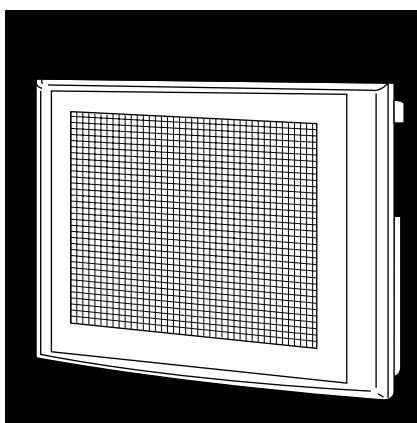# MITSUBISHI

A8GT-J61BT13 Type CC-Link Communication Module

User's Manual

GRAPHIC OPERATION TERMINAL

800/900
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 faults of this module may keep the outputs on or off. An external monitoring circuit should therefore be provided to check for output signals which may lead to a serious accident.
  Not doing so can cause an accident due to mis-output or misoperation.
- If a communication error (including cable disconnection) occurs during monitoring with the GOT, communication between the GOT and master station is interrupted, disabling operation.
  When using the GOT to configure a system, assume that a GOT communication error will occur and configure a system in which switches used to perform significant operation for the system are provided on any device other than the GOT.
  Not doing so can cause an accident due to mis-output or misoperation.

△ CAUTION

- Do not bundle control lines or communication cables with the main circuit, power or other lines or lay them near these lines.
  As a guideline, separate the cables at least 100mm(3.94inch).
  Not doing so can cause misoperation due to noise.

[Mounting Precautions]

◇ DANGER

- Before mounting or dismounting the module to or from the GOT, always switch off GOT power externally in all phases.
  Not doing so can cause a module failure or misoperation.

⚠ CAUTION

- Use this module in an environment that conforms to the general specifications given in the GOT user's manual.
  Not doing so can cause an electric shock, fire, misoperation, or product damage or deterioration.
- When mounting the module to the GOT, tighten the module fixing screws within the specified torque range.
  Undertightening can cause a drop, short circuit or misoperation.
  Overtightening can cause a drop, short circuit or misoperation due to damaged screws or module.

[Wiring Precautions]

◇ DANGER

- Before starting wiring work, always switch GOT power off externally in all phases.
  Not doing so can cause an electric shock, product damage or misoperation.

⚠ CAUTION

- When switching power on or starting operation after mounting, wiring or other work, always fit the terminal cover supplied to the product.
  Not doing so can cause an electric shock, short circuit or failure.
- Always ground the FG terminal of the GOT power supply and the FG1 termial of this module to the protective ground conducter.
  Be sure to ground the GOT and this module separately.
  Not doing so may cause an electric shock or misoperation.
- Before wiring the module, confirm the rated voltage and terminal arrangement of the product.
  A fire or failure can occur if the power supply connected is different from the rating or wiring is incorrect.
- Tighten the terminal screws within the specified torque range.
  Undertightening can cause a short circuit or misoperation.
  Overtightening can cause a short circuit or misoperation due to damaged screws or module.
- Ensure that foreign matters such as chips and wire off-cuts do not enter the module.
  They can cause a fire, failure or misoperation.

[Wiring Precautions]

◇ **CAUTION**

- Always secure the communication cables connected to the module, e.g. run them in conduits or clamp them.
  Not doing so can damage the module or cables due to dangling, moved or accidentally pulled cables or can cause misoperation due to cable contact fault.
- Do not hold the cable part when unplugging the communication cable connected to the module.
  Disconnect the cable after loosening the screw in the part connected to the module.
  If you pull the cable connected to the module, the module or cable can be damaged or misoperation can occur due to cable connection fault.

[Test Operation Precautions]

◇ **DANGER**

- Do not output (switch on) any reserved signal among the output signals provided from the master module to the GOT.
  Doing so can cause the PLC system to misoperate.

