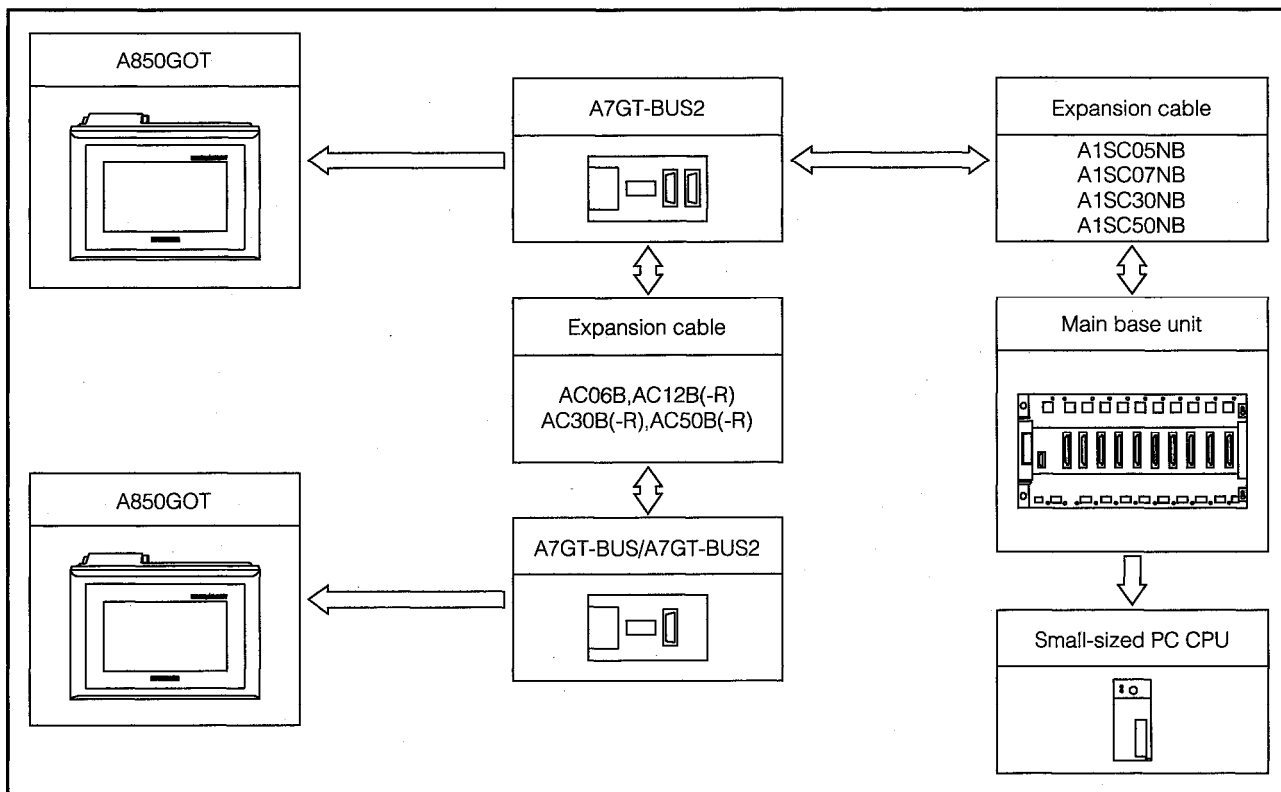
Precautions Concerning the System Configuration

(1) When the two GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

(2) The total length of all of the expansion cables should not exceed 6 m(20 feet).

2   **When one GOT is positioned within 6 m(20 feet) and the other exceeds 6 m(20 feet)**

A850GOT	A7GT-BUS2	Expansion cable
		A1SC05NB A1SC07NB A1SC30NB A1SC50NB

Long-distance GOT connection cable/Expansion cable	Main base unit
A7GT-C100B,A7GT-C200B A7GT-C300B AC06B,AC12B(-R) AC30B(-R),AC50B(-R)	

A850GOT	A7GT-BUS/A7GT-BUS2	Small-sized PC CPU

Precautions Concerning the System Configuration

(1) When the two GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

(2) The total length of all of the expansion cables and long-distance GOT connection cables should not exceed 36 m(118 feet).

| 3 | When both GOTs are beyond 6 m (20 feet) |
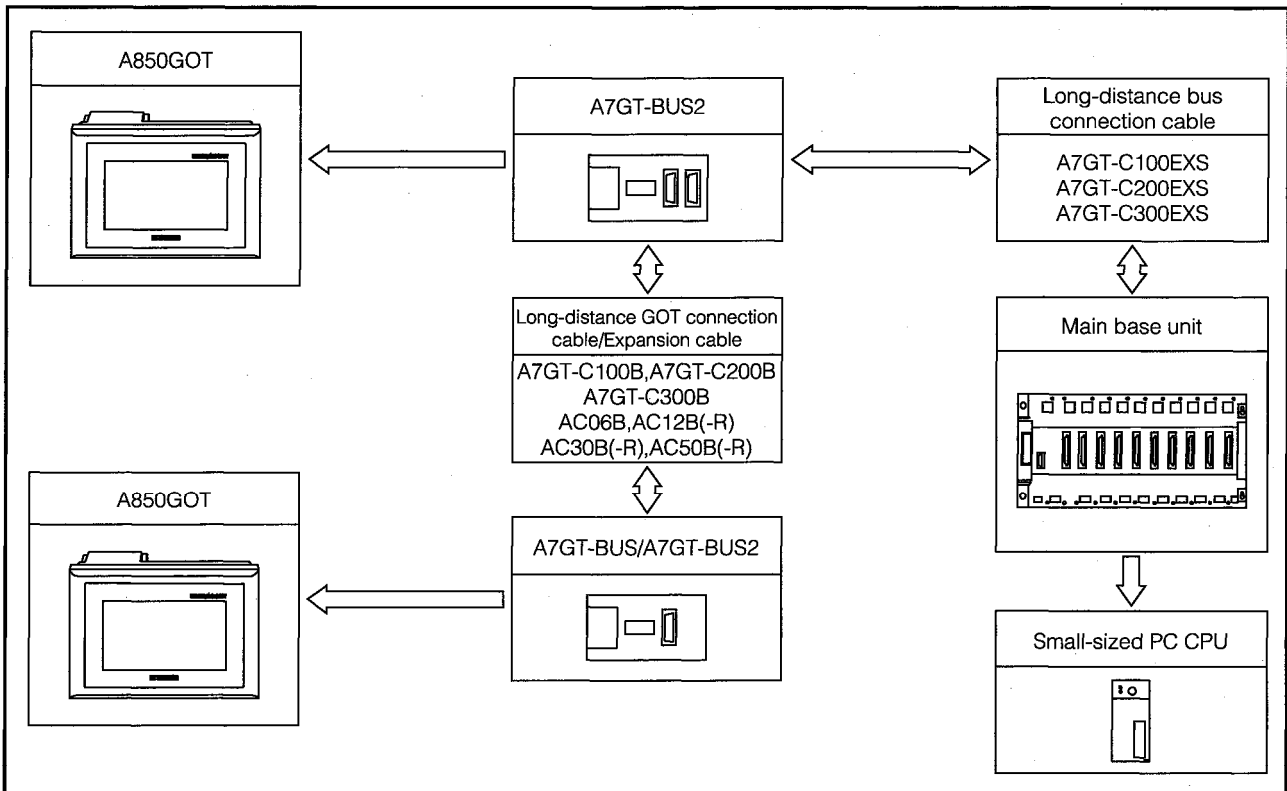
Precautions Concerning the System Configuration

(1) When the two GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

(2) Connect the CON1 connector on the long-distance bus connection cable to the main base unit, and the CON2 connector to the A7GT-BUS/A7GT-BUS2.

(3) The total length of all of the expansion cables, long-distance bus connection cables, and long-distance GOT connection cables should not exceed 36 m(118 feet).

3.4.3   If the GOT is Connected to the A0J2HCPU

See Sections 3.3.1 (3), 3.3.2 (3), and 3.4.1.

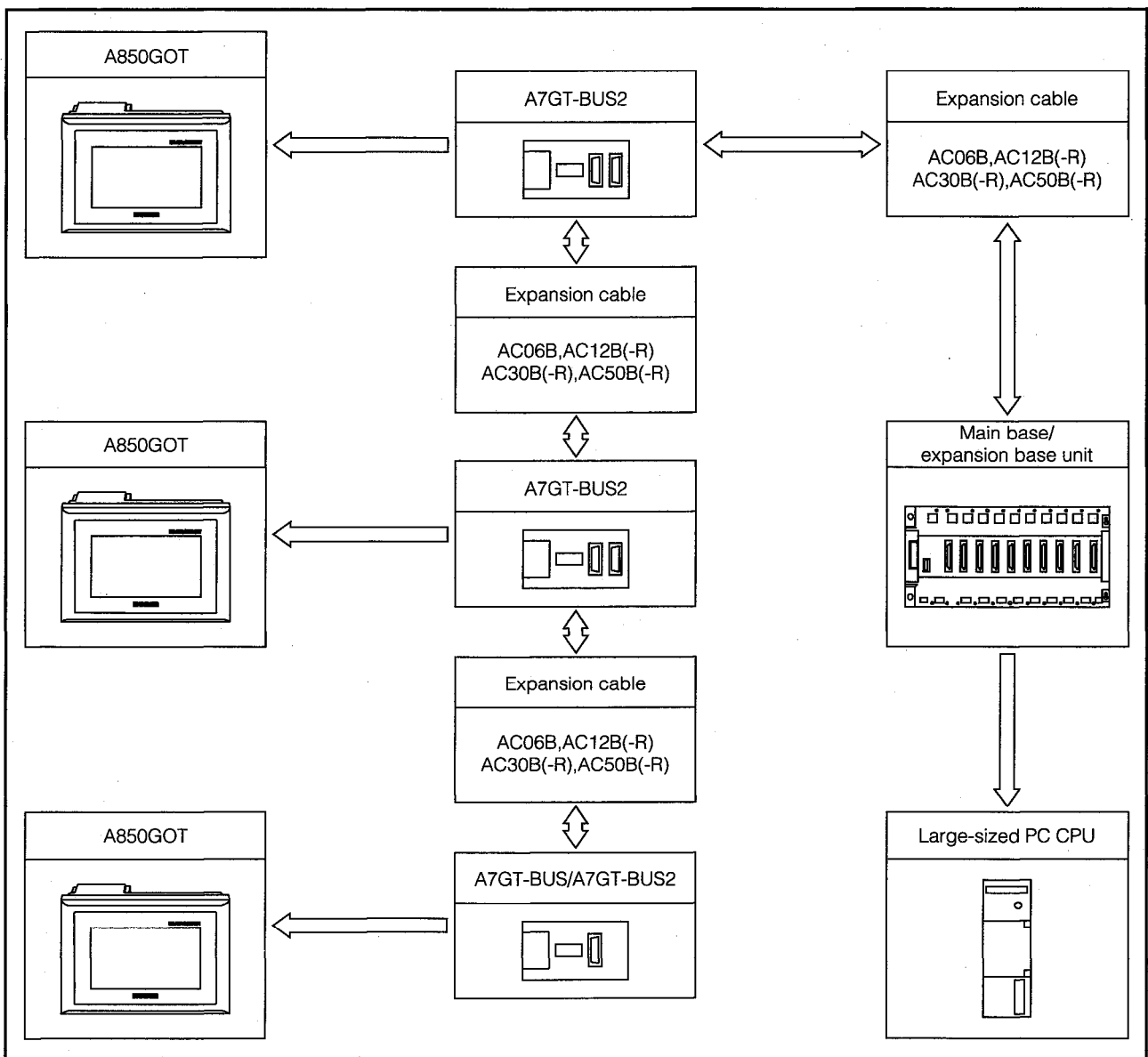## 3.5   System Configuration When 3 GOTs are Connected

3.5.1   Useful Information When 3 GOTs are Connected

When 3 GOTs are connected, the following precautions should be observed:

The first GOT must always be positioned within the maximum expansion distance. Depending on the PC CPU being used, there may be times when it is not possible to connect three GOTs. (See Section 3.1.3.)

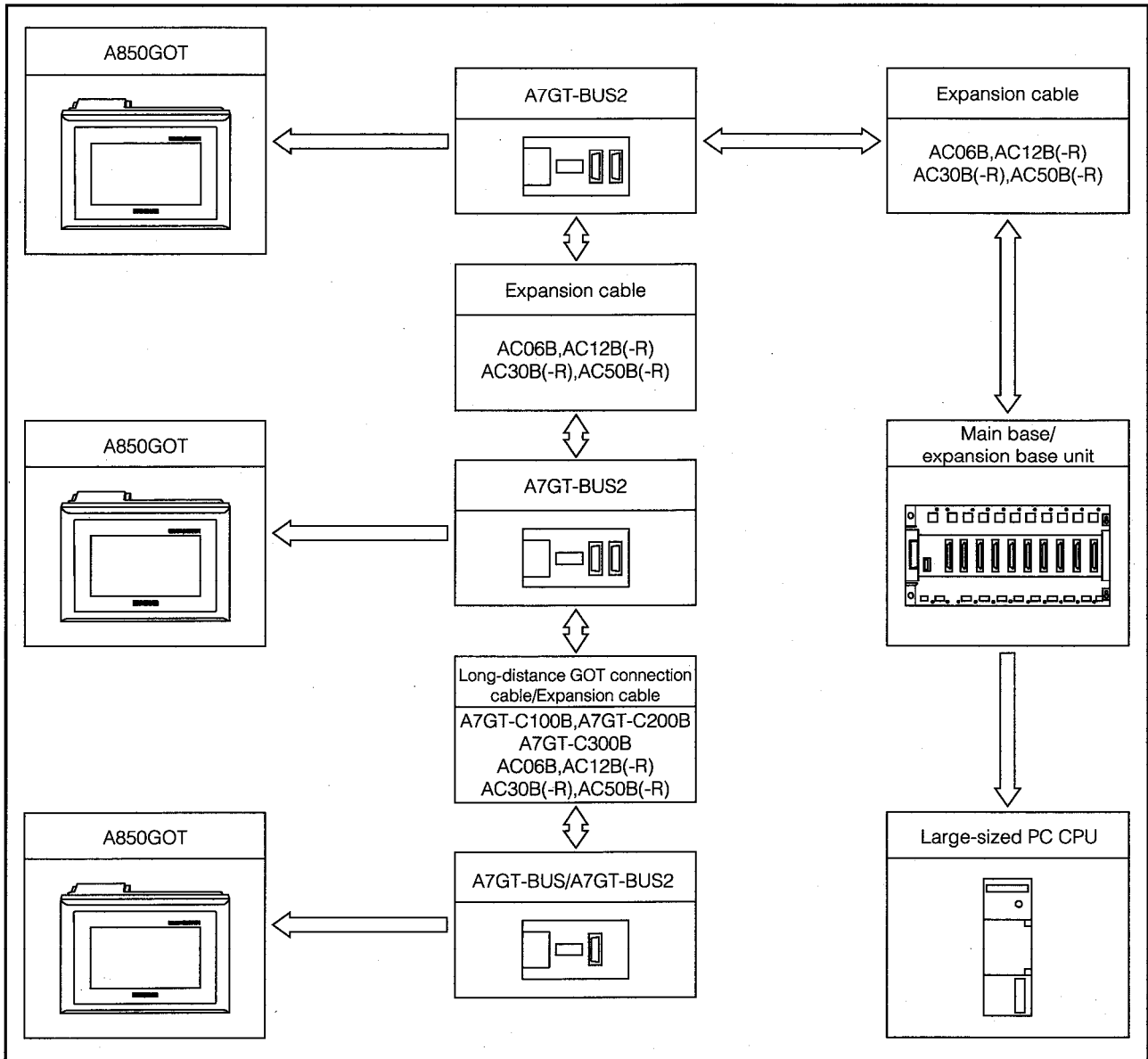### 3.5.2   When the GOTs are Connected to a Large-sized PC CPU

1   **When all three GOTs are positioned within 6.6 m (22 feet)**

Precautions Concerning the System Configuration

(1) When the three GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

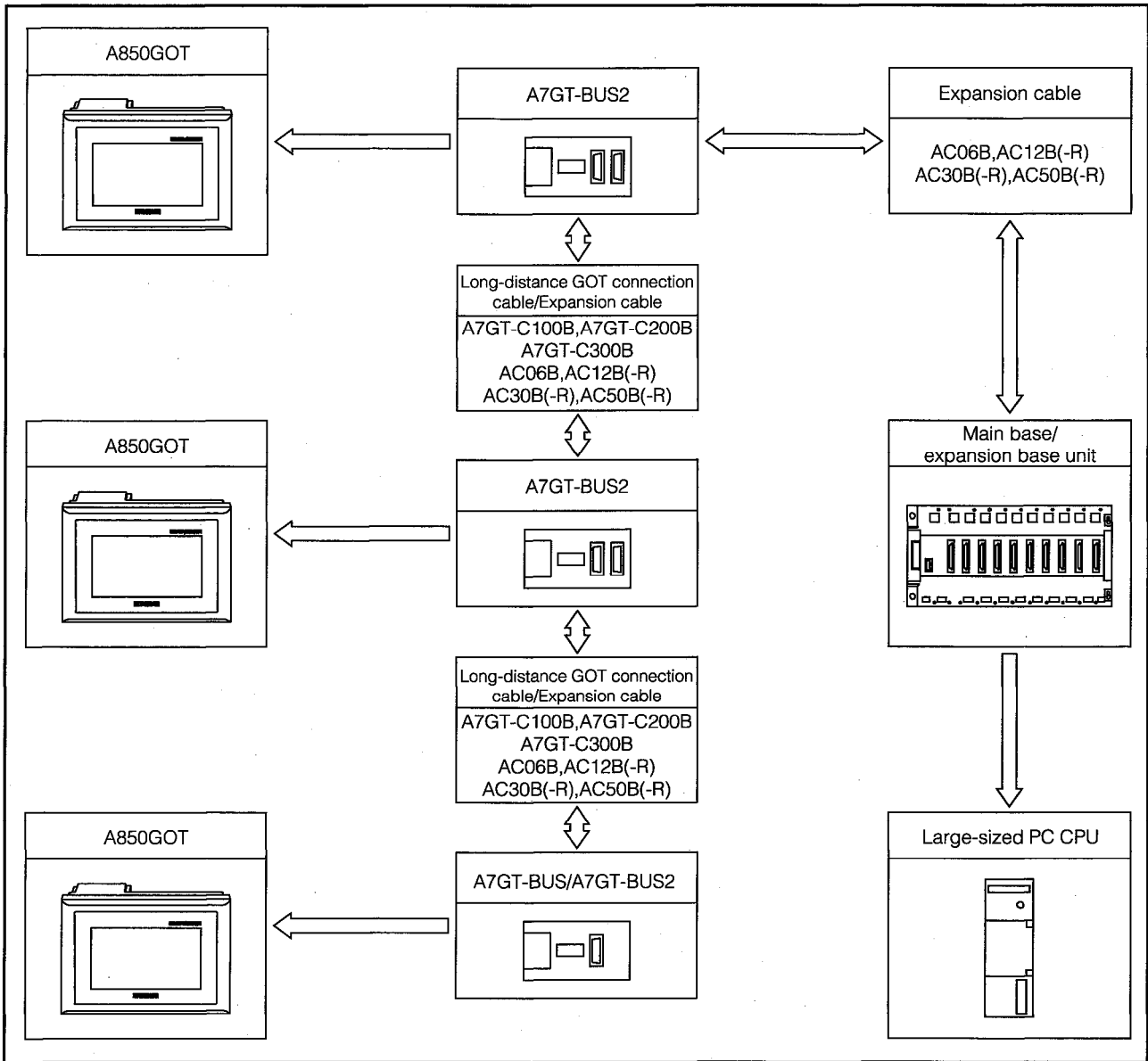(2) The total length of all of the expansion cables should not exceed 6.6 m (22 feet).

