MITSUBISHI

A7GT-BUS2 Multiple Drop Bus Connection Interface Unit

Mitsubishi General Use PC
User's Manual

Thank you for choosing the Mitsubishi MELSEC Graphics Operation Terminal 800 Series of General Purpose Programmable Controllers. To ensure correct use of this equipment, please read this manual and the following detailed manuals carefully before operating it.

GOT MELSEC

Related Manuals

The following manuals are available for this equipment. Refer to the table given below to choose suitable manuals.

Detailed Manuals

Manual Name	Manual No. (Type Code)
User's Manual for the A77GOT-S5 Graphics Operation Terminal	IB-66548-A (13JE88)
User's Manual for the A870 GOT Graphics Operation Terminal or Additional User's Manual for the A870GOT (System configuration for connecting with BUS)	IB-66628 (13J 830)

Model Name	A7GT-BUS2-U-E
Model Name Code	13J849

● Precautions Regarding Safety ●
(Please read carefully before using your equipment)

When using this product, please read the manuals that are supplied with each of the products, as well as any related manuals available as supplementary manuals. Make sure careful attention is paid to safety, and that the equipment is handled correctly.

In this manual, safety precautions concerning more hazardous items are labeled "DANGER", and those concerning more general safety items are labeled "CAUTION".

> ⚠ **DANGER:** Improper handling could cause hazardous conditions resulting in severe injury or death.
>
> ⚠ **CAUTION:** Improper handling could cause hazardous conditions resulting in moderate or light injury, or in physical damage.

Items marked with an exclamation point in a triangle ⚠ could also cause severe consequences, depending on the circumstances, if not handled properly. They indicate information that should be taken seriously and observed conscientiously.

Manuals supplied with the products should be stored carefully where they can be accessed whenever necessary, and should always be passed on to the end user along with the equipment.

▨ 1. Overview ▨

This user manual explains the installation method, component names, and switch settings for the model A7GT-BUS2 multiple drop bus connection interface unit (hereafter abbreviated as BUS2 connection unit).
The BUS2 connection unit is used to connect multiple units of the model A77GOT-S5/A870GOT graphics operation terminal (hereafter abbreviated as GOT).
Using this unit makes it possible to connect a maximum of 3 GOT units. In addition, the addition extension distance can be increased to a maximum of 30 m(98.43 ft.).
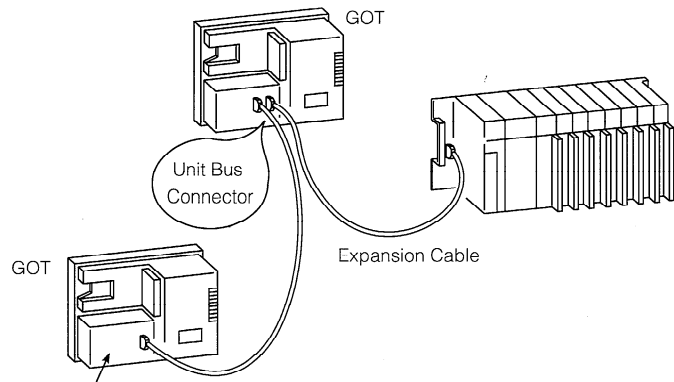
The A7GT-BUS, which is the last unit to be connected, should be Version C or later.

For details regarding the basic or extension based unit and the GOT system configuration, refer to the model A870GOT graphics operation terminal user's manual.

1.1 Related Manual
- A77GOT-S5 Graphics Operation Terminal User's Manual
  IB-66548 (13JE88)
- A870GOT Graphics Operation Terminal User's Manual
  IB-66628 (13J830)

▨ 2. System Configuration ▨

2.1 Connectable Basic Base Unit and Expansion Base Unit

The GOT + BUS2 connection unit and the connectable basic base and extension base unit are shown below.

	Base Model Name	Connection Cable
Basic Base Unit	A32B	Connection Not Possible
	A36B / A38B	AC06/12/30/50B AC12/30/50B-R A7GT-C100/200/300EXS
	A1S32B A1S33B A1S35B A1S38B A1SJCPU (Basic Base Main Unit)	A1SC05/07/30/50NB A7GT-C100/200/300EXS
Extension Base Unit	A62B A65B A68B A52B A55B A58B	AC06/12/30/50B AC12/30/50B-R A7GT-C100/200/300EXS

(1) For details regarding connectable cables, refer to the model A870GOT graphics operation terminal user's manual.