[Startup/Maintenance Precautions]

◇ **DANGER**

- Do not touch the terminals while power is on.
  Doing so can cause an electric shock or misoperation.
- Before starting cleaning or terminal screw retightening, always switch power off externally in all phases.
  Not doing so can cause a module failure or misoperation.
  Undertightening can cause a drop, short circuit or misoperation.
  Overtightening can cause a drop, short circuit or misoperation due to damaged screws or module.

⚠ **CAUTION**

- Do not disassemble or modify the module.
  Doing so can cause a failure, misoperation, injury or fire.
- Do not touch the conductive areas and electronic parts of the module.
  Doing so can cause the module to misoperate or fail.
- Do not change any switch setting while power is on.
  Doing so can cause a failure or misoperation.
- The module is made of resin. Do not drop it or subject it to strong impact.
  Doing so can damage the module.

- Always make sure to touch the grounded metal to discharge the electricity charged in the body, etc., before touching the module.
  Failure to do so may cause a failure or malfunctions of the module.

[Disposal Precautions]

⚠ CAUTION

- When disposing of the product, treat it as industrial waste.

REVISIONS

Print Date	* Manual Number	Revision
Mar., 1998	IB (NA) 66838-A	First edition
Jun., 2001	IB (NA) 66838-B	• The manual layout was rearranged. Models added GOT-A900 Series
Jun., 2003	IB (NA) 66838-C	Partial corrections Appendix 2 Partial additions Section 2.2, Section 3.2, Section 4.1, Section 5.1, Section 6.3, Chapter 7
Jun., 2004	IB (NA) 66838-D	Partial corrections SAFETY PRECAUTIONS, About manuals MODEL CODE change Changed from 13JL56 to 1DM072

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

About Manuals

The following manuals are also related to this product.

In necessary, order them by quoting the details in the tables below.

Related Manuals

Manual Name	Manual Number (Model Code)
CC-Link System Master • Local Module type AJ61BT11/A1SJ61BT11 User's Manual Describes the system configuration, performance specifications, functions, handling, wiring and trouble- shooting of the AJ61BT11 and A1SJ61BT11. (Option)	IB-66721 (13J872)
CC-Link System Master • Local Module type AJ61QBT11/A1SJ61QBT11 User's Manual Describes the system configuration, performance specifications, functions, handling, wiring and trouble- shooting of the AJ61QB11 and A1SJ61QBT11. (Option)	IB-66722 (13J873)
CC-Link System Master • Local Module type QJ61BT11 User's Manual Describes the system configuration, performance specifications, functions, handling, wiring and troubleshooting of the QJ61BT11 (Option)	SH-080016 (13JL91)
A985GOT/A975GOT/A970GOT/A960GOT User's Manual Explains the specifications, general system configuration, component devices, part names, option unit loading methods, installation and wiring methods, maintenance and inspection methods, and error codes of A985GOT/A975GOT/A970GOT/A960GOT unit. (Option)	SH-4005 (1DM099)
A950GOT/A951GOT/A953GOT/A956GOT User's Manual Explains the specifications, general system configuration, component devices, part names, option unit loading methods, installation and wiring methods, maintenance and inspection methods, and error codes of A950GOT/A951GOT/A953GOT/A956GOT unit. (Option)	SH-080018 (1DM103)
A870GOT Graphic Operation Terminal User's Manual This manual describes the specifications and performance of the A870GOT main unit as well as the hardware configuration, procedures for installing optional units, operation in off-line mode, error codes, and troubleshooting guidelines. (Option)	IB-66628 (1DM050)
A850GOT Graphic Operation Terminal User's Manual This manual describes the specifications and performance of the A850GOT main unit as well as the hardware configuration, procedures for installing optional units, operation in off-line mode, error codes, and troubleshooting guidelines. (Option)	IB-66669 (1DM038)
GT Designer2 Version1 Operating Manual Describes methods of operating GT Designer2 and transmitting data to GOT. (Option)	SH-080278E (1DM205)
GT Designer2 Version1 Reference Manual Describes the specifications and settings of each object function used in GT Designer2 (Option)	SH-080251 (1DM204)
GOT-A900 Series Operating Manual (GT Works2 Version1/GT Designer2 Version1 compatible Extended • Option Functions Manual) Provides the specifications of the utility, system monitoring, ladder monitoring, special function unit monitoring, network monitoring functions and list editor functions available for the GOT-A900 series and how to operate the dedicated monitor screen. (Option)	SH-080118 (1DM185)