2 | When two GOTs are positioned within 6.6 m (22 feet) and the other exceeds 6.6 m (22 feet)

A850GOT		A7GT-BUS2		Expansion cable

A850GOT

A7GT-BUS2

Expansion cable

AC06B,AC12B(-R)
AC30B(-R),AC50B(-R)

Expansion cable

AC06B,AC12B(-R)
AC30B(-R),AC50B(-R)

A850GOT

A7GT-BUS2

Main base/
expansion base unit

Long-distance GOT connection
cable/Expansion cable

A7GT-C100B,A7GT-C200B
A7GT-C300B
AC06B,AC12B(-R)
AC30B(-R),AC50B(-R)

A850GOT
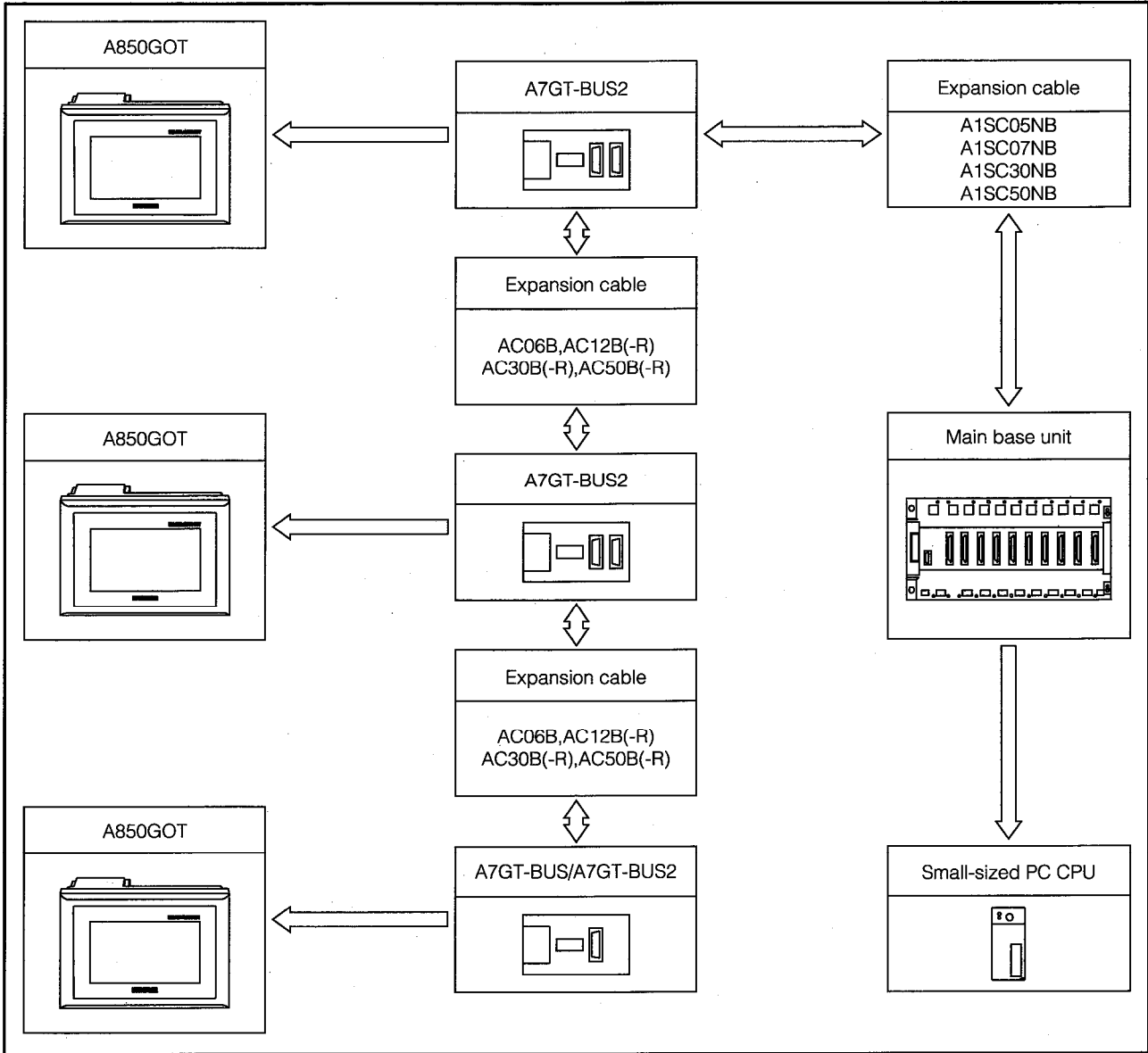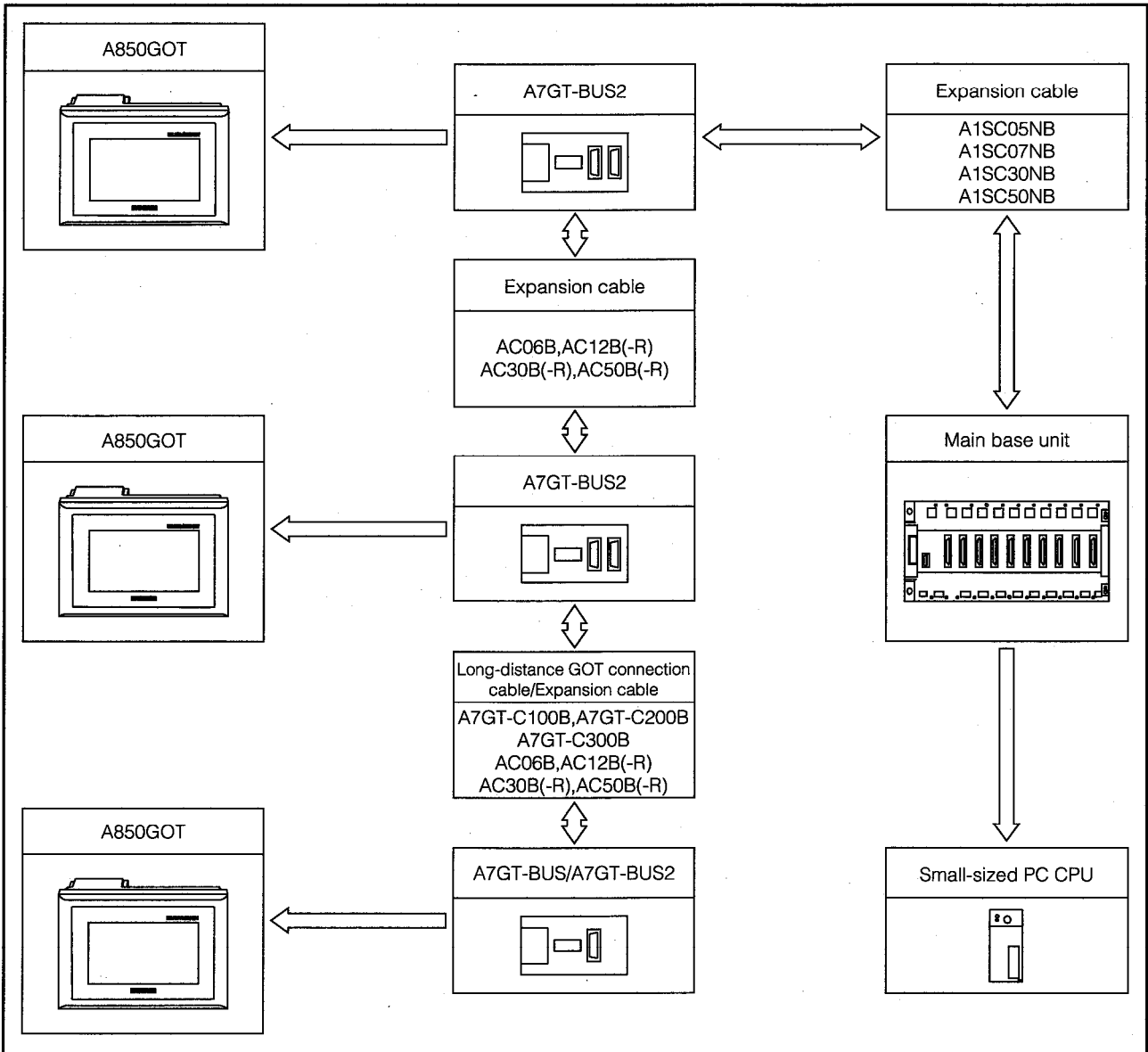
A7GT-BUS/A7GT-BUS2

Large-sized PC CPU

Precautions Concerning the System Configuration

(1) When the three GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

(2) The total length of all of the expansion cables and long-distance GOT connection cables should not exceed 36.6 m (120 feet).

3 - 21

3 | When one GOT is positioned within 6.6 m (22 feet) and the other two exceed 6.6 m (22 feet)

A850GOT	A7GT-BUS2	Expansion cable
		AC06B,AC12B(-R) AC30B(-R),AC50B(-R)

Long-distance GOT connection cable/Expansion cable
A7GT-C100B,A7GT-C200B
A7GT-C300B
AC06B,AC12B(-R)
AC30B(-R),AC50B(-R)

A850GOT	A7GT-BUS2	Main base/ expansion base unit

Long-distance GOT connection cable/Expansion cable
A7GT-C100B,A7GT-C200B
A7GT-C300B
AC06B,AC12B(-R)
AC30B(-R),AC50B(-R)

A850GOT	A7GT-BUS/A7GT-BUS2	Large-sized PC CPU

Precautions Concerning the System Configuration

(1) When the three GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

(2) The total length of all of the expansion cables and long-distance GOT connection cables should not exceed 36.6 m (120 feet).

3.5.3   When the GOTs are Connected to a Small-sized PC CPU (A2USCPU)

| 1 | When all three GOTs are positioned within 6 m (20 feet)

Precautions Concerning the System Configuration

(1) When the three GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

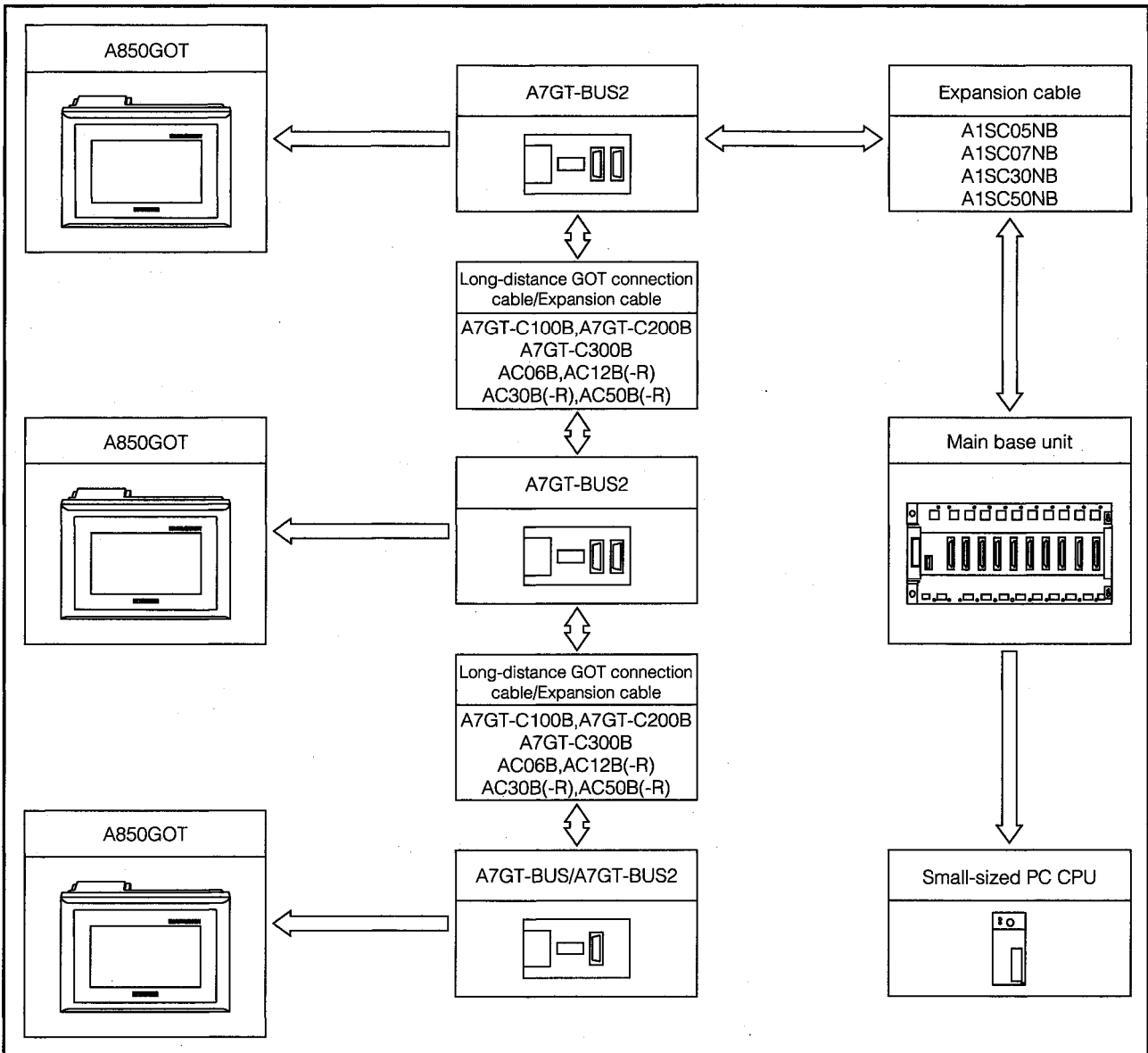(2) The total length of all of the expansion cables should not exceed 6 m (20 feet).

2 When two GOTs are positioned within 6 m (20 feet) and the third exceeds 6 m (20 feet)

| A850GOT | | A7GT-BUS2 | | Expansion cable |
| | | | | A1SC05NB A1SC07NB A1SC30NB A1SC50NB |

Expansion cable
AC06B,AC12B(-R)
AC30B(-R),AC50B(-R)

A850GOT — A7GT-BUS2

Main base unit

Long-distance GOT connection cable/Expansion cable
A7GT-C100B,A7GT-C200B
A7GT-C300B
AC06B,AC12B(-R)
AC30B(-R),AC50B(-R)

A850GOT — A7GT-BUS/A7GT-BUS2

Small-sized PC CPU

Precautions Concerning the System Configuration

(1) When the three GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

(2) The total length of all of the expansion cables and long-distance GOT connection cables should not exceed 36 m (118 feet).

3 When one GOT is positioned within 6 m (20 feet) and the other two are beyond 6 (20 feet)

┌─ **Precautions Concerning the System Configuration** ─────────────┐

(1) When the three GOTs are connected to the A7GT-BUS, Version C or a subsequent version should be used.

(2) The total length of all of the expansion cables and long-distance GOT connection cables should not exceed 36 m (118 feet).

3.6 Required Equipment Based on Number of GOTs Connected

The table below shows the equipment required depending on how many GOTs are connected to the system.

| 1 | When the GOTs are connected to a large-sized PC CPU

No. of GOTs connected			Required equipment						Reference page in this manual
No. of GOTs	No. of GOTs within 6.6 m (22 feet)	No. of GOTs beyond 6.6 m (22 feet)	A7GT-BUS[*1]	A7GT-BUS2	AC06B AC12B(-R) AC30B(-R) AC50B(-R)	A7GT-C100B A7GT-C200B A7GT-C300B	A7GT-C100EXS A7GT-C200EXS A7GT-C300EXS	A7GT-CNB	
1 GOT	1	0	Any 1		1	—	—	—	Section 3.3.1 (1)
	0	1	Any 1		1 [*2]	—	1	1	Section 3.3.2 (1)
2 GOTs	2	0	1	1	2	—	—	—	Section 3.4.1 (1)
	1	1	1	1	Any 2		—	—	Section 3.4.1 (2)
	0	2	1	1	Any 2 [*3]		1	1	Section 3.4.1 (3)
3 GOTs	3	0	1	2	3	—	—	—	Section 3.5.2 (1)
	2	1	1	2	Any 3		—	—	Section 3.5.2 (2)
	1	2	1	2	Any 3		—	—	Section 3.5.2 (3)
	0	3	The first GOT must always be connected within 6.6 meters, so these cannot be connected.						—

*1. When using the A7GT-BUS, always use Version C or a subsequent version.

The A7GT-BUS2 may be used instead of the A7GT-BUS.

*2. Can be used to connect the main base/expansion base to the A7GT-CNB.

*3. Used to connect the main base/expansion base to the A7GT-CNB; one AC☐☐B/AC☐☐B-R is required.

2 **When the GOTs are connected to a small-sized PC CPU**

No. of GOTs connected			Required equipment						Reference page in this manual
No. of GOTs	No. of GOTs within 6.6 m (22 feet)	No. of GOTs beyond 6.6 m (22 feet)	A7GT-BUS*1	A7GT-BUS2	A1SCO5NB A1SCO7NB A1SC30NB A1SC50NB	A7GT-C100EXS A7GT-C200EXS A7GT-C300EXS	AC06B AC12B(-R) AC30B(-R) AC50B(-R)	A7GT-C100B A7GT-C200B A7GT-C300B	
1 GOT	1	0	Any 1		1	—	—	—	Section 3.3.1 (2)
	0	1	Any 1		—	1	—	—	Section 3.3.2 (2)
2 GOTs	2	0	1	1	1	—	1	—	Section 3.4.2 (1)
	1	1	1	1	1	—	Any 1		Section 3.4.2 (2)
	0	2	1	1	—	1	Any 1		Section 3.4.2 (3)
3 GOTs	3	0	1	2	1	—	2	—	Section 3.5.3 (1)
	2	1	1	2	1	—	Any 2		Section 3.5.3 (2)
	1	2	1	2	1	—	Any 2		Section 3.5.3 (3)
	0	3	The first GOT must always be connected within 6 m (20 feet), so these cannot be connected.						————

3 **When the GOTs are connected to the A0J2HCPU**

When the PC CPU used for connections is the A0J2HCPU, the A0J2-PW power supply unit is required.

A0J2C□□B is used if no expansion base is connected.

If an expansion base is connected, AC□□B (-R) is used.

No. of GOTs connected			Required equipment						Reference page in this manual
No. of GOTs	No. of GOTs within 6.6 m (22 feet)	No. of GOTs beyond 6.6 m (22 feet)	A7GT-BUS*1	A7GT-BUS2	A0J2C04B A0J2C10B	A7GT-C100EXS A7GT-C200EXS A7GT-C300EXS	AC□□B(-R) A7GT-C100B A7GT-C200B A7GT-C300B	A7GT-CNB	
1 GOT	1	0	Any 1		1	—	—	—	Section 3.3.1 (3)
	0	1	Any 1		—	1	—	—	Section 3.3.2 (3)
2 GOTs	2	0	1	1	1	—	1*2	—	Section 3.4.3
	1	1	1	1	1	—	1	—	
	0	2	1	1	—	1	1	1	
3 GOTs	It is not possible to connect 3 GOTs.								————

*1. When using the A7GT-BUS, always use Version C or a subsequent version.

The A7GT-BUS2 may be used instead of the A7GT-BUS.

*2. AC□□B (-R) should be used.

MEMO

4. System Configuration with Connections Other Than Bus Connections

4.1 System Configuration When Using a Direct CPU Connection

This shows the system configuration used when the GOT is connected to the PC CPU using an RS-422 cable.

When using a direct CPU connection, no communications unit is required.
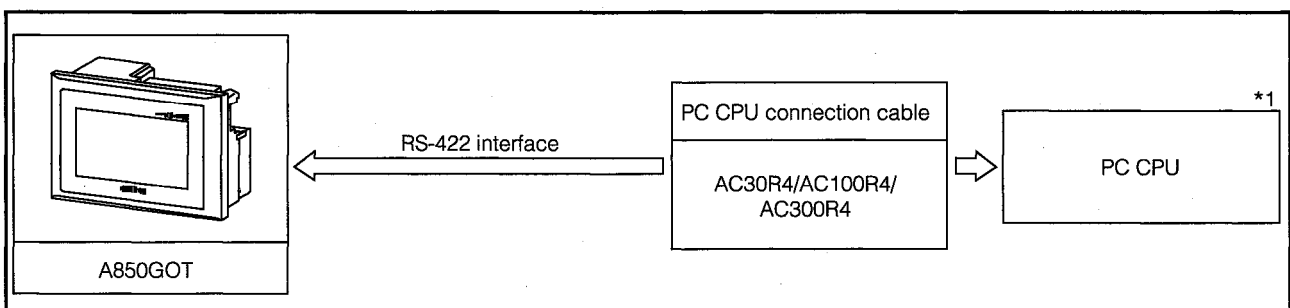
*1. The FX-2PIF dual-port interface unit cannot be used with this configuration.