(2) When the total extension length exceeds 6.6 m(21.65 ft.), use a bus connector conversion box to make the extension as shown in the following diagram. (large type only)
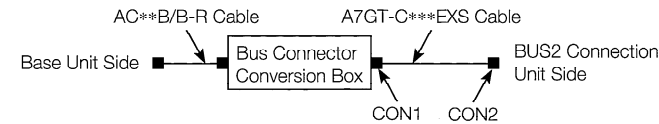

2.2 Connection Cable When Multiple GOT Are Connected

When connecting 2 to 3 GOT units, the connection cable between the GOT units is shown below.

For the large type, the number of GOT units that can be connected within a total distance of 6.6 m(21.65 ft.) is shown.

For the small type, the number of GOT units that can be connected within a total extension distance of 6 m(19.69 ft.) is shown.
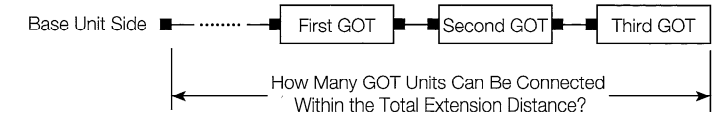
Number of GOT Units Connected		Two Units			Three Units		
Number of GOT Units Within the Addition Total Extension Length		2	1	0	3	2	1
Connection Between the First and Second Unit	AC∗∗B/AC∗∗B-R	○	△	△	○	○	△
	A7GT-C∗∗B	×	△	△	×	×	△
Second Unit	A7GT-BUS(Version C or Later)	△	△	△	×	×	×
	A7GT-BUS2	△	△	△	○	○	○
Connection Between the Second and Third Units	AC∗∗B/AC∗∗∗B-R				○	△	△
	A7GT-C∗∗B				×	△	△
Third Unit	A7GT-BUS(Version C or Later)				△	△	△
	A7GT-BUS2				△	△	△

○ : Required   △ : Use Either One   × : Cannot Be Used

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(1) When multiple GOT units are connected, be sure to connect the first unit to the BUS2 connection unit.
(2) When three units are connected, be sure that the first GOT unit is connected within the maximum addition extension length distance.
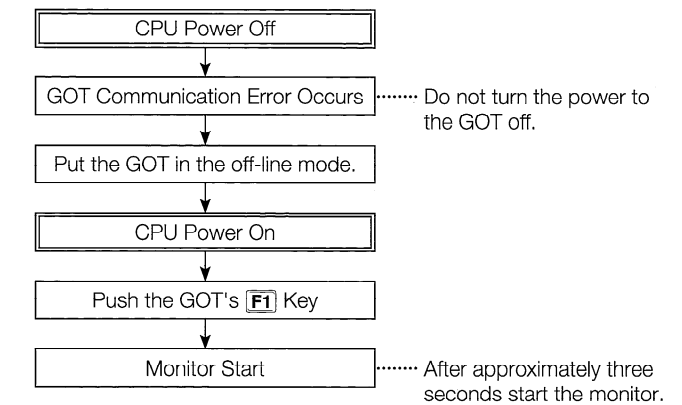
Maximum Addition Extension Length Distance
{ Large Type..........6.6 m(21.65 ft.)
{ Small Size Type...6 m(19.69 ft.)

Point

When the GOT (bus connection unit) and the CPU's power is on, take the following precautions.

(a) Be sure to turn the power on at the same time for the CPU and the GOT (bus connection unit) or turn the power on in the order of CPU then GOT (bus connection unit). If the GOT (bus connection unit) power is turned on before the power of the CPU, it will not function correctly.
In addition, when turning the CPU's power on first, the CPU will run after the power to all the GOT units is turned on.

(b) When the power to the CPU and the GOT (bus connection unit) is on, turning the power to the CPU off will cause a communication error in the GOT. When a communication error occurs, follow the operation shown below to restart the monitor.

For A77GOT-S5

| CPU Power Off |
| GOT Communication Error Occurs | ···· Do not turn the power to the GOT off.
| Put the GOT in the off-line mode. |
| CPU Power On |
| Push the GOT's F1 Key |
| Monitor Start | ···· After approximately three seconds start the monitor.