Manual Name	Manual Number (Model Code)
GOT-A900 Series User's Manual (GT Works2 Version1/GT Designer2 Version1 compatible Connection System Manual) Gives the specifications, system configuration, setting method and connection diagram of each connection form available for the GOT-A900 series. (Option)	SH-080119 (1DM189)
GT Works Version 5/GT Designer Version 5 Reference Manual Deals with the system configuration of GT Works Version 5/GT Designer Version 5, the screen makeup of the GT Designer, the general description of various monitoring functions, the procedure for displaying the monitor screen on the GOT, and how to use the help function. (Option)	SH-080117 (1DM187)
GOT-A900 Series Operating Manual (GT Works Version 5/GT Designer Version 5 compatible Extended • Option Functions Manual) Provides the specifications of the utility, system monitoring, ladder monitoring, special function unit monitoring, network monitoring functions and list editor functions available for the GOT-A900 series and how to operate the dedicated monitor screen. (Option)	SH-080118 (1DM185)
GOT-A900 Series User's Manual (GT Works Version 5/GT Designer Version 5 compatible Connection System Manual) Gives the specifications, system configuration, setting method and connection diagram of each connection form available for the GOT-A900 series. (Option)	SH-080119 (1DM189)
SW3NIW-A8GOTP Graphic Settings Software Package Operating Manual (Monitor Screen Creation Manual) This manual describes how to create monitor screens, the monitor functions available for the GOT, how to set the monitor functions, precautions for creating monitor screens, and precautions for utilizing the monitor data of the conventional GOT. (Option)	IB-66793 (1DM176)

SW3NIW-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 GOT and uploading it from the GOT.
    2) Procedures for installing the operating system in the GOT.
    3) Procedures for using the A8GOTP as a virtual programmable controller and for debugging the GOT.
    4) Procedures for outputting created monitor data as a completed document   (Option)
	IB-66794 (1DM175)

GOT800 Series Operating Manual (Expanded Functions Manual) This manual describes the operation procedures for using the system monitor functions, monitor functions for special function units, and the dedicated monitor screens used with the ladder monitor functions. (Option)	IB-66796 (1DM181)
Type SW2IVD-GPPQ GPP Software package OPERATING MANUAL(Offline) Describes the offline functions, such as the programming method, printout method and file maintenance, of the SW2IVD-GPPQ (Option)	IB-66774 (13J921)
GX Developer Version 6 Operating Manual Describes the online functions of GX Developer including the programming procedure, printing out procedure, monitoring procedure, and debugging procedure. (Option)	SH-080098 (13J989)

Conformation to the EMC Directive

A8GT-J61BT13 conforms to the EMC Directive only when connected to the GOT (with CE logo printed on the rating plate) which conforms to the EMC Directive. For details of Conformation to the EMC Directive, refer to the using GOT User's Manual (Hardware).

Abbreviations and generic terms in this manual

The following addreviations and symbols are used in this manual.