4.2   System Configuration When Using a Calculator Link Connection

4.2.1   System Configuration

When the GOT is connected to a calculator link unit and a serial communications unit using a calculator link unit connection cable, the following system configuration is used.
When using a calculator link connection, no communications unit is required.

- When connecting the calculator link unit, a peripheral unit designed for GPP functions can be connected to the RS-422 connector of the PC CPU and debugging of sequence programs carried out while monitoring the GOT.
- When connecting the calculator link unit, the following are not possible: changes to the V or Z data in CPU device tests in the system monitor functions; monitoring of or changes to the set value during T/C monitoring, and monitoring of the I/O unit.
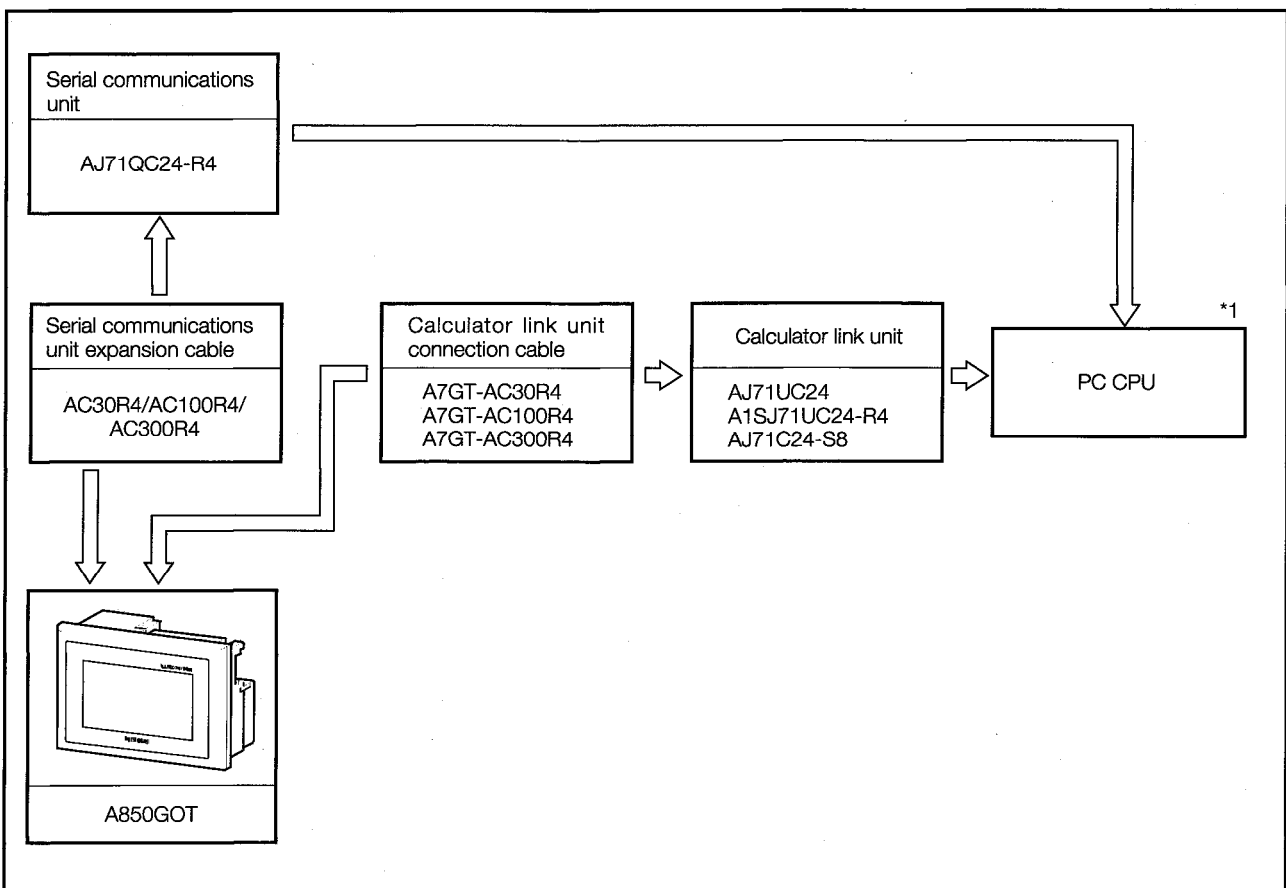
*1.   For information on the system configuration on the calculator link unit side, please refer to the user's manual for the calculator link unit being used.

4.2.2   Precautions Regarding the System Configuration

(1) The only calculator link units or serial communication units which can be connected and monitored are those listed below.
   - AJ71UC24
   - A1SJ71UC24-R4
   - AJ71C24-S8 (if the CPU to which the connection is being made is A□U, the device range which can be monitored is the A□A range)
   - AJ71QC24-R4

(2) The GOT can only be connected to one calculator link unit/serial communications unit, in a 1-to-1 configuration.
   The GOT cannot be connected to a calculator link unit/serial communications unit in an n-to-1 configuration.

- Example of connecting a GOT and calculator link unit
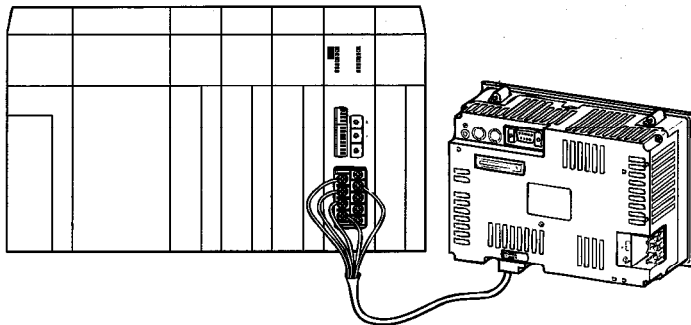
(A7GT-AC30R4/AC100R4/AC300R4)

- Example of connecting a GOT and serial communications unit
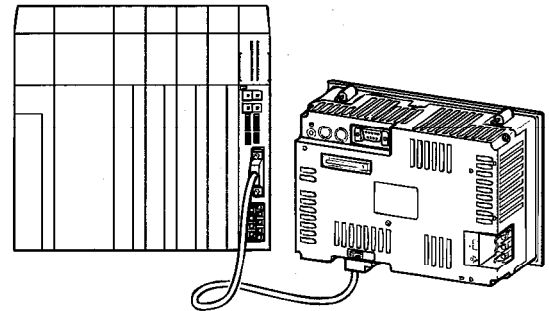
(AC30R4/AC100R4/AC300R4)

(3) The table below shows the connectors, crimping terminals, and cables used when connecting the GOT and calculator link unit with the following cables: A7GT-AC30R4, A7GT-AC100R4, A7GT-AC300R4.

(a) Connection diagram

Calculator link unit side	Cable connection and signal direction	G controller unit side		Notes
Signal		Pin no.	Signal name	
SDA		8	RDA	Receive Data
SDB		14	RDB	Receive Data
RDA		10	SDA	Send Data
RDB		16	SDB	Send Data
		11	RSA	Request to Send
		17	RSB	Request to Send
		9	CSA	Send Enabled
		15	CSB	Send Enabled
		5		
SG		12	SB	Signal ground
		6	SG (shield)	

(b)   Connectors, crimping terminals, cables
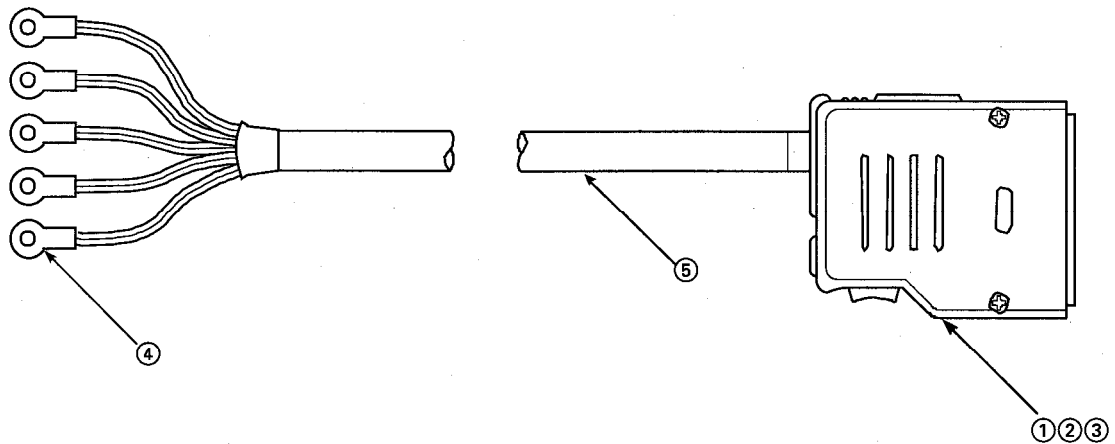
No.	Name	Model	Maker
①	Connector cover	P1620A-CA (20)	Hirose
②	Housing	SC-1620	Hirose
③	Contact	SC-1600-11	Hirose
④	Round crimping terminal	V1.25-M4	Nippon Crimping Terminal (recommended)
⑤	20-strand shielded cable	RF V V -SB-24 × 20	Toyokuni Power Cables (recommended)

(c)   If you are creating your own cable to connect the G controller unit and the calculator link unit, please observe the following precautions.

① The cable length should be within 30 m (98 feet).

② If ④ and ⑤ above are used to make the cable, the power cable can sometimes be disconnected if the connection is made with only one power cable. Two power cables should be used to make the connection.

(4)   When connecting a G controller unit and a calculator link unit, it is not necessary to connect a final resistor on the calculator link unit side.

(5)   The GOT cannot be monitored by connecting it to an AJ71UC24 or AJ71QC24-R4 which has been installed in an MNET/10 remote I/O station.

4.2.3   Hardware Settings for the Calculator Link Unit

If monitoring is being done with the GOT connected to a calculator link unit, the hardware settings for the calculator link unit (mode setting switch and transmission specification switches) should be set as shown below.

Transmission specifications consist of the following: ① transmission speed: 19,200 bps, ② data bits: 8 bits, ③ parity bit: yes (odd), ④ stop bit: 1 bit, ⑤ checksum: yes.

1   **When connected to the AJ71UC24**

Mode setting switch

Transmission specifications setting switches

→ ON

SW11	
12	
13	
14	
15	
16	
17	
18	
SW21	
22	
23	
24	
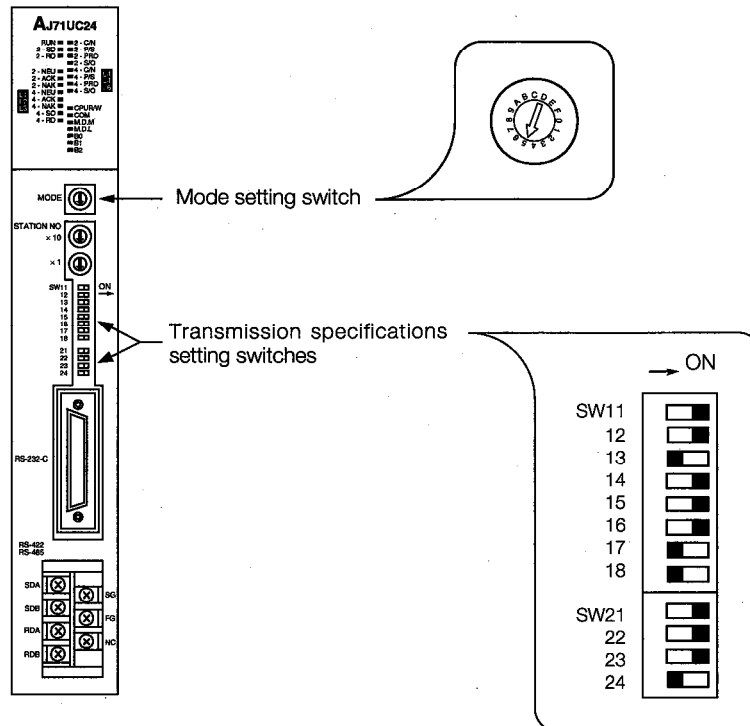
2   **When connected to the A1SJ71C24-R4**

Transmission specifications setting switches

Mode setting switch

SW	ON ←
01	
02	
03	
04	
05	
06	
07	
08	
09	
10	
11	
12	
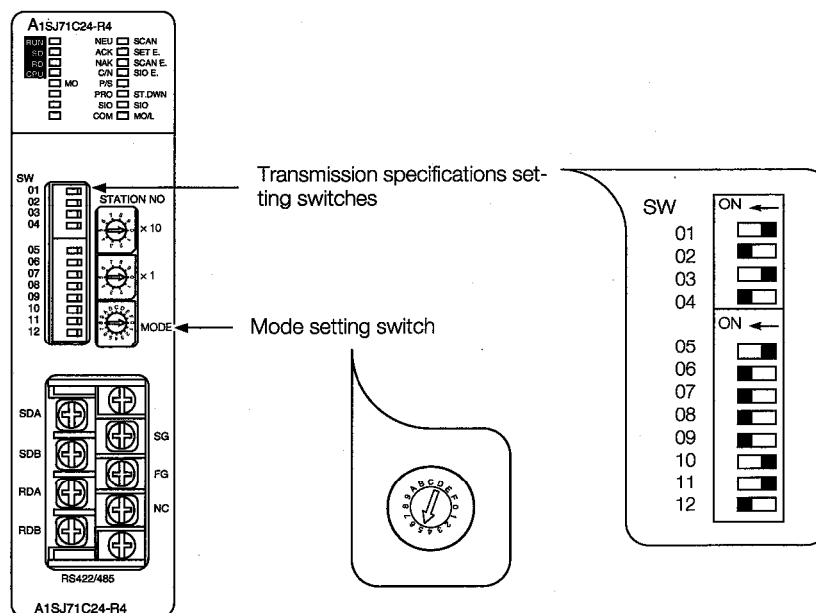
3   When connected to the AJ71C24-S8

Transmission speci-
fications setting
switches

Mode setting
switch
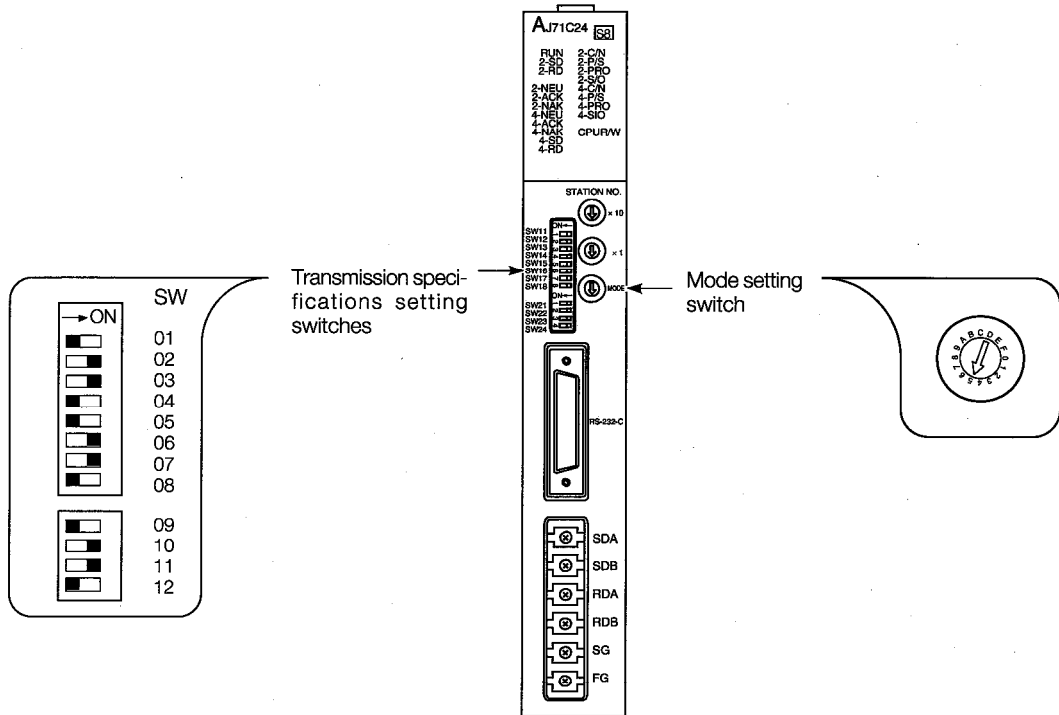
4.2.4   Hardware Settings for the Serial Communications Unit

When the GOT is connected to a serial communications unit for monitoring, the hardware settings
for the serial communications unit (mode setting switch and transmission switches) should be set
as shown below.

Transmission specifications consist of the following: ① data bits: 8 bits, ② parity bit: yes (odd), ③
stop bit: 1 bit, ④ checksum: yes, ⑤ transmission speed: 19,200 bps.

Mode setting switch (for CH1)

Transmission specifications
setting switches (for CH1)
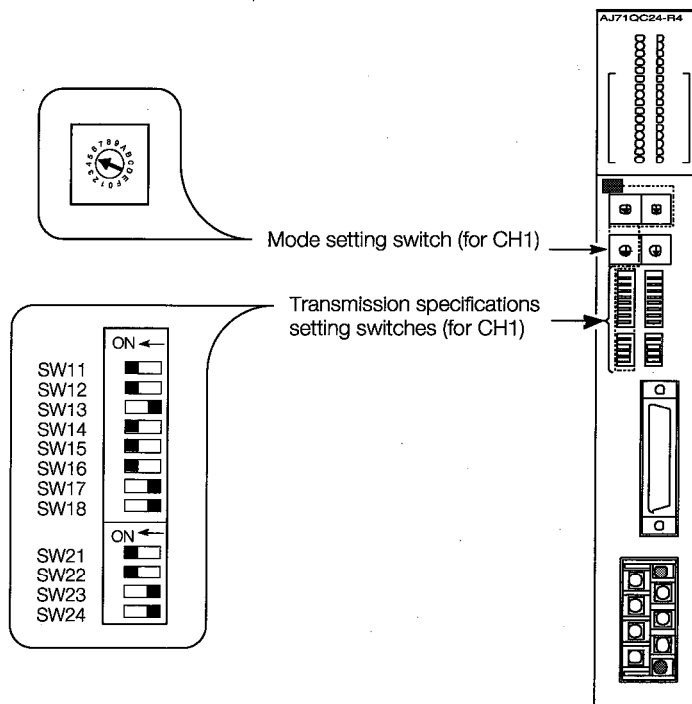
4.3 System Configuration When Using a MELSECNET Connection (Connected to a Data Link System)

When the GOT is incorporated into a data link system, the system configuration is as shown below.