For A870GOT

When a communication error occurs, turn the power to the GOT off and turn the power on to the PC CPU and GOT using the following method.
① Turn the power on to the PC CPU and the GOT at the same time.
② Turn the power on in the order of first PC CPU and then GOT. In this case, the PC CPU will run after the power is turned on to the GOT.

(c) During monitoring the CPU will not shut down even if the GOT's power is turned off.

3. Name and Settings of Each Component

This unit explains the bus connection unit's component names and settings.

(Side View)   (Front View)

(Back View)
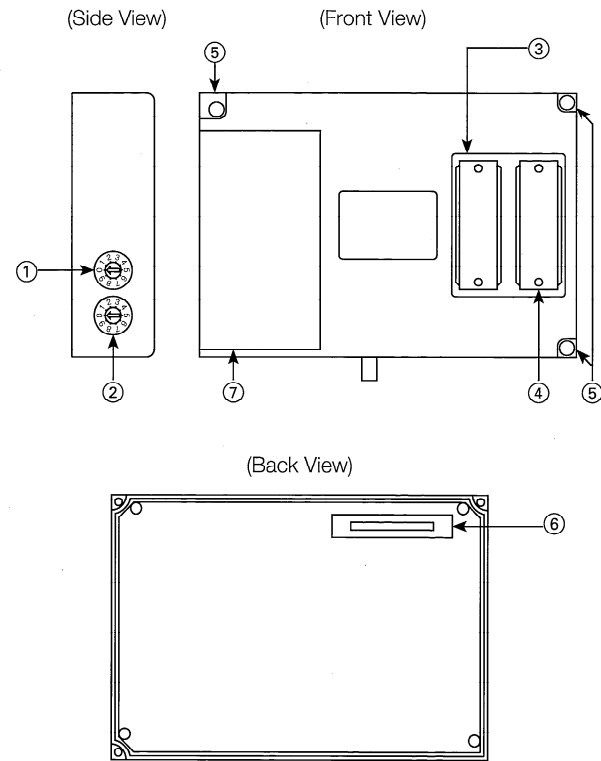
No.	Name	Description
①	Addition Step Switch	Sets the number of expansion steps allotted to the GOT. (Setting at time of shipment : 0) Setting Range 1 to 7 : Number of Expansion Stages 8, 9, 0 : Disabled
②	I/O Slot Switch	Sets the I/O slot No. allotted to the GOT. (Setting at time of shipment : 0) Setting Range 0 to 7 : I/O slot No. 8, 9 : Disabled
③	Expansion Cable Connection Interface	Basic Base and Expansion Base Unit Connection Interface
④	Expansion Cable Connection Interface	Connection Interface For GOT Expansion
⑤	Unit Fastener Screw	Fastener Screws for GOT
⑥	Connection Connector	Connection Connector for GOT
⑦	Specifications Plate	

* For information regarding the unit setting switch and I/O slot setting switch settings method refer to the A77GOT-S5 User's manual and the A870GOT user's manual.
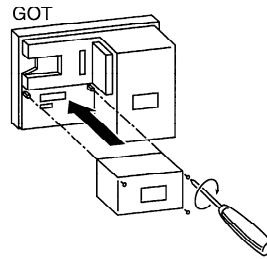
4. Installation

The procedure for installing and removing the GOT is shown below.

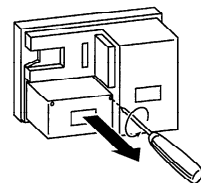Turn the power to the GOT off before installing or removing the GOT.

(Installation)
(1) Insert following the screw guide to the GOT's installation area.
(2) Correctly install and tighten unit's fastener screws (3 screws).

(Removal)
(1) Remove the unit's fastener screws (3 screws) and pull out.
(2) Store carefully after removal.

4.1 Screw tightening torque

Tighten the unit fastener screws, terminal screws etc. within the ranges shown below.

| Screw Location	Tightening Torque Range
Unit Fastener Screw and Terminal Screws	36 ~ 48N·cm(3.7~4.9kg·cm) (0.26 ~ 0.35 ft. lb)

5. Handling

⚠ CAUTION

● Communications cables should not be bundled with main circuits and power lines, or installed in the vicinity of these. As a rule, there should be at least 100 mm(3.28 ft.) of space between communications cables and main circuits or power lines, as noise can cause malfunctioning.