Abbreviation/Generic Name/Term		Description
CC-Link		Abbreviation for the Control & Communication Link system
CC-Link communication module	A8GT-J61BT13	Abbreviation of A8GT-J61BT13 type CC-Link communication module
	A8GT-J61BT15	Abbreviation of A8GT-J61BT15 type CC-Link communication module
GOT-A900 Series	A985GOT-V	Generic term of A985GOT-TBA-V and A985GOT-TBD-V
	A985GOT	Generic term of A985GOT-TBA, A985GOT-TBD and A985GOT-TBA-EU
	A975GOT	Generic term of A975GOT-TBA-B, A975GOT-TBD-B, A975GOT-TBA, A975GOT-TBD and A975GOT-TBA-EU
	A970GOT	Generic term of A970GOT-TBA-B A970GOT-TBD-B, A970GOT-TBA, A970GOT-TBD, A970GOT-SBA, A970GOT-SBD, A970GOT-LBA, A970GOT-LBD, A970GOT-TBA-EU and A970GOT-SBA-EU
	A97*GOT	Generic term of A975GOT and A970GOT
	A960GOT	Generic term of A960GOT-EBA, A960GOT-EBD and A960GOT-EBA-EU
	A956GOT	Generic term of A956GOT-TBD, A956GOT-SBD, A956GOT-LBD, A956GOT-TBD-M3, A956GOT-SBD-M3 and A956GOT-LBD-M3
	A956WGOT	Abbreviation of A956WGOT-TBD
GOT800 Series	A870GOT	Generic term of A8GT-70GOT-EW, A8GT-70GOT-EB, A8GT-70GOT-SW, A8GT-70GOT-SB, A8GT-70GOT-TW, A8GT-70GOT-TB
	A810GOT	Abbreviation of A8GT-10GOT-C
	A850GOT	Abbreviation of A850GOT-LWD, A850GOT-LBD, A850GOT-SWD, A850GOT-SBD, A850GOT-LWD-M3, A850GOT-LBD-M3, A850GOT-SWD-M3, A850GOT-SBD-M3
Software	GT Works2 Version1	Generic term of SW1D5C-GTWK2-E
	GT Designer2 Version1	Generic term of SW1D5C-GTD2-E
	GT Works Version 5	Abbreviation of SW5D5C-GTWORKS-E software package
	GT Designer Version 5	Generic term of SW5D5C-GOTR-PACKE software package and SW5D5C-GOTR-PACKEV software package
	GX Developer	Generic term of SW☐D5C-GPPW-E/SW☐D5F-GPPW-E software packages
Drawing Software	GT Designer2	Abbreviation of image creation software GT Designer2 for GOT900
	GT Designer	Abbreviation of image creation software GT Designer for GOT900
	SW☐NIW-A8GOTP	Abbreviation of SW☐NIW-A8GOTP software package
Personal computer		Personal computer where the corresponding software package is installed
Master station		Station which controls intelligent device, Local and Remote stations
Local station		Station which has a CPU and can communicate with the Master and other Local stations
Remote I/O station		Slave station in the CC-Link system which can handle bit data only
Remote device station		Slave station in the CC-Link system which can handle bit data and word data
Remote station		Generic name for remote I/O and remote device stations
Intelligent device station		Slave station in the CC-Link system which can make transient transmission, such as the A8GT-J61BT13
Master/local module		Generic name for the QJ61BT11, AJ61BT11, AJ61QBT11, A1SJ61BT11 and A1SJ61QBT11
Master module		Generic name for the QJ61BT11, AJ61BT11, AJ61QBT11, A1SJ61BT11 and A1SJ61QBT11 when used as the Master station
Local module		Generic name for the QJ61BT11, AJ61BT11, AJ61QBT11, A1SJ61BT11 and A1SJ61QBT11 when used as Local stations
Cyclic transmission		Transmission method in which the contents of the remote inputs/outputs and remote registers are updated periodically
Transient transmission		Transmission method in which communication is made at any timing
RX		Remote input
RY		Remote output
RWw		Remote register (write area)
RWr		Remote register (read area)

1. OVERVIEW

This user's manual includes specifications, monitoring method, handling information, programming method and other instructions of the A8GT-J61BT13 CC-Link communication module (hereinafter referred to as the "A8GT-J61BT13") used in the Control Communication Link (hereinafter referred to as "CC-Link") system.