The number of GOTs that can be connected is limited only by the number of stations that can be connected to the various data link systems.

| A2ACPUP21/R21 (S1) |
| A3ACPUP21/R21 |

| Data link unit | Data link cable | Data link unit | PC CPU |
| A7GT-J71AP23/ A7GT-J71AR23/ A7GT-J71AT23B | | • AJ71AP21/AR21 • AJ71AT21B • A1SJ71AP21/AR21 • A1SJAT21B | |

| A850GOT |
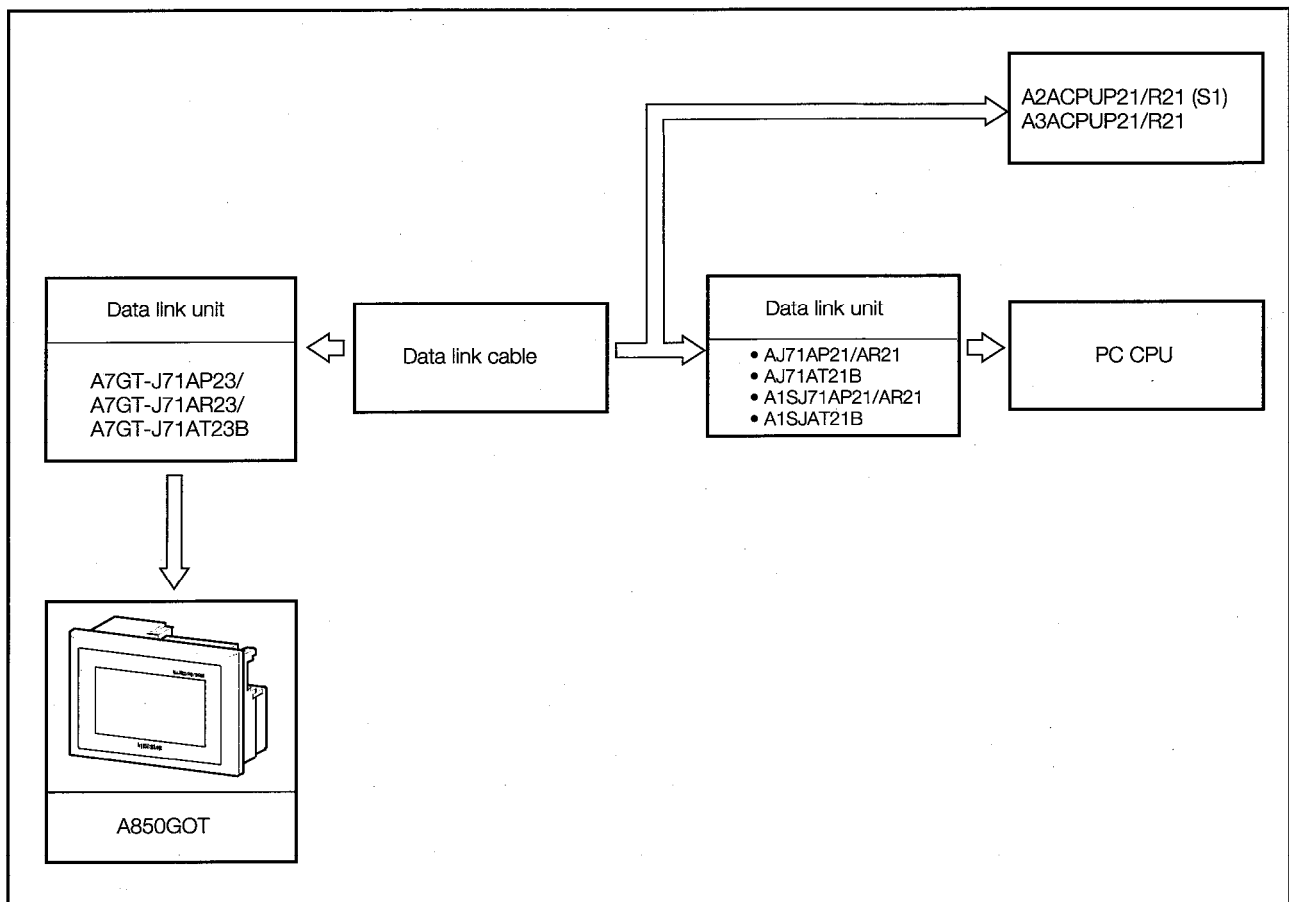
* For information on installing the data link unit and entering switch settings, please refer to Section 6.4.

4.4 System Configuration When Using a MELSECNET Connection (Connected to a Network System)

When the GOT is incorporated into a network system, the system configuration is as shown below. The number of GOTs that can be connected is limited only by the number of stations that can be connected to the various network systems.
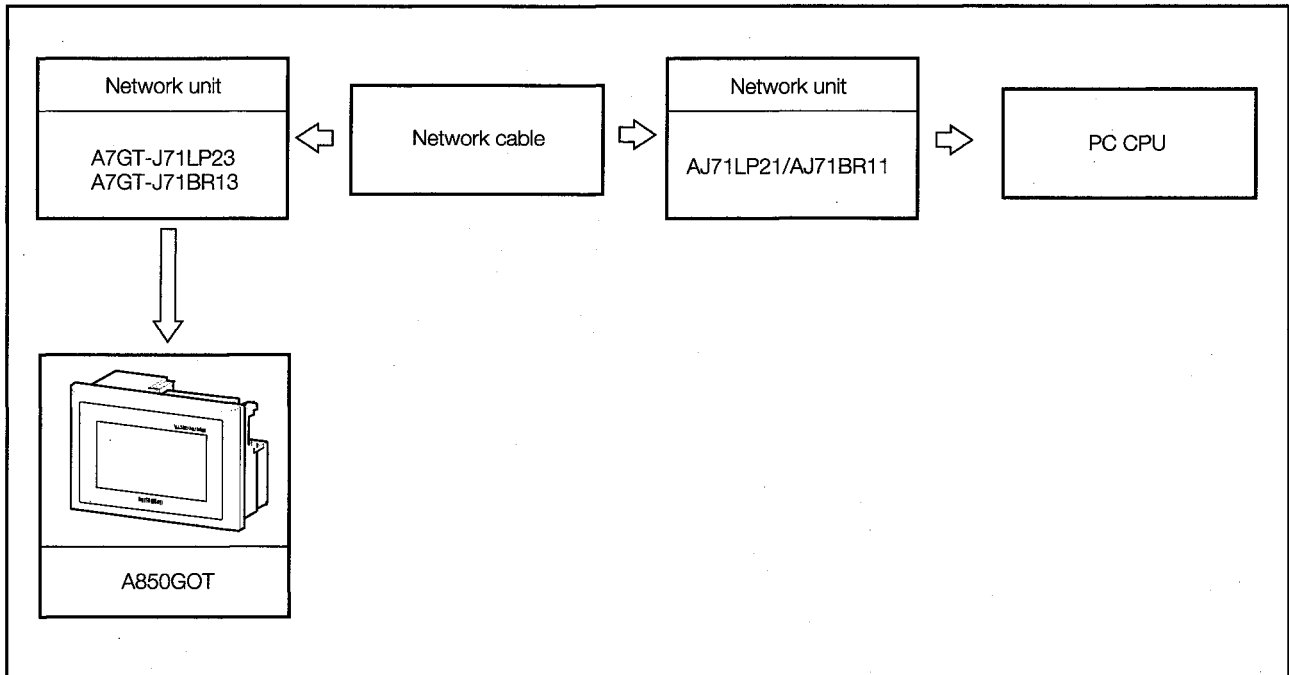
* For information on installing the network unit and entering switch settings, please refer to Section 6.5.

If the PC CPU is a QnACPU, the GOT operates in the AnACPU device range.

5. Specifications

5.1 General Specifications

The specifications that are common to all of the various units are listed below.

Item	Specifications			
Ambient operating temperature	Display unit		Other than display unit	
	0 ~ 40°C		0 ~ 55°C	
Ambient storage temperature	−20 ~ 60°C			
Ambient operating humidity	10 ~ 90% RH, with no condensation			
Ambient storage humidity	10 ~ 90% RH, with no condensation			
Vibration resistance	Conforming to JIS B 3501, IEC 1131-2	Under intermittent vibration			10 times each in X, Y, Z directions (for 80 min.)
		Frequency	Acceleration	Amplitude	No. of sweeps
		10 ~ 57HZ	—	0.075 mm (0.003 inch)	
		57 ~ 150Hz	9.8 m/S²{1G}	—	
		Under continuous vibration			
		Frequency	Acceleration	Amplitude	
		10 ~ 57Hz	—	0.035 mm (0.001 inch)	
		57 ~ 150Hz	4.9 m/S² {0.56}	—	
Impact resistance	Conforming to JIS B 3501, IEC 1131-2 (147 m/s² {15 G},3 times in each of 3 directions)			
Noise withstand resistance	Noise voltage: 1500 Vp-p; noise width: 1 μs Noise frequency: based on noise simulation of 25 ~ 60 Hz			
Voltage withstand resistance	Batch resistance between external DC terminals --- 500 VAC for 1 minute between grounding terminals			
Insulation resistance	Batch resistance between external DC terminals --- 500 VDC at 10 MΩ min. using insulation resistance meter			
Environment	No corrosive gases			
Altitude	2000 m (6562 feet) max.			
Installation location	Control panel			
Over-voltage category *1	11 max.			
Pollution level *2	2 max.			

*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 11 applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300 V is 2,500V.

*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 indicates that only non-conductive pollution is produced; however, in this environment, there may be times when temporary conductivity is produced because of freezing.

5.2 Performance Specifications

Item		Specifications	
		A850GOT-LWD, A850GOT-LBD	A850GOT-SWD, A850GOT-SBD
Display unit	Type	Monochrome LCD	STN color LCD
	Resolution	Horizontal: 320 dots, vertical: 240 dots	
	Display size	86 mm (3.4 inch) (vertical) x 115 mm (4.5 inch) (horizontal)	
	Display color	Single color (white, black)	8 colors
Backlights		Chilled cathode ray tube backlight; Backlights can be replaced	
Touch panel	No. of touch keys	300 (15 rows x 20 columns)	
	Key size	16 dots x 16 dots min. (per key)	
	Repeat function	None	
Memory *1	Type	Internal memory (flash ROM)	
	Application	For storing project data/for storing system monitor OS	
	Capacity	768 KB (user area)	
RS-232C interface		For connecting personal computer; 1 channel	
Communications unit interface		For connecting communications unit; 1 channel	
RS-422 interface		For direct CPU or calculator link connection; 1 channel	
Interface for connecting optional unit		For connecting optional unit (for future expansion); 1 channel	
Buzzer		Single sound (length of sound can be adjusted)	
Lifetime *2	Display unit	50,000 hours (when ambient temperature during use is 25° C)	
	Backlights	10,000 hours (50% of display brightness)	
	Touch keys	1 million times min. (at operational force of 100 g (0.2 lb) or less)	
	Internal memory	No. of writings: 100,000	
Power supply voltage		DC24V(+30%, –35%)	
Allowable falter time		10ms	
Power consumption	When using bus connection, CPU direct connection, calculator link connection	0.5A	
	When using MELSECNET connection	0.7A	
I/O allocation		32 special points (for bus connection only)	
Environmental protection construction		IP65 or equivalent (front panel section)	
External dimensions	With communications unit	192mm (7.6 inch) (W) x 135mm (5.3 inch) (H) x 96mm (3.8 inch) (D)	
	Without communications unit	192mm (7.6 inch) (W) x 135mm (5.3 inch) (H) x 62mm (2.4 inch) (D)	
Panel cutout dimensions		184mm (7.2 inch) (W) x 124mm (4.9 inch) (H)	
Weight		0.805kg (1.8 lb)	0.803kg (1.8 lb)

*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 dealer or branch office.

NOTE

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.

5.3 Applicable CPU Models

The GOT can be used in the following systems.

1 **CPU unit to which the GOT can be connected**

PC CPUs to which the GOT can be connected are listed below. Items in parentheses indicate the software version of the CPU. To confirm the version, please refer to the user's manual for the pertinent CPU.

CPU type	CPU unit name
Building-block CPU	A1SJCPU, A1SCPU, A2SCPU (C and subsequent), A2USCPU, A2USCPU-S1 A1NCPU (H and subsequent), A1NCPU P21/R21 (L and subsequent) A2NCPU (H and subsequent), A2NCPU P21/R21 (L and subsequent) A2NCPU-S1 (H and subsequent), A2NCPU P21/R21-S1 (L and subsequent) A3NCPU(H and subsequent), A3NCPU P21/R21 (L and subsequent) A2ACPU, A2ACPU P21/R21 A2ACPU-S1, A2ACPU P21/R21-S1 A2UCPU, A2UCPU-S1 Q2ACPU, Q2ACPU-S1 A3ACPU, A3ACPU P21/R21 A3UCPU, A4UCPU Q3ACPU, Q4ACPU
Compact CPU	A0J2HCPU (E and subsequent), A0J2HCPU P21/R21 (E and subsequent) A2CCPU (H and subsequent), A2CCPU P21/R21 (H and subsequent), A2CJCPU
Motion controller	A171SCPU A373CPU (SWOSRX-SV12H (I, J, K) only) A273UCPU, A373UCPU, A273UH CPU

(a) The following CPUs cannot be used: A0J2CPU, A1CPU (P21/R21), A2CPU (P21/R21), A3CPU (P21/R21), A52GCPU, A3VTS, A3H (P21/R21), A3M (P21/R21)

(b) With an A81CPU installed in an expansion base, monitoring and testing should be done as if the A81CPU were a special function unit.
(Monitoring cannot be carried out with the GOT connected to the A81CPU as a stand-alone system.)

(c) When using a CPU direct connection, data cannot be written when using a CPU with a version number earlier than that listed in parentheses.

(d) With the A2CJCPU and A2CCPU, bus connections and calculator link connections cannot be used.

(e) With the A2SCPU and A373CPU, calculator link connections cannot be used.

5.4 Monitor Functions That Can be Used with the Various Types of Connections

The monitor functions that can be used when the GOT is connected to a PC CPU are as shown below.

		Monitor functions on user screen		System monitor functions	
		ACPU	QnACPU (Note 1)	ACPU	QnACPU (Note 2)
CPU direct connection	Local station	O*1	O	O*1	O
	Other station	O*1	O	O	O
Bus connection	Local station	O*2	O	O	O
	Other station	O	O	O	O
Calculator link connection	Local station	O*2	O	O*3	O
	Other station	O	O	O*3	O
MELSECNET connection	Local station	O	O*4	O	O*4
	Other station	O	O*4	O	O*4

O: Can be used   X: Cannot be used

(Note 1)
- Monitoring or writing may not be possible, depending on the device being monitored. (For more detailed information, please refer to the A8GOTP Operating Manual (Monitor Screen Creation Manual) and the A870GOT/A850GOT Operating Manual (Expanded Functions Manual).)

(Note 2)
- Monitoring or writing may not be possible, depending on the device being monitored. (For more detailed information, please refer to the A8GOTP Operating Manual (Monitor Screen Creation Manual) and the A870GOT/A850GOT Operating Manual (Expanded Functions Manual).)
- Device comments cannot be displayed with a registration monitor, batch monitor, or T/C monitor.

(Restrictions)

*1. Writing of devices may not be possible, depending on the software version of the CPU being monitored. (Please refer to 5. 3.)

*2. This connection method may not be possible, depending on the CPU being monitored. (Please refer to 5.3.)

*3. Monitoring and writing of T/C set values are not possible, nor is writing of V/Z values.

*4. If a MELSECNET/B or MELSECNET (II) connection is being used, and the PC CPU of the master station is the QnACPU, devices other than the B and W assigned by the link parameter cannot be monitored.

   If the QnACPU is being monitored through the MELSECNET/10, devices other than the B and W assigned by the network parameter cannot be monitored.

   (For more detailed information, please see the A8GOTP Operating Manual (Monitor Screen Creation Manual).)

5.5   Table of Component Equipment Units
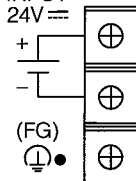
Component	Model	Remarks
GOT main unit	A850GOT-LWD	Monochrome LCD type, ivory white on front of main unit (with 24 VDC power supply)
	A850GOT-LBD	Monochrome LCD type, dark gray on front of main unit (with 24 VDC power supply)
	A850GOT-SWD	STN color LCD type, ivory white on front of main unit (with 24 VDC power supply)
	A850GOT-SBD	STN color LCD type, dark gray on front of main unit (with 24 VDC power supply)
Backlights	A8GT-50LT	Replacement light for A850GOT
Protective sheet	A8GT-50PSC	Transparent protective sheets for A850GOT
	A8GT-50PSN	Anti-reflection protective sheets for A850GOT
Bus connection interface unit	A7GT-BUS	For bus connection (Version A cannot be used)
Multi-drop bus connection interface unit	A7GT-BUS2	For bus connection of several GOTs
Data link unit	A7GT-J71AP23	For connection to MELSECNET (II) optical link; for local station only
	A7GT-J71AR23	For connection to MELSECNET (II) coaxial link; for local station only
	A7GT-J71AT23B	For connection to MELSECNET/B link; for local station only
Network unit	A7GT-J71LP23	For connection to MELSECNET/10 optical loop network; for ordinary station only
	A7GT-J71BR13	For connection to MELSECNET/10 coaxial bus network; for ordinary station only
Long-distance bus connection cable *1	A7GT-C100EXS	For connecting GOT and base unit; cable length: 10 m (33 feet)
	A7GT-C200EXS	For connecting GOT and base unit; cable length: 20 m (66 feet)
	A7GT-C300EXS	For connecting GOT and base unit; cable length: 30 m (99 feet)
Long-distance GOT connection cable *1	A7GT-C100B	For connecting 2 GOTs; cable length: 10 m (33 feet)
	A7GT-C200B	For connecting 2 GOTs; cable length: 20 m (66 feet)
	A7GT-C300B	For connecting 2 GOTs; cable length: 30 m (99 feet)
Bus connector conversion box	A7GT-CNB	For converting from large connector to small connector
Expansion cable	AC06B	For connecting GOT and base unit; cable length: 0.6 m (24 inch)
	AC12B	For connecting GOT and base unit; cable length: 1.2 m (48 inch)
	AC30B	For connecting GOT and base unit; cable length: 3 m (118 inch)
	AC50B	For connecting GOT and base unit; cable length: 5 m (197 inch)
	AC12B-R	For right-angled connection of GOT and base unit; cable length: 1.2 m (48 inch)
	AC30B-R	For right-angled connection of GOT and base unit; cable length: 3 m (118 inch)
	AC50B-R	For right-angled connection of GOT and base unit; cable length: 5 m (197 inch)
	A1SC05NB	For connecting GOT and base unit; cable length: 0.45 m (18 inch)
	A1SC07NB	For connecting GOT and base unit; cable length: 0.7 m (28 inch)
	A1SC30NB	For connecting GOT and base unit; cable length: 3 m (118 inch)
	A1SC50NB	For connecting GOT and base unit; cable length: 5 m (197 inch)
Fiber-optic cable	———	For connecting MELSECNET (II) optical link unit or MELSECNET/10 optical loop network
Coaxial cable	———	For connecting MELSECNET (II) coaxial link unit or MELSECNET/10 coaxial bus network
Twisted-pair cable	———	For connecting MELSECNET/B
RS-422 cable	AC30R4	For connecting GOT and PC CPU; cable length: 3 m (118 inch) For connecting GOT and serial communications unit
	AC100R4	For connecting GOT and PC CPU; cable length: 10 m (33 feet) For connecting GOT and serial communications unit
	AC300R4	For connecting GOT and PC CPU; cable length: 30 m (99 feet) For connecting GOT and serial communications unit
Cable for connecting calculator link unit	A7GT-AC30R4	For connecting GOT and calculator link unit; cable length: 3 m (118 inch)
	A7GT-AC100R4	For connecting GOT and calculator link unit; cable length: 10 m (33 feet)
	A7GT-AC300R4	For connecting GOT and calculator link unit; cable length: 30 m (99 feet)
Applicable software packages	SW1NIW-GOT800PSET	Supports Windows 3.1 and Windows 95
GOT ↔ PC connection cable		See Section 2.2.2

*1. Cannot be used to connect main base ↔ expansion base unit or expansion base <--> expansion base unit.