● The Graphic Operation Terminal should be used under the environmental conditions listed under the general specifications in the manual. Using it under any other environmental conditions could cause problems such as electrical shock, fire, malfunctioning, and damage to or deterioration of the product.

● Install by inserting following the screw guide to the GOT's installation area and correctly install the unit's fastener screws.

Not correctly installing the unit could result in malfunction, trouble, or the unit falling.

● The communications cable should be connected securely to the connector on the communications unit. Defective contact could cause input and output errors.

● Turn off the power to the CPU and the GOT when installing and removing expansion cables. Not doing so can result in trouble and malfunction.

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

● Never disassemble or renovate the unit. This could cause breakdowns, malfunctioning, injury, and/or fire.

● Always turn off the power supply before attaching or detaching the unit. Doing this while conductivity is being supplied could cause the unit to break down, or could cause malfunctioning.

● When discarding this product, it should be handled as an industrial discard.

● The unit is made of plastic so do not drop it or forcefully strike it.
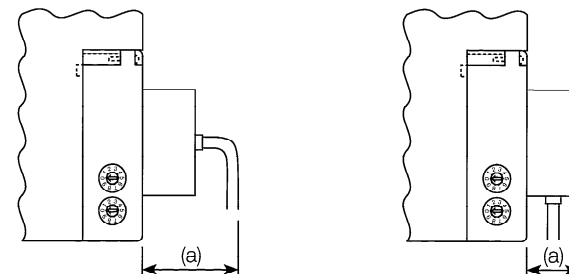
6. External Dimension Diagram

6.1 External Dimension Diagram   Units : mm (in.)

149 (5.87)
142.5 (5.61)
99 (3.90)
92.5 (3.64)
34 (1.34)
108.91 (4.29)
22.86 (0.9)
A77GOT/A870GOT
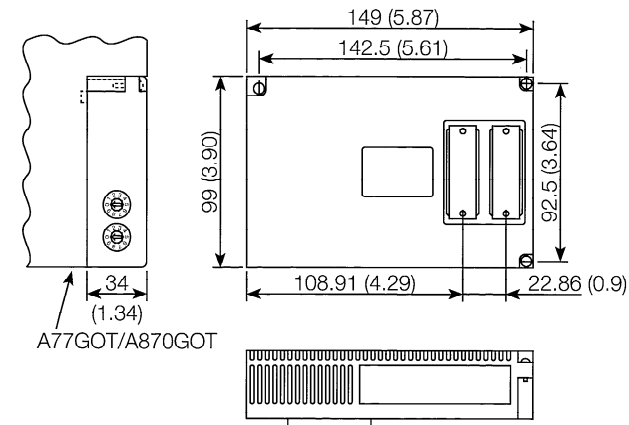
6.2 Back View Dimension Diagram When Expansion Cable Is Connected

① For Straight Type Connectors   ② For Right Angle Type Connectors

(a)   (a)

Cable Model Name	①-(a)
AC06/12/30/50B	140 (5.51)
A1SC05/07/30/50B	120 (4.72)
A7GT-C100/200/300EXS	

Cable Model Name	②-(a)
AC12/30/50B-R	40 (1.57)

③ For Straight Type Connectors

(a)   (a)
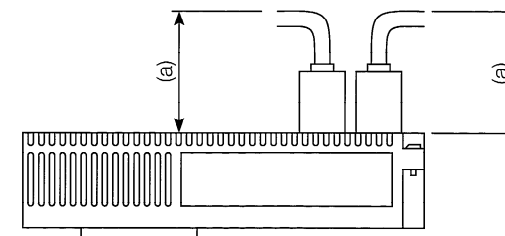
When For Connections Between GOT Units

Cable Model Name	③-(a)
AC06/12/30/50B	140 (5.51)
A7GT-C100/200B	

④ For Right Angle Type Connectors

(a)   (a)
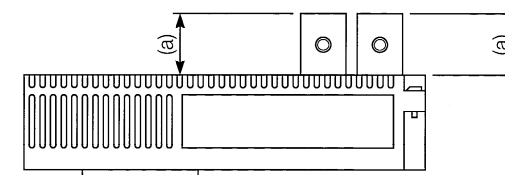
For Connection Between GOT Units

Cable Model Name	④-(a)
AC12/30/50B-R	40 (1.57)