By connecting the A8GT-J61BT13 module to the GOT, it can perform a monitoring operation as an intelligent device station (the number of occupied stations may be selected between 1 and 4) in the CC-Link system.
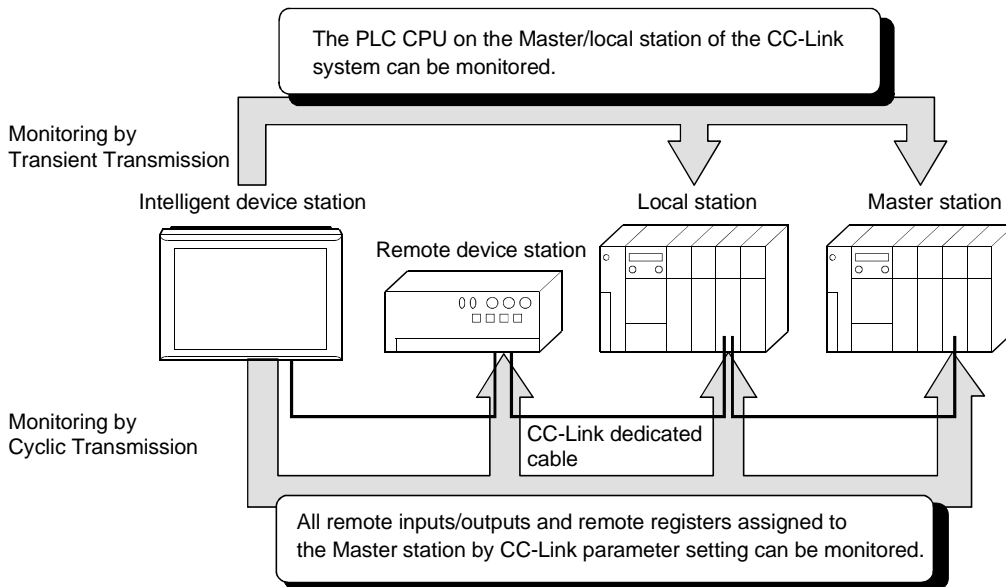
(1) PLC CPU that allows monitoring

Note that the types of the CPUs that can be monitored are different, depending on the GOT used.

The following table lists the types of the CPUs that can be monitored.

○ : Can be monitored   × : Cannot be monitored

CPU Connected TO		When the GOT-A900 Series is used	When the GOT800 Series is used
QCPU	(Q mode)	○	×
	(A mode)	○	○
QnACPU		○	○
ACPU		○	○
Motion controller		○	○

1

(2) Difference between the A8GT-J61BT13 and the A8GT-J61BT15

There are differences in the monitoring methods that can be used as well as the devices that can be monitored between the A8GT-J61BT13 and the A8GT-J61BT15.

The following table lists these differences between the A8GT-J61BT13 and the A8GT-J61BT15.

○ : Usable   × : Unusable

Item		When the A8GT-J61BT13 is used	When the A8GT-J61BT15 is used
Monitoring methods	Monitoring by Cyclic Transmission	○	○
	Monitoring by Transient Transmission	○	×
Devices that can be monitored	The GOT's remote inputs/outputs and remote registers assigned to the Master station.	○	○
	All remote inputs/outputs and remote registers assigned to the Master station.	○	×

2. SYSTEM CONFIGURATION

This chapter describes the system configuration of the whole CC-Link system where the A8GT-J61BT13 is used.

For equipment required for the GOT, refer to the user's manual of the GOT used.

2.1 Overall Configuration

The following diagram shows the overall configuration for use of the A8GT-J61BT13. Up to 26 GOTs using the A8GT-J61BT13 may be connected in relation to one master module.

CC-Link Master/local module (Master station)

CC-Link Master/local module (Local station)

Terminal resistor

CC-Link dedicated cable

(Remote device station)

(Remote I/O station)

The number of occupied stations may be selected between 1 and 4.
Remote inputs/outputs 32/128 points each
Remote registers   4/16 points each

Terminal resistor

GOT + A8GT-J61BT13
(Intelligent device station)

(Remote device station)

2.2 Instructions for System Configuration

When using the A8GT-J61BT13, follow these system configuration instructions.

(1) GOTs which can use the A8GT-J61BT13

The following GOT models can use the A8GT-J61BT13.