MEMO

6. Names of Parts and Handling Component Equipment Units

6.1 Names of Parts and Their Settings
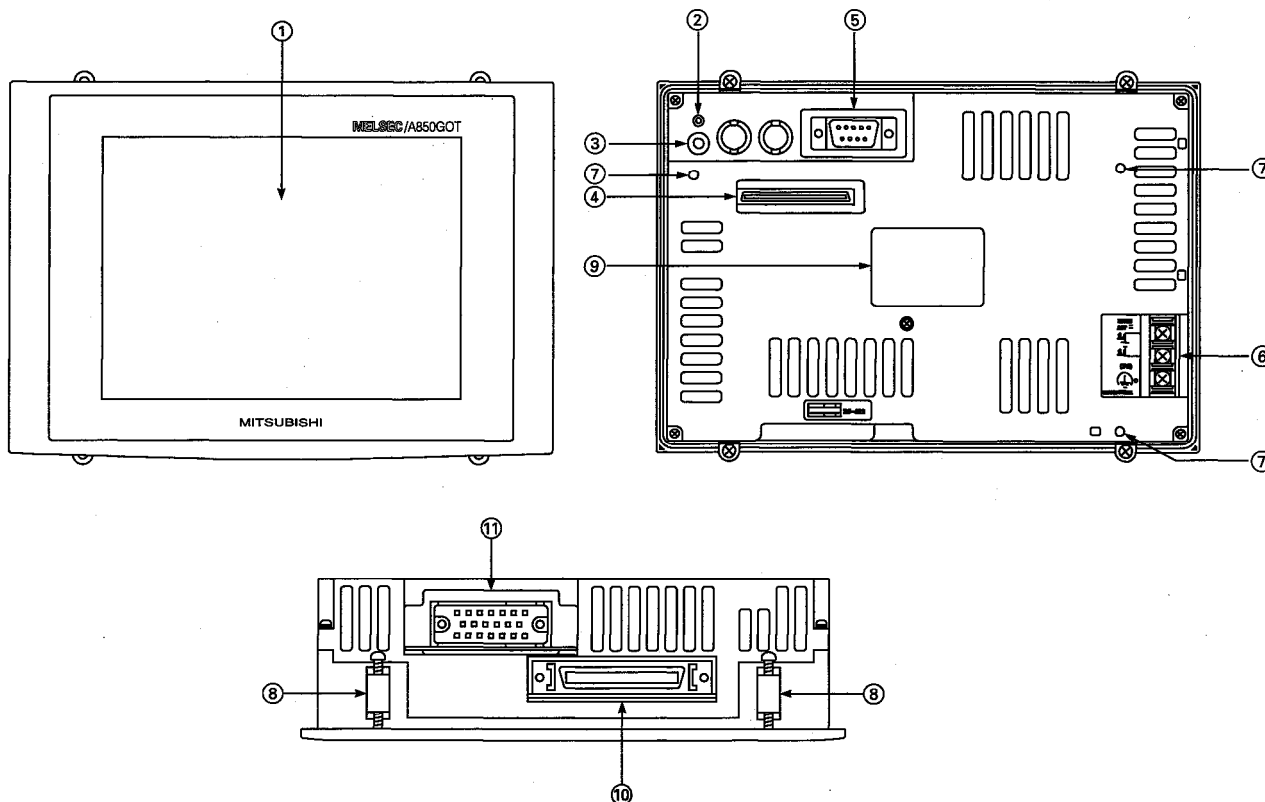
No.	Name	Contents
①	Display unit	Displays monitor screens
②	Power supply LED	Lights when power supply is on
③	Reset switch	Resets the GOT hardware
④	Communications unit interface	Interface used to connect a communications unit
⑤	RS-232C interface	RS-232C interface for connecting a PC
⑥	Terminal base	For input of 24 VDC power supply INPUT 24V ⎓ + ⊕ − ⊕ (FG) ⏚• ⊕
⑦	Communications unit attachment screw hole	Hole for screw used to attach a communications unit to the GOT
⑧	Attachment hook installation section	Attachment hook is installed here
⑨	Ratings plate	———
⑩	Optional unit interface	For future expansion
⑪	RS-422 interface	RS-422 interface for direct CPU connection or for connecting a calculator link unit

6.2   Protective Sheets

The A8GT-50PSC and A8GT-50PSN are protective sheets for the display unit of the GOT.

Protective sheets are used for the following purposes:

① To protect the touch keys from scratches and dirt when using the touch key panel on the display unit

② To prevent reflection from external disturbance light on the display unit

The protective sheet used should be selected in accordance with the purpose for which it is used, from among those listed here.

Purpose	Model	Contents
Protection of display	A8GT-50PSC	Transparent protective sheet
Display unit protection + anti -refletion	A8GT-50PSN	Anti-reflection protective sheet

● Attachment Procedures

① Peel off the old protective sheet from the GOT display unit.
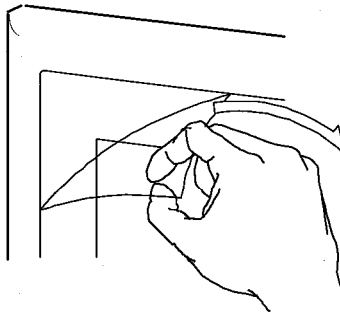
② Peel off the protective backing from the adhesive tape on the new protective sheet, and affix it to the display unit of the GOT.

(Note) When affixing the protective sheet to the display unit, make sure it is flat and tight, with no looseness or gaps at the adhesive sections.
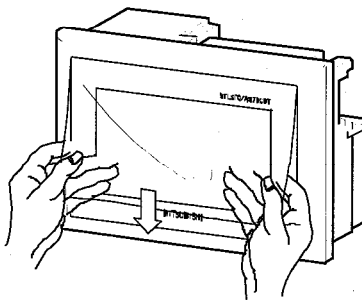
6.3   Installing the Bus Connection Unit

This shows how to install a bus connection unit in the GOT. For more detailed information on installing a bus connection unit and entering the settings, please refer to the A7GT-BUS/A7GT-BUS2 User's Manual.

> ⚠ **CAUTION**   ● Before installing a bus connection unit in the GOT, or removing a unit already installed, always turn off the power supply to the GOT.
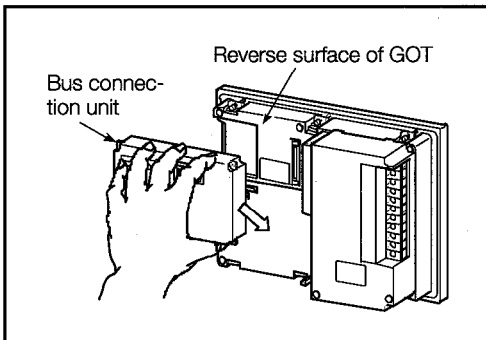
① Install the bus connection unit in the GOT, and tighten the screw to secure it.
To remove the bus connection unit, loosen the screw, and then reverse the installation procedure.
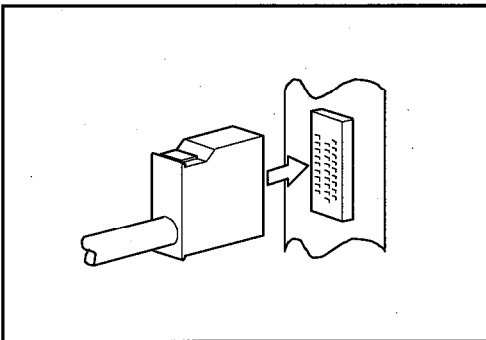
② Connect the bus connection unit and the main base/expansion base unit using the expansion cable.
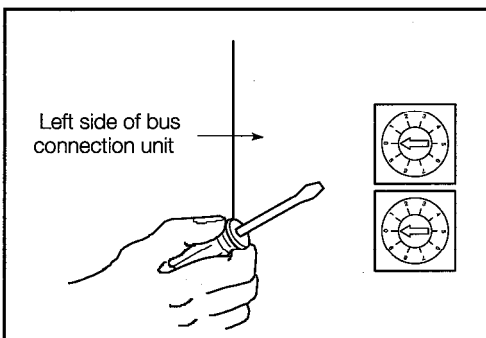
③ Set the expansion stage switch and I/O slot switch for the bus connection unit.
After setting the expansion stage switch and I/O slot switch, turn on the power to the PC CPU and the GOT.
This concludes the settings for the bus connection unit.
For further information on how to set the expansion stage switch and I/O slot switch, please refer to Section 3.2.

6.4   Installing a Data Link Unit

This shows how to install a data link unit in the GOT. For more detailed information on data link unit specifications and settings, please refer to the A7GT-J71AP23/R23 User's Manual, the A7GT-J71AT23B User's Manual, and the MELSECNET and MELSECNET/B Data Link System Reference Manuals.

> ⚠ **CAUTION** ● Before installing a data link unit in the GOT, or removing a unit already installed, always turn off the power supply to the GOT.
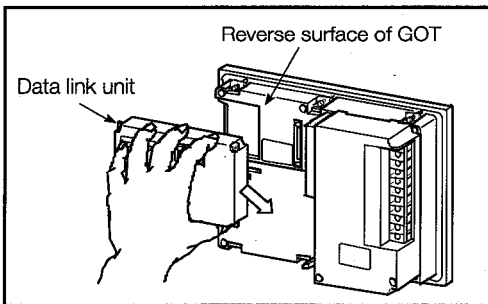
① Install the data link unit in the GOT, and tighten the screw to secure it.
To remove the data link unit, loosen the screw, and then reverse the installation procedure.
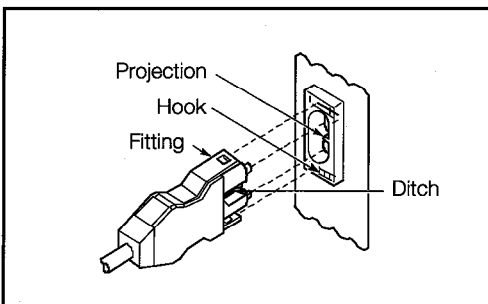
② Connect the link cable to the data link unit. For instructions on connecting a coaxial cable or twisted pair cable, please refer to the MELSECNET and MELSECNET/B Data Link System Reference Manuals.
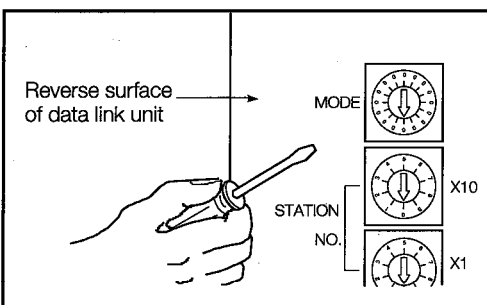
③ Set the mode change switch of the data link unit to the Test Mode.
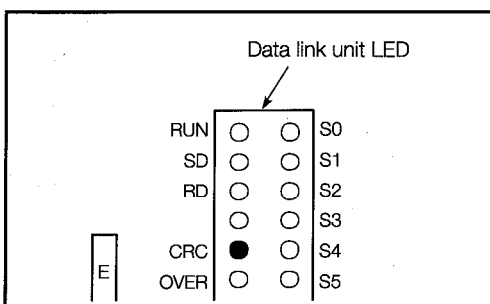
④ Turn on the power supply to the GOT and run a test of the data link.
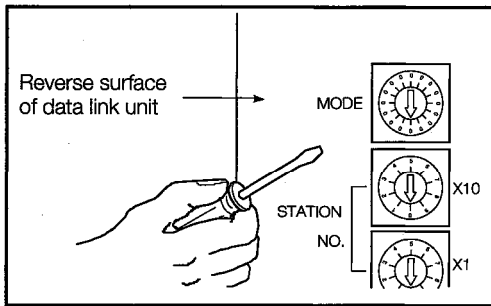
⑤ After the test has been completed, turn off the power supply to the GOT, and set the various switches on the data link unit to match the system configuration.

This completes the procedure for setting the data link unit.

---

1 │ Setting the switches on the data link unit

This section explains how to set the switches used with the data link unit.

(a) Station number setting switch

Since this data link unit acts only as a local station, it should be set as follows:

- MNET (II): Stations 1 ~ 64
- MNET/B: Stations 1 ~ 31

(b) Mode change setting switch

Set this to the on-line mode for a data link.

(c) Baud rate switch (MNET/B only)

Set this to the baud rate set for the master station.

---

2 │ Precautions when using a data link unit

The data link unit acts only as a local station, so the station number setting switch should be set to "0".

---

3 │ Testing the data link connection (self-test)

The self-test checks elements such as the data link hardware and link cable connections. This test can be selected by setting the mode change setting switch to the third item shown below.

Switch setting	Name	Contents
5	Inter-station test mode (main station)	This mode checks the circuits between two stations. The station with the lower number serves as the main station, and the other as the sub station.
6	Inter-station test mode (sub station)	
7	Self-test	This checks the hardware, including sending and reception circuits in the transmission system, based on the data link unit as a stand-alone unit.

Let's look at how the self-test is carried out.

The self-test checks the hardware of the data link unit, including sending and reception circuits (main loops and auxiliary loops) in the transmission system, based on the data link unit as a stand-alone unit. For other testing methods, please refer to the MELSECNET and MELSECNET/B Data Link System Reference Manuals.

6 - 5

The self-test procedure is described below.
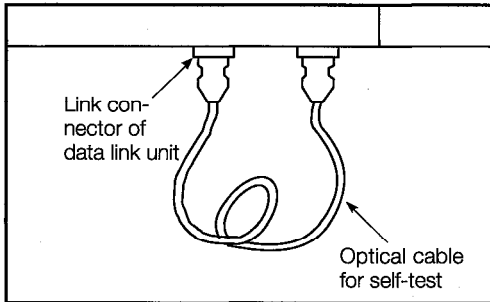
① Turn off the power supply to the GOT, and connect the link cable between the link connectors of the data link unit, in a folded-back connection. For instructions on connecting a co-axial cable, please refer to the MELSECNET and MELSECNET/B Data Link System Reference Manuals.
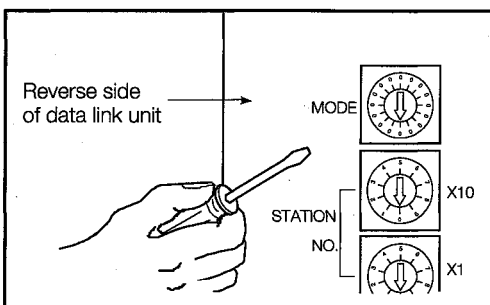A twisted-pair cable does not need to be connected.
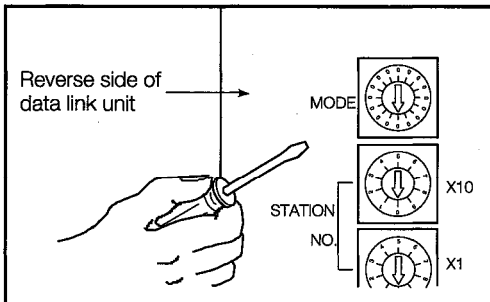
② Set the mode change setting switch on the data link unit to "7" (this is the self-test setting).
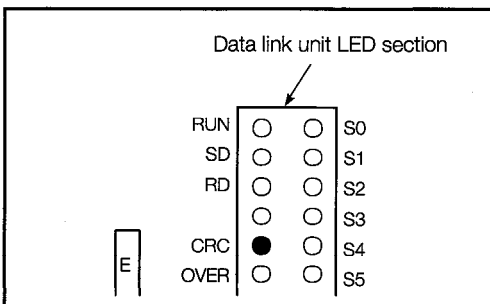
③ Turn on the power supply to the GOT and start the self-test. The test status and results are shown in the display section of the data link unit LED.

(Judging the test results)

• Normal — The following flash in sequence: "CRC", "OVER", "AB.IF", "TIME", "DATA", "UNDER".

• Error — One of the above LEDs lights, and the test stops. The following should be checked as possible causes of the error:
  · A cable may be disconnected.
  · The transmission side and receiving side have not been connected with a cable.
  · The transmission side of the main loop is connected to the transmission side of the auxiliary loop, and the receiving side of the main loop is connected to the receiving side of the auxiliary loop.
 · There is a problem with the hardware of the data link unit.

④ If the results of the test are normal, the test procedure is concluded.
Set the mode change setting switch of the data link unit to "0" or "1", and turn on the power supply to the GOT (this sets the on-line mode).

6.5　Installing a Network Unit

This shows how to install a network unit in the GOT. For more detailed information on network unit specifications and settings, please refer to the A7GT-J71LP23/BR13 User's Manual and the MELSECNET/10 Network System Reference Manual (For PC Networks).

| ⚠ CAUTION	● Before installing a network unit in the GOT, or removing a unit already installed, always turn off the power supply to the GOT.
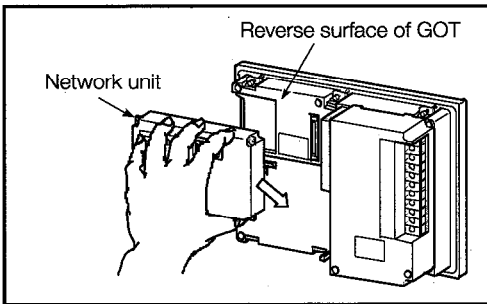
① Install the network unit in the GOT, and tighten the screw to secure it.
To remove the network unit, loosen the screw, and then reverse the installation procedure.
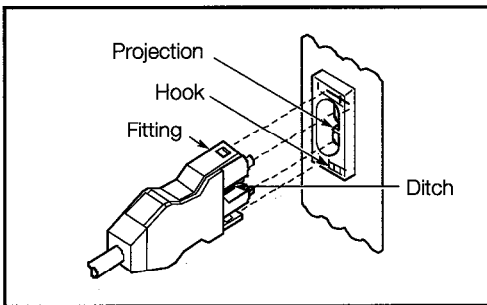
② Connect the link cable to the network unit.
For instructions on connecting a coaxial cable, please refer to the MELSECNET/10 Network System Reference Manual (For PC Networks).
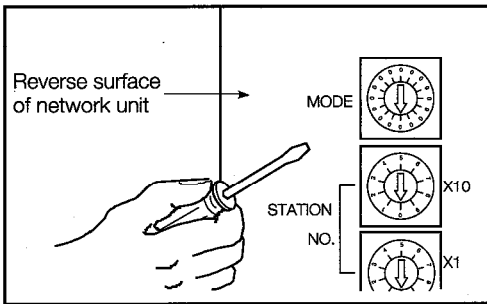
③ Set the mode change switch of the network unit to the Test Mode.
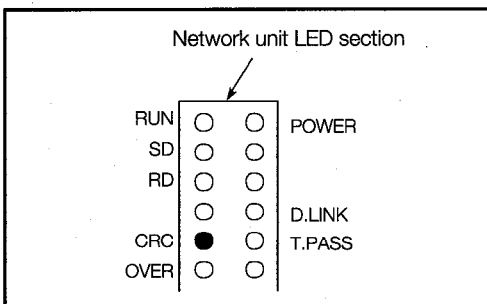
④ Turn on the power supply to the GOT and run a link test of the network.
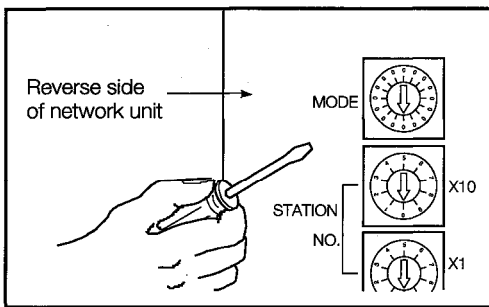
⑤ After the test has been completed, turn off the power supply to the GOT, and set the various switches on the network unit to match the system configuration.
This completes the procedure for setting the network unit.

1 Setting the switches on the network unit

This section explains how to set the switches used with the network unit.

(a) Network number setting switch

Set the number of the network connected to the network unit.

(b) Group number setting switch

Set the number of the group to be incorporated into the network unit. If no group is to be specified, set "0" for this.

(c) Station number setting switch

The network unit should be set as follows, depending on whether an optical loop system or a coaxial bus system is used.

• Optical loop system (A7GT-J71LP23): Stations 1 ~ 64
• Coaxial bus system (A7GT-J71BR13): Stations 1 ~ 32

(d) Mode change setting switch

Set this to the on-line mode when using a network.

2 Precautions when using a network unit

The network unit acts only as an ordinary station, so the control station shift function cannot be used. Also, the range of other stations with which communications can be exchanged is limited to those stations of network connected to the network unit. Communications cannot be exchanged with other stations on other networks.

3 Testing the network connection (self-test)

The self-test checks elements such as the network hardware and cable connections. This test can be selected by setting the mode change setting switch to the tenth item shown next page.

Switch setting	Name	Contents
3	Loop test (main loop)	This mode checks the circuits after all of the stations have been connected. It sets all of the stations other than those being checked in the on-line mode and then runs the test (only with optical loop systems).
4	Loop test (auxiliary loop)	
5	Inter-station test mode (main station)	This mode checks the circuits between two stations. The station with the lower number serves as the main station, and the other as the sub station.
6	Inter-station test mode (sub station)	
7	Self-test	This checks the hardware, including sending and reception circuits and cables in the transmission system, based on the network unit as a stand-alone unit.
8	Internal self-test	This checks the hardware, including sending and reception circuits in the transmission system, based on the network unit as a stand-alone unit.
9	Hardware test	This checks hardware inside the network unit.
D	Network no. check	This checks the network number, group number, and station numbers specified for the network unit.
E	Group no. check	
F	Station no. check	

Let's look at how the self-test is carried out.

The self-test checks the hardware of the network unit, including sending and reception circuits (main loops and auxiliary loops) and cables in the transmission system, based on the network unit as a stand-alone unit.

For other testing methods, please refer to the MELSECNET/10 Network System Reference Manual (For PC Networks).
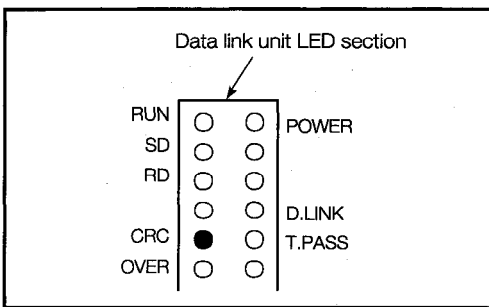
The self-test procedure is described below.
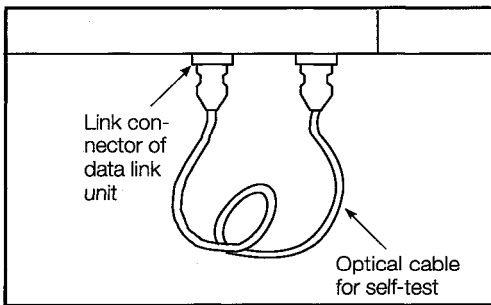
① Turn off the power supply to the GOT, and connect the optical cable between the connectors of the network unit, in a folded-back connection.