Name	Model
A985GOT-V	A985GOT-TBA-V, A985GOT-TBD-V
A985GOT	A985GOT-TBA, A985GOT-TBD
A975GOT	A975GOT-TBA(-B), A975GOT-TBD(-B)
A970GOT	A970GOT-TBA(-B), A970GOT-TBD(-B), A970GOT-SBA, A970GOT-SBD, A970GOT-LBA, A970GOT-LBD
A960GOT	A960GOT-EBA, A960GOT-EBD
A956WGOT	A956WGOT-TBD
A956GOT	A956GOT-TBD(-M3), A956GOT-SBD(-M3), A956GOT-LBD(-M3)
A870GOT	A8GT-70GOT-EW,A8GT-70GOT-EB,A8GT-70GOT-SW,A8GT-70GOT-SB, A8GT-70GOT-TW,A8GT-70GOT-TB
A850GOT	A850GOT-LWD(-M3),A850GOT-LBD(-M3),A850GOT-SWD(-M3), A850GOT-SBD(-M3)

(2) Compatible software version

When creating the GOT screen or installing the operating system (OS), always use the following software versions.

(a) GOT-A900 Series (Use either of the followings.)
GT Works2 Version1 software version 00A or later
GT Designer2 Version1 software version 00A or later
SW0D5C-GTWORKS-E software version A or later
SW1D5C-GOTRE-PACK software version A or later

(b) GOT800 Series
Graphics software: SW3NIW-A8GOTP software version E or later
OS program: SW3NIW-A8SYSP software version E or later
Special module monitor data: SW3NIW-A8GMDP

The software version can be confirmed on the rating plate of the floppy disk of the product.

SW☐NIW-A8☐☐☐P
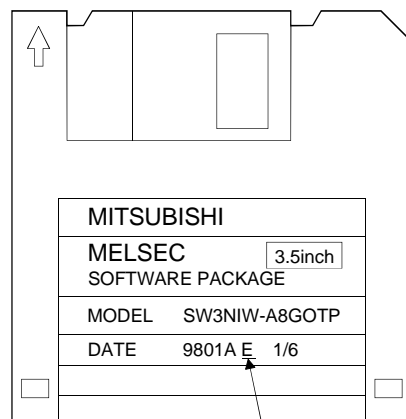
GT Works2 Version1, GT Designer2 Version1
SW☐D5C-GTWORKS-E, SW☐D5C-GOTR-PACKE

MITSUBISHI

MELSEC   3.5inch
SOFTWARE PACKAGE

MODEL   SW3NIW-A8GOTP

DATE   9801A E   1/6

Indicates the software version.

DATE
9806A A
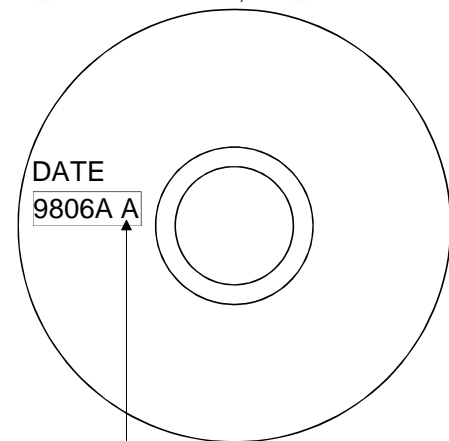
Indicates the software version.

(3) Communication Driver Installed in the GOT

Install the following communication driver in the GOT.

CC-Link communication unit Used	Driver to Be Installed
A8GT-J61BT13	CC-LINK (ID)

(4) Master/local module which can use the GOT loaded with the A8GT-J61BT13

(a) QJ61BT11

The QJ61BT11 is supported by function version A.

(b) AJ61(Q) BT11/A1SJ61(Q)BT11

The GOT loaded with the A8GT-J61BT13 may be used with the Master/local module whose function version is B (Dec. 1997) or later and whose software version is J (Jan. 1998) or later.

The GOT cannot be used with the Master/local module whose function and software note that monitoring by cyclic transmission may only be performed when the version of the module used are earlier than the above.

The function version is indicated in the DATE field of the rating plate.