For instructions on connecting a coaxial cable, please refer to the MELSECNET/10 Network System Reference Manual (For PC Networks).
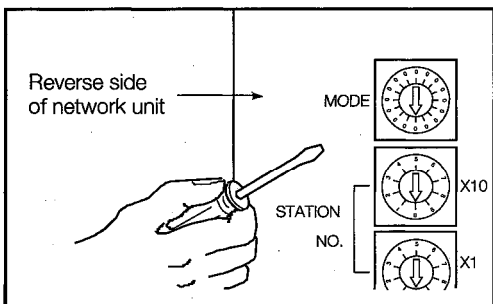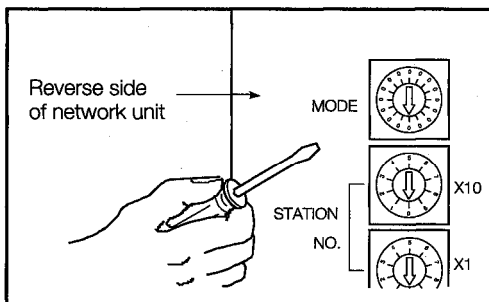

② Set the mode change setting switch on the network unit to "7" (this is the self-test setting).

6 - 9

```
            Data link unit LED section
                          /
        RUN   O   O   POWER
         SD   O   O
         RD   O   O
              O   O   D.LINK
        CRC   ●   O   T.PASS
       OVER   O   O
```

③ Turn on the power supply to the GOT and start the self-test. The test status and results are shown in the display section of the network unit LED.

(Judging the test results)

- Normal — The following flash in sequence: "CRC", "OVER", "AB.IF", "TIME", "DATA", "UNDER".
- Error — One of the above LEDs lights, and the test stops. The following should be checked as possible causes of the error:
  - A cable may be disconnected.
  - The transmission side and receiving side have not been connected with a cable.
  - The transmission side of the main loop is connected to the transmission side of the auxiliary loop, and the receiving side of the main loop is connected to the receiving side of the auxiliary loop.
  - There is a problem with the hardware of the network unit.

```
  Reverse side                MODE
  of network unit
                          X10
                STATION
                  NO.     X1
```

④ If the results of the test are normal, the test procedure is concluded.
Set the mode change setting switch of the network unit to "0", and turn on the power supply to the GOT (this sets the on-line mode).

7. Operating Utility Functions

7.1 A Table of Utility Functions

Item	Contents	Remarks	Ref. Page
Brightness adjustment Message display selection	Adjusts the backlight brightness Selects the screen message display (Japanese/English)		Section 7.3
System monitor	Monitors/changes CPU devices	Can only be executed when OS is installed from graphics software to GOT	Section 7.4
Screen copy (for future planning)	Transmits data between internal memory of screen data and memory card	Only screen data created by the user	Section 7.5
Setup	Sets the following items: • Message display selection (Japanese/English) • Buzzer sound adjustment • Screen saver time setting • Select the display mode (for either the A850GOT-LWD and A850GOT-LBD, normal/reversed display can be selected).		Section 7.6
Self-test	Tests the following hardware units of the GOT: • Drawing check • Font check • Memory card check (for future planning) • Check of user area in internal memory • Check of OS area of internal memory • CPU communications check • Check of touch keys		Section 7.7
Memory information	Displays the following information: • OS version • Format of communications with PC CPU • Space available in internal memory • Whether or not memory card is inserted, and available space (for future planning) • Whether or not circuit monitor function exists		Section 7.8
Clock function	Sets date/time of PC CPU		Section 7.9
Screen cleaning	Displays screen in order to clean display unit		Section 7.10

7.2   Procedures to Prepare for Running the Various Functions

This section outlines the various procedures used to prepare for running the utility functions. All of the utility functions can be operated using the touch keys on the monitor screen.

There are two ways to start up the utility functions, as described below.

(1)   Touch the top right and top left corners of the monitor screen at the same time.

Touch at the same time
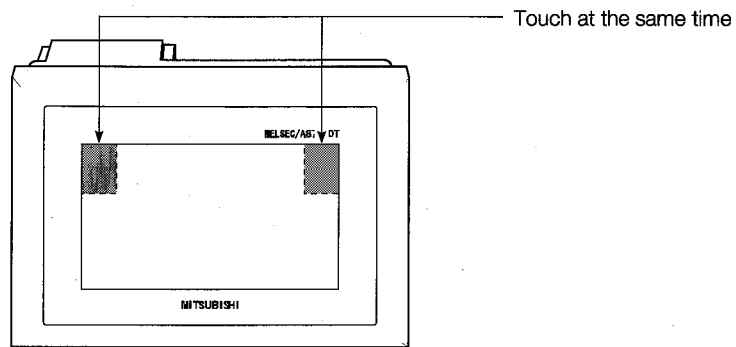
(2)   On the monitor screen, specify the touch key (expansion) function, and input the settings using the touch keys. (For information on entering settings using touch keys, please refer to the A8GOTP Operating Manual (Monitor Screen Creation Manual).)
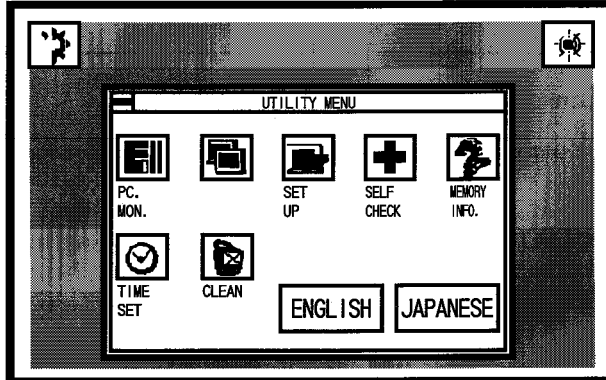
The following shows an outline of the utility function procedures.
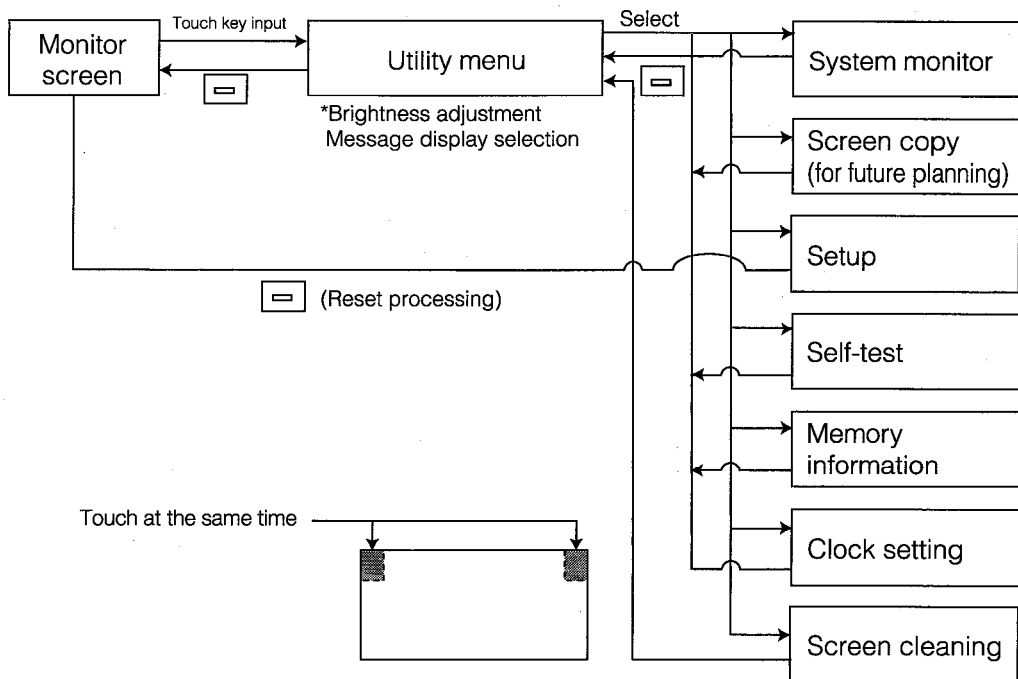
7.3   Selecting Functions on the Utility Menu Screen
(Adjusting the Screen Brightness — Brightness Adjustment)
### (Selecting the Screen Message Display — Message Display Selection)

[1] Display screen

[2] Functions

- This is the menu screen where the various utility functions are selected.
- The brightness of the screen can be adjusted on this screen.
- The screen message display (Japanese/English) can be selected on this screen.

[3] Operation

(a) Basic operation

- Directly touch the section where the function to be selected is displayed.

(b) Return to the monitor screen

- Touching the ▭ returns to the monitor screen.

(c) Brightness adjustment

- Touch LIGHT   DARK .
- The brightness can be adjusted in 50 steps.

(d) Message display selection

- Touch ENGLISH or JAPANESE . (ENGLISH : English, JAPANESE : Japanese)

POINT

- If the OS has not been installed in the GOT, the items for system monitoring are displayed, but cannot be selected.
- If the PC CPU connected to the GOT does not have a clock function, the clock setting is displayed, but cannot be selected.

---

[4] Error messages displayed in response to operations

Message	Cause	Corrective Action
Can't be selected (When system monitor or clock setting is selected)	• System monitoring function OS has not been installed in GOT • PC CPU connected to GOT has no clock function	• Install the OS. • Replace the PC CPU with one that has a clock function, or do not use the clock function.

7.4 Monitoring PC CPU Device Data on a Dedicated Screen (System Monitor)

POINT

In order to use the system monitor function, the system monitoring function OS must be installed from the graphics software to the GOT.

---

1 **Display screen**

The system monitor function enables the following types of monitoring.

① Entry monitor

Up to 8 points of PC CPU devices registered by the user can be monitored.

ENTRY MONITOR	MENU	FORM	SET
NETWK No.[0] STATION[FF]			

D	15	-2147483648	DW
D	10	-32767	
X	001	●	
M	25	○	
D	30	5000	
W	200	43	
R	50	68378428	DW
Y	70	●	

② Batch monitor

Up to 16 points subsequent to PC CPU devices specified by the user can be monitored.

BATCH MONITOR	MENU	FORM	SET
NETWK No.[0] STATION[FF]			

D	10	32767	D	18	-500
D	11	0	D	19	3234
D	12	0	D	20	0
D	13	-1	D	21	0
D	14	0	D	22	0
D	15	3	D	23	-32768
D	16	0	D	24	0
D	17	0	D	25	0

③ T/C monitor

Up to 8 points, including the current value, set value, contact point, and coil, of timer (T)/counter (C) values subsequent to PC CPU devices specified by the user can be monitored.

TC MONITOR	MENU	FORM	SET
NETWK No.[0] STATION[FF]			

T	0	PV	0 SV	0 ┤├ ─○┤	▲
[Production line A]					
T	1	PV	0 SV	0 ┤├ ─○┤	
[Production line B]					
T	2	PV	150 SV	150 ╼╂ ─●┤	
[Production line C]					
T	3	PV	0 SV	0 ┤├ ─○┤	
[Production line D]					▼

④ Buffer memory monitor

Up to 16 points subsequent to the buffer memory of a special function unit specified by the user can be monitored.

BM MONITOR	MENU	FORM	SET
NETWK No.[0] STATION[FF]			
I/O NO [1]			

BM	1110	-32768	BM 1118	0
BM	1111	64	BM 1119	0
BM	1112	149	BM 1120	150
BM	1113	-1111	BM 1121	131
BM	1114	126	BM 1122	-32768
BM	1115	160	BM 1123	555
BM	1116	255	BM 1124	2368
BM	1117	1200	BM 1125	11000

2 **Functions**

- Bit devices and word devices of the PC CPU can be monitored and changes made.
- Contact points, coils, set values, and current values for the PC CPU timer and counter can be monitored and changes made.
- The contents of the special function unit buffer memory can be monitored and changes made.

3 **Operation**

(a) Basic operation

- Operations can be carried out by touching the monitor screen directly.
- For detailed information, please refer to the A870GOT/A850GOT Graphic Operation Terminal Operating Manual (Expanded Functions Manual).

(b) Returning to the utility menu screen

- Touching the [⊟] returns to the monitor screen.

7.5 Copying Monitor Data between the Internal Memory and Memory Card (Screen Copy)

This is planned for use in the future. The "Screen Copy" item on the Utility menu cannot be selected.
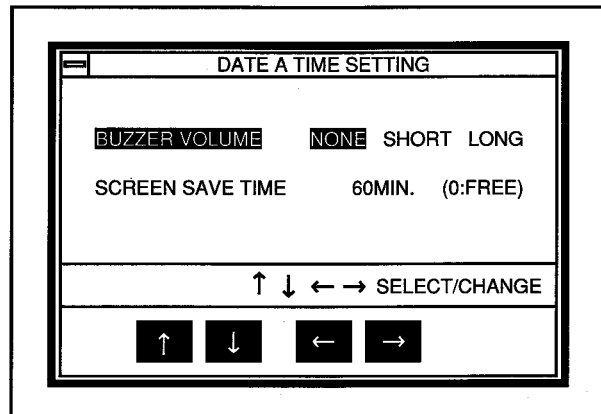
7.6   Entering GOT Usage Environment Settings (Setup)

> **POINT**
>
> Executing the setup function and touching ⊟ automatically resets the GOT and displays the monitor screen.

1   Display screen

Example of screen

```
┌─────────────────────────────────────┐
│ ┌─────────────────────────────────┐ │
│ │⊟       DATE A TIME SETTING      │ │
│ │                                 │ │
│ │                                 │ │
│ │ BUZZER VOLUME     NONE SHORT LONG│ │
│ │                                 │ │
│ │ SCREEN SAVE TIME    60MIN. (0:FREE)│ │
│ │                                 │ │
│ ├─────────────────────────────────┤ │
│ │   ↑ ↓ ← → SELECT/CHANGE         │ │
│ ├─────────────────────────────────┤ │
│ │   [↑]  [↓]  [←]  [→]            │ │
│ └─────────────────────────────────┘ │
└─────────────────────────────────────┘
```

* The Settings and selected items are highlighted.

2   Functions

- The length of the buzzer can be selected. (When shipped from the factory, this is set to "Short".)
- The timing of the screen saver function can be set.

  Screen saver function — · In order to keep the display unit from burning out, this function turns off the display if it is not touched within a specified period of time. (The backlight does not go off.)

  · If the display has been turned off, it can be turned on again simply by touching it.

  · If this timing is set to "0", the screen is always displayed.

The display mode (normal (no)/reversed (yes)) can be selected. (When the unit is shipped, the display mode is set to the normal mode.) Either the A850GOT-LWD or the A850GOT-LBD can be selected.

3   Operations

(a) Basic operations

- Items are selected by touching the [↑] and [↓] keys.
- Settings are changed by pressing the [←] and [→] keys.
- The setting for the screen saver timing can be changed by touching the [←] and [→] keys to highlight the digits, and then the [↑] and [↓] keys to set the numeric value. (If another item is selected right after this setting is entered, touching the [←] key returns the highlighted display to the "Screen Saver Time" parameter, where the [↑] and [↓] keys can be used for selection.)
- After entering a setting, touch the ⊟ key.

  When the ⊟ key is pressed, the GOT is reset automatically, and the monitor screen is displayed.

7.7 Self-Test of the GOT Main Unit Hardware (Self-Test)

1   Display screen

```
┌─────────────────────────────────────────┐
│  ┌───────────────────────────────────┐  │
│  │ ─        SELF CHECK               │  │
│  │                                   │  │
│  │  ┌──┐    ┌──┐    ┌──┐    ┌──┐     │  │
│  │  │  │    │AB│    │  │    │USER│   │  │
│  │  └──┘    └──┘    └──┘    └──┘     │  │
│  │  GRAPHIC FONTROM MEMCARD USERROM  │  │
│  │  CHECK   CHECK   CHECK   CHECK    │  │
│  │                                   │  │
│  │  ┌──┐    ┌──┐    ┌──┐             │  │
│  │  │OS│    │  │    │  │             │  │
│  │  └──┘    └──┘    └──┘             │  │
│  │  OS AREA COMM.   TOUCHSW          │  │
│  │  CHECK   CHECK   CHECK            │  │
│  └───────────────────────────────────┘  │
└─────────────────────────────────────────┘
```
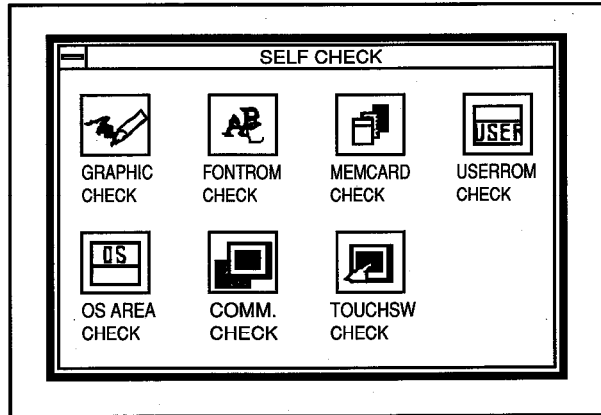
2   Functions

This tests the hardware units of the GOT listed below.

- Drawing check — Checks visually for sections of the display unit where colors or display elements are missing.
- Font check — Checks visually for distortion in the character font.
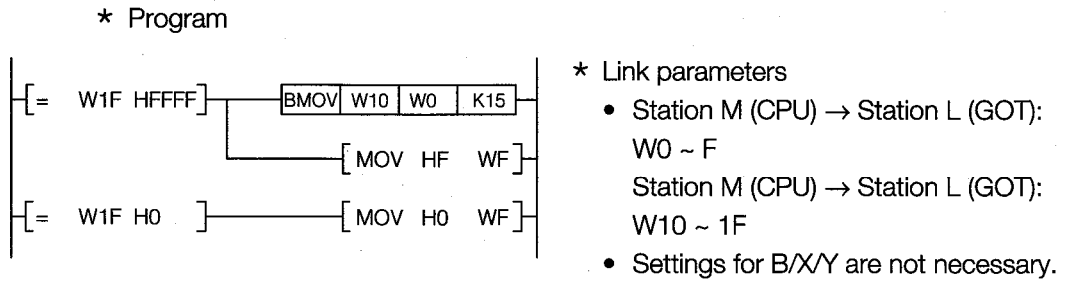- Memory card check — Checks the memory card hardware. (for future planning)
- Internal memory OS area check — Checks the OS area of the internal memory.
- CPU communications check — Checks the status of communications between the GOT and the PC CPU. (This requires a program in the PC CPU. Also, if the MELSECNET is connected, the link parameters are required as well.)
- Touch keys check— Checks the touch keys.

These are checked by the GOT.

3   Operations

(a) Basic operations

- Touch the display section of the item to be run.
- To operate the various items, follow the messages displayed on the screen.
- When an item has been completed without errors, a message is displayed, indicating that no problems occurred.
- If a problem is detected, an error message is displayed, stating the content of the error.
- The following three types of screens are drawn during the drawing check:
  ① The entire screen is displayed in one color. With STN models, the color changes in sequential order as follows: blue → red → purple → green → blue/green → yellow → white. With L models, only white is displayed.
  ② Basic graphics such as circles and squares are displayed.
  ③ Ovals and checked patterns are displayed either alternately, or in a superimposed display.
- To check CPU communications, the following program and link parameters should be written to the PC CPU. (Link parameters are necessary only if a MELSECNET is connected.)
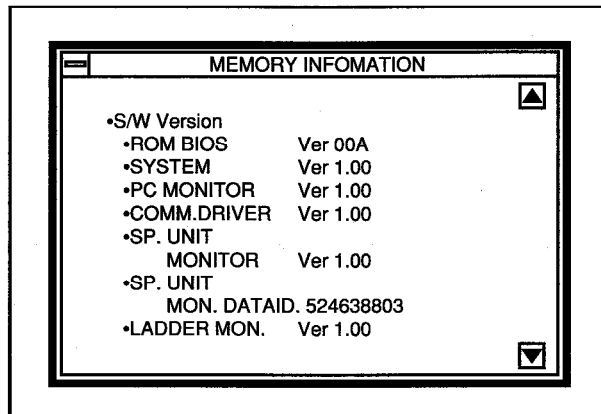
* Program

```
├─[= W1F HFFFF]──┬──[BMOV W10 W0 K15]──
│                │
│                └────────[MOV HF WF]──
│
├─[= W1F H0  ]──────────[MOV H0 WF]──
```

* Link parameters
- Station M (CPU) → Station L (GOT):
  W0 ~ F
  Station M (CPU) → Station L (GOT):
  W10 ~ 1F
- Settings for B/X/Y are not necessary.