∗ The function version is only indicated on version B or later.
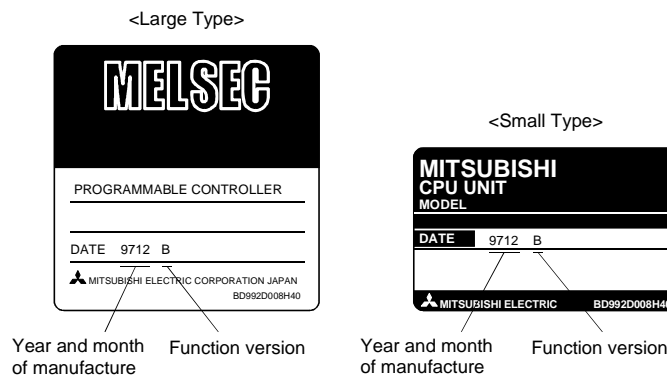
The software version is indicated on the module version seal on the module front.
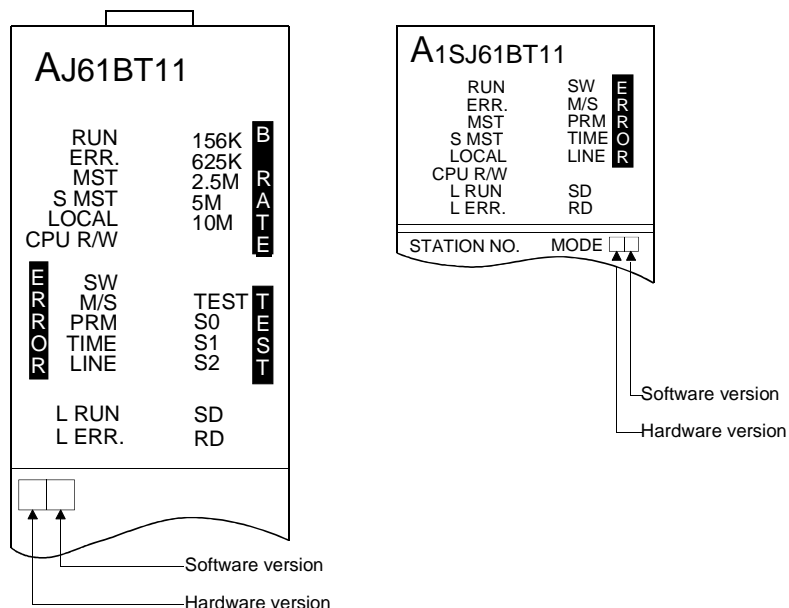
(5) Utility function

The following table lists the GOT's utility functions that can be used when the A8GT-J61BT13 is in use.

○ : Usable

Item		When the A8GT-J61BT13 is used
Utility function	Brightness/contrast adjustment	○
	Screen & OS copy	○
	Setup	○
	Self-test	○＊
	Memory information	○
	Clock	○
	Screen cleanup	○
	Password	○

＊: CPU communications check of the self-test function cannot be performed when the GOT800 Series are in use.

(6) Extended•option functions

Refer to the manuals listed in the table below for the GOT's extended • option functions that can be used when the A8GT-J61BT13 is in use.

GOT Used	Manuals to refer to
GOT-A900 Series	GOT-A900 Series Operating Manual (Extended•Option Functions Manual)
GOT800 Series	GOT800 Series Operating Manual (Expended Functions Manual)

3. SPECIFICATIONS

This chapter provides the general and performance specifications and other information of the A8GT-J61BT13.

3.1 General Specifications

The general specifications of the A8GT-J61BT13 changes according to the GOT used. Refer to the user's manual of the GOT used.

3.2 Performance Specifications

The following table lists the performance specifications of the A8GT-J61BT13.

| Item		Specifications
CC-Link station type		Intelligent device station
Number of stations occupied		May be selected between 1 and 4. 1 station: RX/RY 32 points each＊1, RW write area 4 points each/read area all area 4 stations: RX/RY 128 points each＊1, RW write area 16 points each /read area all area
Monitor device	Monitoring by cyclic transmission	Write from GOT:RX,RWs assigned to the GOT (depending on the number of stations occupied(Refer to upper)) Read to GOT :RX/RY(2048 points),RWw/RWr(512points)
	Monitoring by transient transmission	All devices of the PLC CPU on the Master/local station.
Transmission speed		156kbps/625kbps/2.5Mbps/5Mbps/10Mbps
Max. transmission distance		Depends on the transmission speed.
Max. number of modules connected		26 The max. number of modules connected depends on the configuration of the CC-Link system to be used. For more details on the max. number of modules connected, refer to the CC-Link System Master-Local Module User's Manual.
Connection cable		CC-Link dedicated cable
Terminal block		8-pin terminal block (M3.5×8 screws)
Applicable cable size		0.75mm^2 to 2.00mm^2
Applicable crimping terminal		RAV1.25-3, RAV2-3.5 (conforming to JIS C2805)
Power supply voltage		5V (Supplied from GOT)