(b) Returning to the utility menu screen

• Touching the [▭] returns to the utility menu screen.

7.8 Displaying Various Types of GOT System Information (System Information)

[1] Display screen

Example of screen

```
┌────────────────────────────────────┐
│ [▭]         MEMORY INFOMATION        │
│                               [▲]    │
│  •S/W Version                        │
│     •ROM BIOS        Ver 00A         │
│     •SYSTEM          Ver 1.00        │
│     •PC MONITOR      Ver 1.00        │
│     •COMM.DRIVER     Ver 1.00        │
│     •SP. UNIT                        │
│         MONITOR      Ver 1.00        │
│     •SP. UNIT                        │
│         MON. DATAID. 524638803       │
│     •LADDER MON.     Ver 1.00        │
│                               [▼]    │
└────────────────────────────────────┘
```

[2] Functions

This displays the various types of memory information for the GOT shown below.

- OS version
- Format for communications with the PC CPU
- Available space in internal memory
- Whether or not memory card is installed, and amount of space available on memory card (for future planning)

[3] Operations

(a) Basic operations

The screen can be scrolled by touching the [△] and [▽] keys.
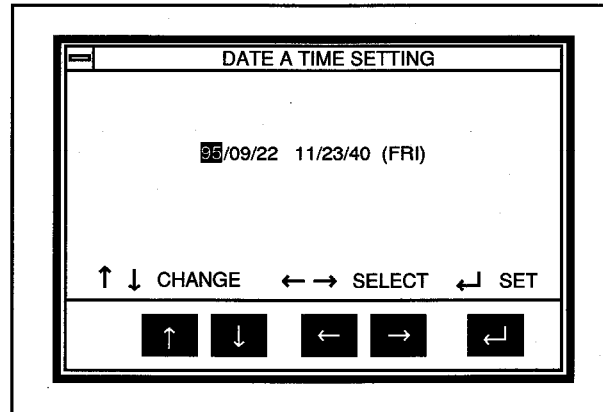
(b) Returning to the utility menu screen

• Touching the [▭] returns to the utility menu screen.

7.9   Specifying the PC CPU Clock Data (Clock Setting)

1   Display screen

Example of screen

```
┌─────────────────────────────────────┐
│  ┌───────────────────────────────┐   │
│  │ ▭│      DATE A TIME SETTING    │   │
│  ├───────────────────────────────┤   │
│  │                               │   │
│  │     ▓▓/09/22  11/23/40 (FRI)  │   │
│  │                               │   │
│  │                               │   │
│  │  ↑ ↓ CHANGE   ←→ SELECT  ↵ SET│   │
│  ├───────────────────────────────┤   │
│  │  [↑] [↓]  [←] [→]  [↵]        │   │
│  └───────────────────────────────┘   │
└─────────────────────────────────────┘
```

* The date and time displayed in the setting window are those shown when the clock setting screen is displayed. The time most recently set is always shown at the upper right of the screen. After you have finished entering the settings, check this time at the upper right of the display.

2   Functions

• On the clock controlled by the PC CPU, the date, time, and day can be set.

3   Operations

(a) Basic operations

• Items are selected by touching the [←] and [→] keys.
• Numeric values are changed by touching the [↑] and [↓] keys.
• Touching the [↵] key sets the clock data in the PC CPU.

(b) Returning to the utility menu screen

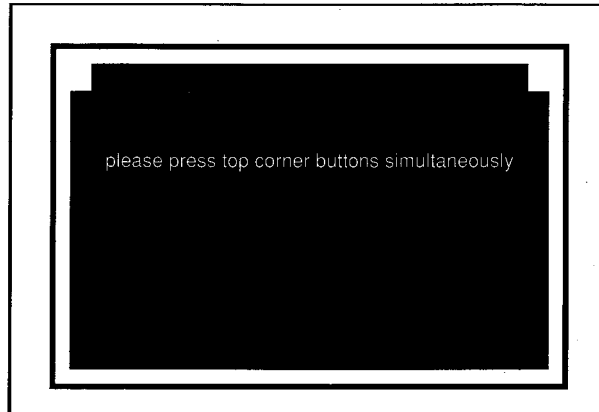• Touching the [▭] returns to the monitor screen.

POINT

• The clock setting should be entered when the system is booted.
• When using a sequence program or similar program on the PC CPU side to read and write clock data, settings for the clock data cannot be entered properly using this function.
• If the PC CPU connected to the GOT does not have a clock function, this function cannot be selected on the Utility menu.

7.10 Displaying the Display Section Cleaning Screen (Screen Cleaning)

1　Display screen

Example of screen

```
please press top corner buttons simultaneously
```
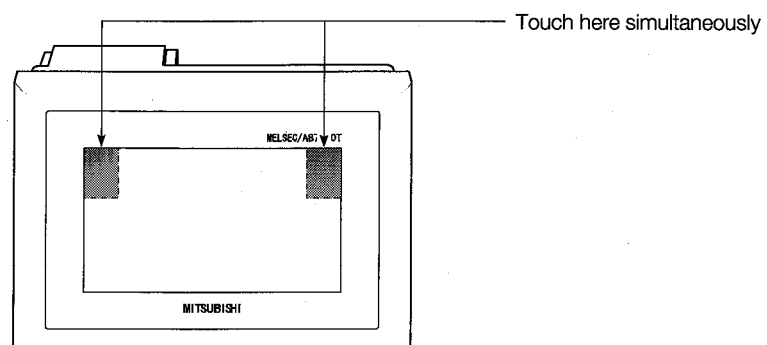
2　Functions

- When cleaning the display unit, displaying a completely black screen makes the surface easier to see.

3　Operations

(a) Basic operations

- Touching the upper right and left corners of the screen simultaneously returns to the Utility menu.

Touch here simultaneously

MELSEC/A8□□OT

MITSUBISHI

8. Off-line Functions

All off-line functions are processed from the graphics software in relation to the GOT.

POINT
There are no operations on the GOT side.

For detailed information on operation with the graphics software, please refer to the A8GOTP Operating Manual (Data Transmission/Debugging/Document Creation Manual).

8.1 A Table of Off-line Functions

Item	Contents	Remarks
Install	Installs the OS from the computer to the internal memory of the GOT.	
Download	Downloads project data and special unit monitor data from the computer to the internal memory of the GOT.	
Upload	Uploads project data from the internal memory of the GOT to the computer.	
Memory card format (for future planning)	Formats the memory card installed in the GOT.	
Memory information	Sends the following information to the computer: the version of the OS currently installed in the GOT, the space available in the internal memory, and the space available on the memory card.	This can also be checked using "Memory Information" under the GOT utility functions (see Section 7.8).

MEMO

9. Installation

9.1   Precautions Regarding Handling

This section explains precautions which should be observed when handling the GOT.


⟨!⟩ DANGER
- Before beginning any installation or wiring work, make sure all phases of the power supply have been obstructed from the outside. Failing to completely shut out the power supply phases could cause electrical shock and/or damage to the product.

- Following installation or wiring work, when turning on the power supply and operating the equipment, make sure the terminal cover provided as an accessory has been attached to the product. Failing to attach the cover could result in electrical shock.

⚠ CAUTION
- Be careful never to let foreign matter such as filings or wiring scraps get inside the unit. These can cause fire, breakdowns, and malfunctioning.

- Communications cables should not be bundled with main circuits and power lines, or installed in the vicinity of these.

- The communications cable should be connected securely to the connector on the communications unit, and checked after being installed, to make sure it is not loose. Defective contact could cause malfunctioning.

- The FG and LG terminals of the GOT main unit should always be grounded using the Class 3 ground designed especially for the Graphic Operation Terminal, or a higher class of ground. Failing to ground these terminals sufficiently could cause electrical shock and/or malfunctioning.

- Before wiring the GOT, check the rated voltage and terminal layout of the wiring, and make sure wiring is done correctly. Connecting a power supply that differs from the rated voltage, or wiring it incorrectly, could cause fire and/or breakdowns.

- Tighten terminal of the GOT main unit screws to the rated torque.
  Failing to tighten terminal screws adequately could cause short-circuits, fire, and/or malfunctioning.

- The unit is made of resinous materials, and should be protected from strong shock or impact.

- Do not separate the PCB of the unit from the case, as this can result in a breakdown.

- When attaching the main unit to the control panel, position the display unit as shown below.

  · If the temperature inside the panel is 55°C, the display unit should be attached at an angle within the range of 60 ~ 105°.
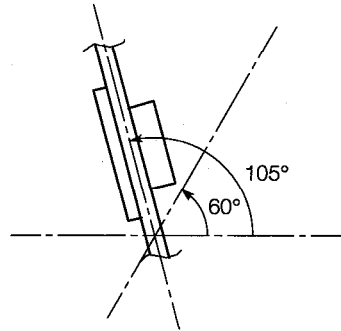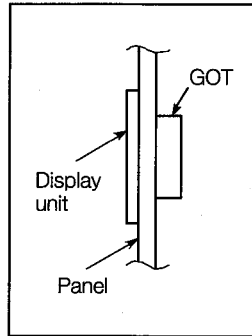
  · Using the display unit at an angle outside the range noted above may cause the GOT to wear out faster than it would otherwise. Make sure the temperature inside the panel does not exceed 40°C.

9.2   Installation Environment

| ⚠ CAUTION	When installing the equipment, make sure the location satisfies the general specifications, and avoid locations like those listed below. Using the equipment in an environment outside the range of the general specifications could result in electrical shock, fire, malfunctioning, and damage to or deterioration of the product. ● Locations where the temperature changes drastically and condensation occurs ● Locations where the equipment is exposed to direct sunlight ● Locations where strong electrical or magnetic fields are generated ● Locations where the main unit is exposed to direct vibration or impact

9.3   Attachment Procedures

Use the fittings that come with the main unit to assemble it.

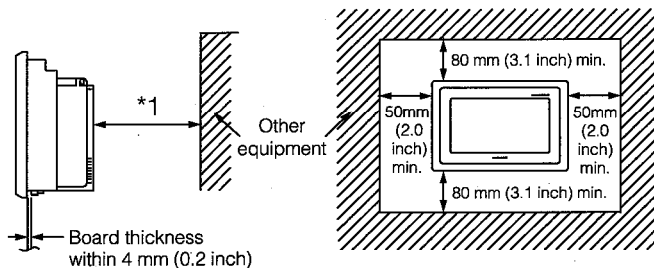**⎡ 1 ⎤   Attachment panel and processing dimensions**

If units 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.

184 (72.4) +1.0(0.4) 0 (0) mm (inch)

Panel door opening

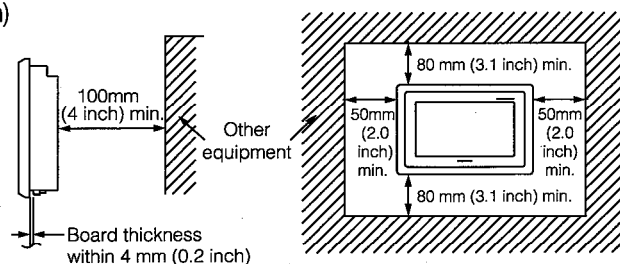124 (48.8) +1.0 (0.4) 0 (0) mm (inch)
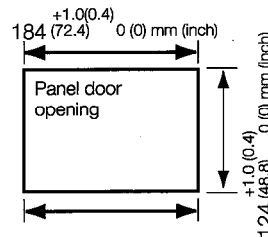
⎡ 2 ⎤   Attachment position

When attaching the GOT, it should be separated from other equipment by the clearances indicated below.

● When a communications unit is installed (with a bus connection or MELSECNET connection)

*1

Other equipment

Board thickness within 4 mm (0.2 inch)

80 mm (3.1 inch) min.
50mm (2.0 inch) min.
50mm (2.0 inch) min.
80 mm (3.1 inch) min.

*1. When using a bus connection, at least 200 mm (8 inch) is required here. With any other type of connection, at least 100 mm (4 inch) is required.

● When no communications unit is installed (with a direct CPU connection or calculator link connection)


100mm (4 inch) min.

Other equipment

Board thickness within 4 mm (0.2 inch)

80 mm (3.1 inch) min.
50mm (2.0 inch) min.
50mm (2.0 inch) min.
80 mm (3.1 inch) min.

3 **Attachment procedure**

(a) Insert the front of the main unit first.

(b) The unit is attached at four places on the top and bottom of the GOT, as shown below.

(Top)   (Bottom)

Attachment positions   Attachment positions
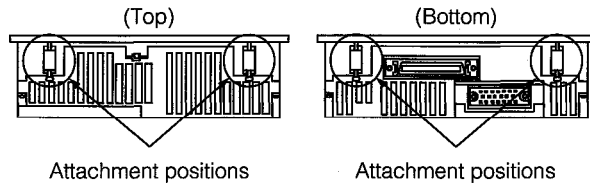
(c) Attach the attachment hooks as shown below. The tightening torque should be 62 ~ 83.5 N-cm.
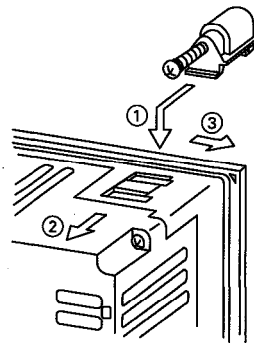
① Fit the attachment hook onto the GOT main unit.

② Slide the attachment hook in the direction indicated by ②.

③ Slide the attachment hook in the direction of the notch provided for the hook.

④ Secure the attachment hook to the panel with the screw.

10. Maintenance and Inspection

In order to make sure your sequencer is kept operating in optimum condition, certain items should be inspected daily, and others on a regular basis. These items are described below.

10.1 Daily Inspection

The items noted in Table 10.1 should be inspected daily.

Table 10.1 Daily Inspection

Item	Inspection Method	Item to Inspect	Judgment Criteria	Handling
1	Unit attachment conditions	Check for loose attachment screws and covers that are not tightly attached.	Make sure they are firmly attached.	Tighten screws securely.
2	Connections	Loose terminal screws	There should be no loose screws.	Tighten terminal screws securely.
		Proximity to crimping terminals	There should be appropriate spacing.	Space appropriately.
		Connector sections of cables	There should be no loose connectors.	Tighten connector screws securely.

10.2 Periodic Inspection

The items noted below should be inspected once or twice every six months. If the equipment is moved or renovated, or if wiring is changed, these items should be inspected at that time.

Table 10.2 Periodic Inspection

Item	Item Method		Item to Inspect	Judgment Criteria		Handling
1	Ambient environment	Ambient temperature	Measure with thermometer/barometer. Measure corrosive gases.	Display unit	0~40°C	If used inside the panel, in-panel temperature should be same as ambient temperature
				Other than display unit	0~55°C	
		Ambient humidity		10 ~ 90% RH		
		Atmosphere		No corrosive gases		
2	Power supply voltage check		Measure voltage between DC24V terminals.	85 ~ 132V AC		Change power supply
				170 ~ 264V AC		
3	Attachment conditions	Looseness, rattling	Try moving the unit.	Should be attached firmly and securely		Tighten screws
		Dirt or foreign matter	Check visually.	Should not be any adhering to equipment		Remove/clean
4	Connections	Loose terminal screws	Tighten with a screwdriver.	No loose screws		Tighten
		Proximity to crimping terminals	Check visually.	Appropriate spacing		Correct spacing
		Loose connectors3 Inspection Method	Check visually.	No loose connectors		Tighten connector screws10 Power supply voltage check

10.3 Precautions During Maintenance and Inspection

The following precautions should be observed when carrying out maintenance and inspections.

⬦ DANGER	● Never touch terminals while conductivity is being supplied. This could cause electrical shock and/or malfunctioning. ● When cleaning the terminals and tightening the screws, make sure the power supply has been turned off. Cleaning the terminals or tightening screws while conductivity is being supplied could cause electrical shock.

⚠ CAUTION	● Never disassemble or renovate the unit. This could cause fire, breakdowns, and/or malfunctioning. ● Always turn off the power supply before attaching or detaching component units. Doing this while conductivity is being supplied could cause a unit to break down, or could cause malfunctioning. ● When discarding this product, it should be handled as an industrial discard.

10. 4 Replacing the LCD Backlight

The GOT has a backlight built into the LCD of the display unit. As time goes by, this backlight gradually becomes dimmer. When the display unit screen becomes hard to see, the backlight should be replaced.

|	
⬦⚠ **DANGER**	● Before replacing the backlight, turn the power supply off (if using a bus connection, turn off the power to the CPU as well), and detach the GOT from its base. Replacing the backlight with the GOT attached to the base could cause it to fall over, resulting in injury. Also, doing this with conductivity being supplied could result in electrical shock.

|	
⚠ **CAUTION**	● When replacing the backlight, be careful not to drop the screws that secure the back-light in place, or the screws that secure the GOT in place. The backlight should be replaced in an area where there is no other machinery or equipment. Dropping the screws that secure the backlight or the GOT could cause damage to the machinery or cause accidents. ● When replacing the backlight, be careful not to touch the GOT PCB or electrical components. This can cause breakdowns and malfunctions. ● Always make sure the screws that secure the backlight are tightened to the specified torque (14.7 ~ 24.5 N·cm). Failing to tighten the screws properly could cause damage to the backlight, or cause it to break down. ● When replacing the backlight, do not pull on the backlight cable connector. This could cause damage to the backlight, or cause it to break down.

1 **Removing the backlight**

① Loosen the GOT attachment hooks, and remove the GOT from the base.

② Using a screwdriver, remove the four securing screws from the back corners of the GOT, and the one securing screw in the center. If a communications unit has been installed, remove it before taking out the securing screws.
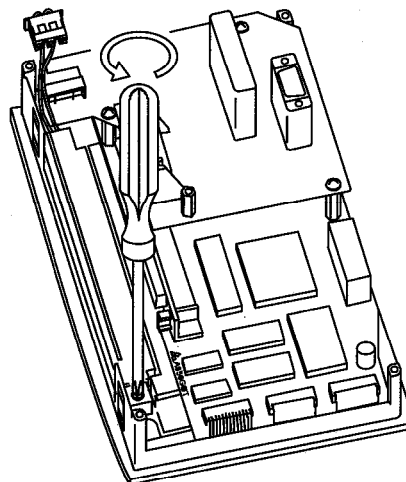

Securing screws   Securing screws
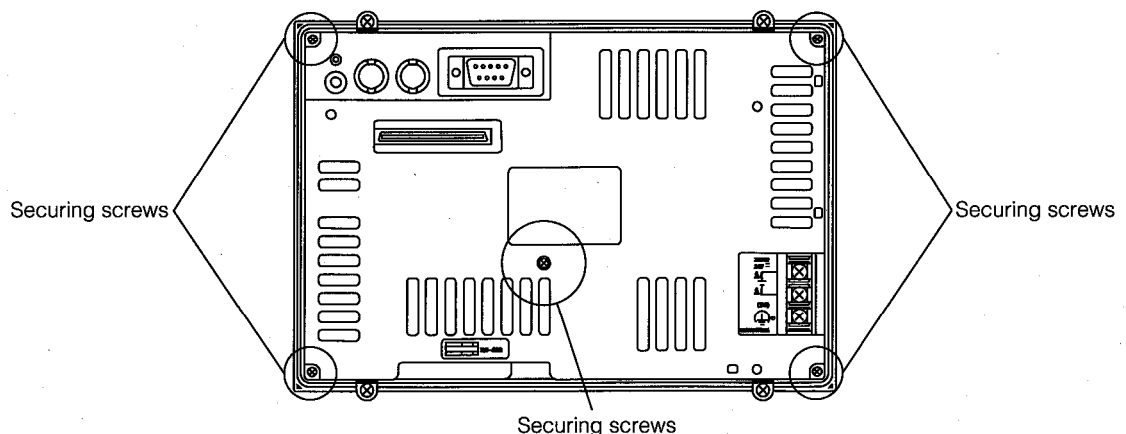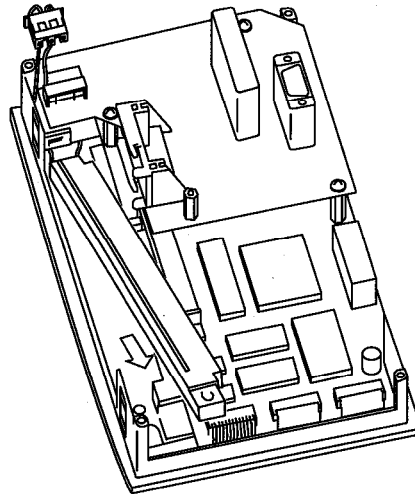
Securing screws

③ Remove the case from the back of the GOT.
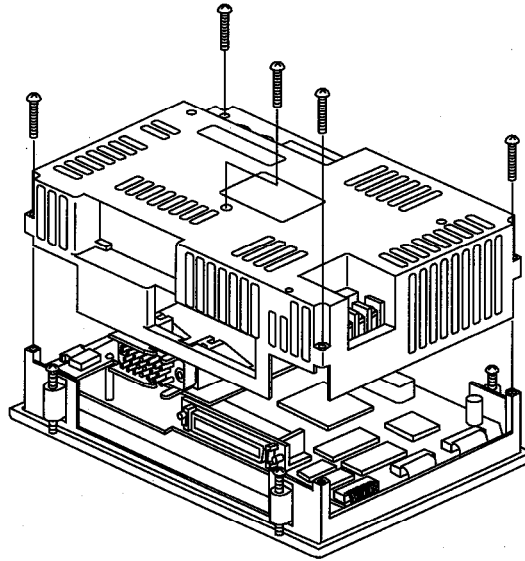
④ Disconnect the backlight cable connector from the display unit connectors.
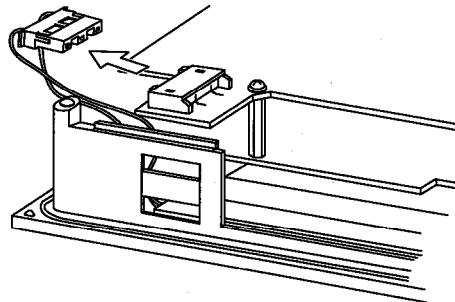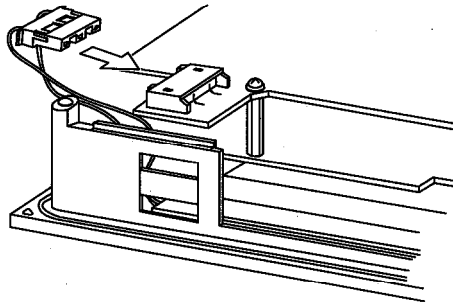
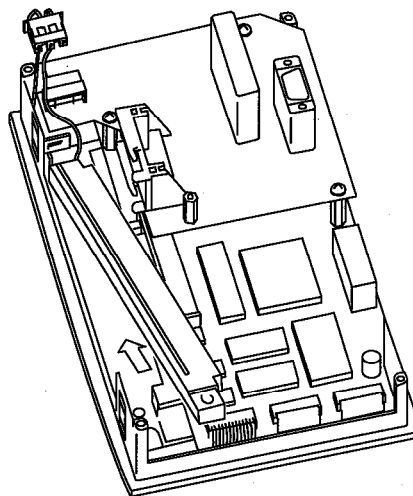⑤ Using a screwdriver, remove the screws securing the backlight.

⑥ Remove the back light from the display unit.

2 **Attaching the backlight**

① Fit the backlight cable connector into the display unit connector.

② Align the left side of the backlight with the backlight holder on the display unit, and fit the backlight in position.

③ Tighten the screw to secure the backlight.

④ Attach the case from the back of the GOT to the display unit, and tighten the securing screws. Make sure the screws are tightened to the appropriate torque (36.3 ~ 48 N·cm).
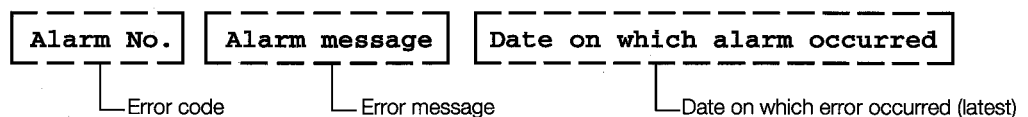
MEMO

11. Error Codes and Error Messages

This section explains the error codes and error messages displayed in the alarm list display of the monitor function.

11.1 Interpreting the Display Contents

This section explains how to look at the error codes and error messages displayed on the monitor screen, and to decipher the correct response and the reference page.

First, let's look at error codes for the system which are displayed on the monitor screen from the alarm list display of the monitor function.

1 **Display format on monitor screen — Displayed at position specified by user**

```
┌─────────────┐ ┌─────────────────┐ ┌──────────────────────────────┐
│  Alarm No.  │ │  Alarm message  │ │  Date on which alarm occurred │
└─────────────┘ └─────────────────┘ └──────────────────────────────┘
       └─Error code          └─Error message          └─Date on which error occurred (latest)
```

2 **Error codes and reference manuals**

Location where error occurred	Error code	Reference
ACPU	0 ~ 199 (D9008 value)	User's manual for the ACPU connected to the GOT
MNET/B, MNET (II)	200 ~ 299	MNET (II), MNET/B Data Link System Reference Manual (see page with instructions on special relays for links) *1
GOT	300 ~ 499	This section
MNET/10	500 ~ 799	MNET/10 Network System Reference Manual (see page with instructions on special relays for links) *2
QnACPU	1000 ~ 9999 (SD0 value)	User's manual for the QnACPU connected to the GOT

*1. See the page which explains the special relays for the link of the (error code) + 9000, and take the appropriate steps to correct the problem. For example, if error code (210) is displayed, this would be 210 + 9000 = 9210, so the error would be corrected as described by M9210.

*2. See the page which explains the special relays for the link of the (error code) - 500, and take the appropriate steps to correct the problem. For example, if error code (510) is displayed, this would be 510 - 500 = 10, so the error would be corrected as described by SB000A. (Special relays for links use hexadecimal format, so hexadecimal values should be substituted for decimal values.)

11.2 Tables of Error Codes and Error Messages

Error code	Error message	Error contents	Handling
303	Too many monitor points have been specified.	Because too many points have been specified, not enough work area can be assured for the system.	(1) Reduce the number of sprite setting points. (2) Divide the base screen number or window screen number into sections.
304	Too many trigger points have been specified.		
306	There is no monitor data.	The project data has not been sent to the internal memory.	Send the project data to the internal memory.
310	The specified monitor data does not exist, or is out of range.	(1) The specified base screen number or window screen number has not been registered in the project data. (2) The specified base screen number or window screen number is outside of the allowable range (1 ~ 1024).	(1) Specify a base screen number or window screen number which has been registered in the project data. (2) Specify a base screen number or window screen number which is within the range that can be specified.
322	The specified device is out of range.	The number of the device to be monitored is not within the allowable range for the target PC CPU.	Using the PC CPU being used and the parameter settings, specify a device number within the range that can be monitored.
400~499	Data cannot be exchanged with the CPU.	Communications between the GOT and PC CPU are not proceeding normally.	After resetting the power supply of the GOT, wait 2-3 seconds and then reset the power supply of the PC CPU. If the same error occurs again, see the user's manual for the PC CPU, and eliminate the cause of the PC CPU error.

12. Troubleshooting

In order to assure the reliability of a system, it is important to use equipment with a high level of reliability. Another important element, however, is to deal with problems quickly when they occur, and to make sure the problem is taken care of on a comprehensive basis, so it will not occur again.

This section covers the main points that are important in troubleshooting procedures.

1 Checking the problem visually

Check the contents of each of the items listed in Section 12.1 visually.

2 Confirming the problem

Following the procedure below, check to see whether the situation changes, and if so, how.

① Reset the GOT power supply.

② Reset the PC CPU.

③ If the GOT is connected to the PC CPU by means of a direct connection or a calculator link connection, unplug the connector of the RS-422 cable connecting the PC CPU to the GOT, or disconnect the serial communications unit from the GOT and then attach it again.

If a bus connection is being used, unplug the connector of the expansion cable connecting the main base/expansion base to the GOT, or disconnect the bus connection unit from the GOT and then attach it again.

If the GOT is connected to a MELSECNET, and an MNET (II) is being used, unplug the connector of the MNET (II) optical/coaxial cable.

With an MNET/B, retighten the terminal base of the MNET/B twisted pair cable.
With an MNET/10, unplug the connector of the optical/coaxial cable for the MNET/10 and connect it again.
Also, try disconnecting the data link unit or network unit from the GOT and connecting it again.

④ Store the project data in the GOT once again.

3 Using a narrower range

Using steps ① and ② above, try to pinpoint the location of the problem.

① Is the problem being caused by the PC CPU, the GOT, or a connecting cable?

② If not, check the sequence program.
(For example, does the device specified by the monitor conditions match that in the program?)

12.1 Problems and Items to Check

If a particular problem occurs, check the items marked with a circle to see if they apply.

For example, if the buzzer doesn't sound when a key is touched, check the contents described in Section 12.3.

No.	Problem	Operation of PC CPU	GOT operation environ-ment	PC CPU direct connec-tion or bus connection	Project data	Sprite setting values	GOT power supply	
1	Error code is displayed	O			O			
2	Buzzer doesn't sound for key input		O					
3	"CRC" ~ "UNDER" LEDs (MNET (II), MNET/B) of data link unit are lighted							
4	"RUN" LED (MNET (II), MNET/B) of data link unit link is not lighted							
5	"SD" or "RD" LED (MNET (II), MNET/B) of data link unit link is not lighted							
6	"125K" ~ "1M" LED (MNET/B) of data link unit link are not lighted							
7	Data cannot be input using keys			O	O	O		
8	Screen does not disappear		O					
9	Data is displayed which has not been specified			O	O			
10	Base screen or window screen is not displayed	O	O	O	O	O		
11	Display does not change as specified by sprite settings					O		
12	Wrong monitor display screen appears	O	O			O		
13	"CRC" ~ "UNDER" LEDs of network unit are lighted							
14	"SW.E", "M/S.E" LED of network units are lighted							
15	"SD" or "RD" LED of network unit is not lighted							
16	"RUN", "D. LINK", or "T. PASS" of network unit is not lighted							
17	"PRM. E" of network unit is lighted							
18	LCD screen display is too light							
	Item to check for description	Section 12.2	Section 12.3	Section 12.4	Section 12.5	Section 12.5	Section 12.6	

*1. Check this only if a bus connection unit is connected to the GOT.
*2. Check this only if a data link unit is connected to the GOT.
*3. Check this only if a network unit is connected to the GOT.

	Bus connection unit switch settings *1	Calculator link connection	Data link unit switch settings *2	Operation environment of data link unit *2	MELSECNET connection (data link) *2	Network system switch settings *3	Operation environment of network system *3	MELSECNET connection (network) *3	Backlight brightness adjustment
			○	○	○				
				○	○				
			○	○	○				
			○	○	○				
			○						
	○	○							
	○	○	○	○	○	○	○	○	
	○	○	○	○	○	○	○	○	
			○	○	○	○	○	○	
			○	○	○	○	○	○	
							○	○	
						○			
						○	○	○	
							○	○	
							○	○	
									○
	Section 12.7	Section 12.8	Section 12.9	Section 12.10	Section 12.11	Section 12.12	Section 12.13	Section 12.14	Section 12.15

12.2 Checking the Operation of the PC CPU

Using the peripheral equipment for the GPP function, check the PC CPU being monitored to see if there is an error. The contents of an error displayed by the peripheral equipment for the GPP function can be checked in the user's manual for the PC CPU.

12.3 Checking the GOT Operation Environment

If the following occur, check the GOT operation environment.

(1) The buzzer does not sound on key entry.

(2) The screen does not disappear, no matter how long you wait.

For instructions on checking the GOT operation environment, see Section 7.6, and make sure settings have been entered correctly.

12.4 Checking Connections between the GOT and PC CPU, Main Base, and Expansion Base

When the PC CPU is connected by means of a direct connection, the GOT and sequencer CPU are connected using an RS-422 cable. Make sure the cable connector is secured tightly by the screw.

If the connection cable comes off during monitoring, you can continue monitoring simply by re-connecting the cable.

If a bus connection is being used, the GOT (bus connection unit) and main base or expansion base are connected by means of an expansion cable. Check to make sure the connectors on both sides are firmly connected and secured.

12.5 Checking by Resending Project Data

If any of the following occur, the project data in the internal memory of the GOT may be different from the target data.

Using the graphics software, send the project data to the internal memory once again, and try monitoring again.

(1) Data is displayed which has not been specified.

(2) The specified base screen, window screen, or part is not displayed.

(3) The base screen or window screen does not change even if the specified sprite setting is satisfied.

(4) The touch keys do not respond.

*1. Before sending project data, use the graphics software to check the contents of the screen that has been created, and the contents of the settings.

12.6 Checking the GOT Power Supply

If no monitor screen is displayed, DC24V (-35%, 30%) may not be being supplied to the GOT. Use a tester to check the voltage at the terminal base for the GOT power supply.

12.7 Checking the Switch Settings for the Bus Connection Unit

For information on the switch settings for a bus connection unit, please refer to Section 3.2 and to the user's manual for the bus connection unit, and make sure the settings have been entered correctly.

12.8 Checking the Connections between the GOT and Calculator Link Unit, and the Operation Environment Settings

For information on checking the connections between the GOT and a calculator link unit, the mode setting switches of the calculator link unit, and the transmission specification setting switches, see Section 4.2.3.

12.9 Checking the Switch Settings for the Data Link Unit

If the wrong settings are entered for the switches on the data link unit, data cannot be transferred correctly between the unit and the MNET (II) or MNET/B.
For information on checking the data link unit switch settings, please refer to the user's manual for the pertinent data link unit, and make sure the settings have been entered correctly.

12.10 Checking the Operation Environment Settings for the Data Link System

Check the items listed below.
Also, for detailed information on the MNET (II) and MNET/B, check the reference manual for the data link system, and make sure the settings have been entered correctly.
- Check the LED displays for other stations of the MNET (II) or MNET (B), as well as the mode change setting switches and the station number setting switches.
- Using the peripheral equipment for the GPP function, monitor the link status of the MNET (II) or MNET (B) (monitor the special relays for the links and the special registers for the links, as well as the links).

12.11 Checking Connections between the GOT and MNET (II), and the GOT and MNET/B

There are two ways to connect the GOT to a data link system: the MNET (II) connection and the MNET/B connection. The items to be checked for each connection are listed below.

1 MNET (II)

For an MNET (II) connection, the data link unit and PC CPU are connected by means of an optical or coaxial cable, so make sure the connectors of the cables are firmly connected. If a cable comes off during monitoring, if the automatic recovery function has been turned on, monitoring can be resumed simply by reconnecting the cable.

2 MNET/B

For an MNET/B connection, the data link unit and PC CPU are connected by means of a twisted pair cable, so make sure the twisted pair cable is firmly connected to the terminal base.
If the cable comes off during monitoring, if the automatic recovery function has been turned on, monitoring can be resumed simply by reconnecting the cable.
Also, if the unit does not function properly even though the twisted pair cable is firmly connected to the terminal base, the cable may have been wired incorrectly.

If this happens, run the MNET/B self-test and the test between stations to pinpoint the problem, and correct the wiring.
For testing procedures with the MNET (II) and MNET/B, please refer to the reference manual for the data link system.

12.12 Checking the Switch Settings for the Network Unit

If the wrong settings are entered for the switches on the network unit, data cannot be transferred correctly between the unit and the MNET/10.
For information on checking the network unit switch settings, please refer to the user's manual for the pertinent network unit, and make sure the settings have been entered correctly.

12.13 Checking the Operation Environment Settings for the Network System

Check the items listed below.
Also, for detailed information on the MNET/10, check the reference manual for the network system, and make sure the settings have been entered correctly.

* Check the LED displays for other stations of the MNET/10, as well as the mode setting switches and the station number setting switches.
* Using the peripheral equipment for the GPP function, monitor the link status of the MNET/10 (monitor the special relays for the links and the special registers for the links, as well as the links).

12.14 Checking the Connections between the GOT and MNET/10

There are two ways to connect the GOT to a network system: the optical loop system and the coaxial bus system. The items to be checked for each system are listed below.

1   **Optical loop system**

* For an optical loop system, the network unit and PC CPU are connected by means of an optical cable in a loop format, so make sure the connector of the cable is firmly connected.
* The cable length and cable bend radius are limited depending on the type of optical cable being used, so make sure the wiring is within the restrictions.
(If the cable comes off during monitoring, monitoring can be resumed simply by reconnecting the optical loop cable.)

2   **Coaxial bus system**

* The network unit and PC CPU are connected by means of a coaxial cable in a bus format, so make sure the coaxial cable is firmly connected.
* If a G controller unit is connected as the terminal unit in the coaxial bus system, connect a terminal resistor to the network unit.
* The length of a cable between two stations is limited by the total number of stations, and the cable bend radius is limited depending on the type of coaxial cable being used, so make sure the wiring is within the restrictions.
(If the cable comes off during monitoring, monitoring can be resumed simply by reconnecting the coaxial cable.)

After the above items have been checked, run the main/sub loop test and the test between stations, to pinpoint the location of the problem.
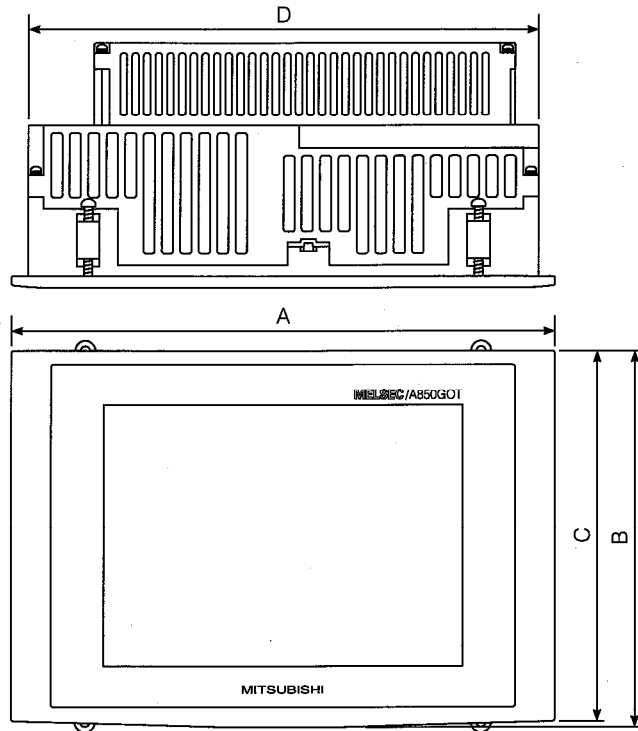For testing procedures with the network system, please refer to the reference manual for the network system.

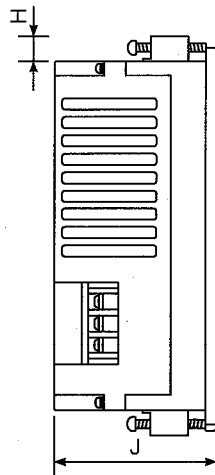## 12.15 Adjusting the Brightness of the Backlight

If the screen display is too faint on GOT, the brightness of the backlights can be adjusted using the GOT utility functions (see Section 7.3).

Appendix

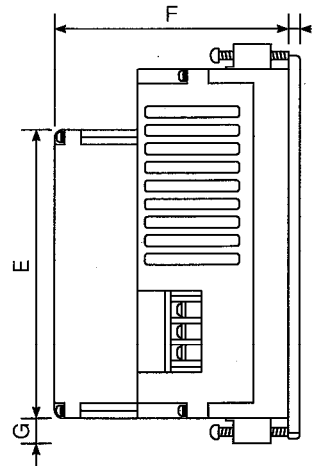## Appendix 1. Diagram of External Dimensions

With no communications unit installed   With communications unit installed

• Dimensions   (Unit: mm)

A	B	C	D	E	F	G	H	I	J
192	135	132	183	123	90	7.5	4.5	6	62

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.

A850GOT Graphic Operation Terminal

User's Manual

MODEL	A850GOT-U-E
MODEL CODE	13J847
IB(NA)-66669-B(0202)MEE	

MITSUBISHI ELECTRIC CORPORATION

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

Specifications subject to change without notice.