Current consumption		0.25A
		Included in the current consumption of the GOT:
		  A985GOT(-V), A975GOT, A970GOT, A960GOT, A956WGOT, A956GOT, A810GOT, A870GOT
		Added to the current consumption of the GOT:
		  A850GOT

Outline dimensions		99mm(3.9inch)(H)×149mm(5.85inch)(W) ×34mm(1.34 inch)(D)
Weight		0.21kg (0.46lb)

Compatible software package ＊2		GOT-A900 Series
		  GT Works2 Version1 Version 00A or later, GT Designer2 Version1 Version 00A or later
		  SW0D5C-GTWORKS-E Version A or later, SW0D5C-GOTRE-PACK Version A or later
		GOT800 Series
		  SW3NIW-A8GOTP Version E or later
		  SW3NIW-A8SYSP Version E or later
		  SW3NIW-A8GMDP

＊1   Each of the I/O signals (RX, RY) occupies 16 points of a system area within device points.
        For more details on the I/O signals, refer to Section 4.3.

＊2   Be sure to use a software package that supports the GOT to be used.
        For more information on the software packages that support the GOT, refer to the user's manual of the GOT to be used.

MEMO

3

4. MONITORING SPECIFICATION

4.1 Monitoring Overview

When the A8GT-J61BT13 is used, the GOT has the following two monitoring methods.

Monitoring Method	Monitoring by Transient Transmission	Monitoring by Cyclic Transmission
Contents	Devices of the PLC CPU on the CC-Link system Master/local station are specified and monitored.	Remote inputs/outputs and remote registers assigned to the Master station by CC-Link parameter setting are specified and monitored.
Advantage	CC-Link parameter setting sequence program＊2 is required but GOT communication sequence program＊2 is not needed. (For more information, refer to Chapter 5.)	Data communication processing speed＊1 is high.
Disadvantage	Data communication processing speed＊1 is lower than that of cyclic transmission.	•Write from the GOT (read command from the master station) can be performed to only the remote outputs and remote registers of the master station assigned to the GOT and to the GOT's internal registers. •GOT communication sequence program＊2 is necessary.

＊1 For details of the data communication processing speed (object display speed), refer to the GT Designer2 Version1 Reference Manual or GT Works Version 5/GT Designer Version 5 Reference Manual or SW3NIW-A8GOTP operating manual (monitor screen creation).

＊2 This program is not needed if the CC-Link parameter setting sequence program and GOT communication sequence program satisfy the following conditions.
- As the PLC CPU of the master station, use the QCPU (Q mode) or QnACPU whose number given in the DATE field of the rating plate is "9707B" or later.
- Use GX Developer or SW2 -GPPW and make CC-Link parameter setting and batch refresh device setting in the CC-Link setting on the package.
  For details of the setting methods, refer to the CC-Link System Master/Local Module User's Manual (Details).

POINT

In transient transmission, connection of several (five or more as a guideline) intelligent device stations (GOTs and intelligent device units) reduces data communication speed.

To raise data communication speed, increase the CC-Link system, for example, and do not connect five or more intelligent device stations to a single CC-Link system.

For more information on other methods for accelerating the data communication speed, refer to Section 7.3.

---

(1)   Monitoring by transient transmission
      The devices of the PLC CPU on the CC-Link system Master/local station are
      specified and monitored.
      By merely specifying the devices to be monitored on the GOT, those devices can
      be monitored without creating the GOT communication sequence program.

4
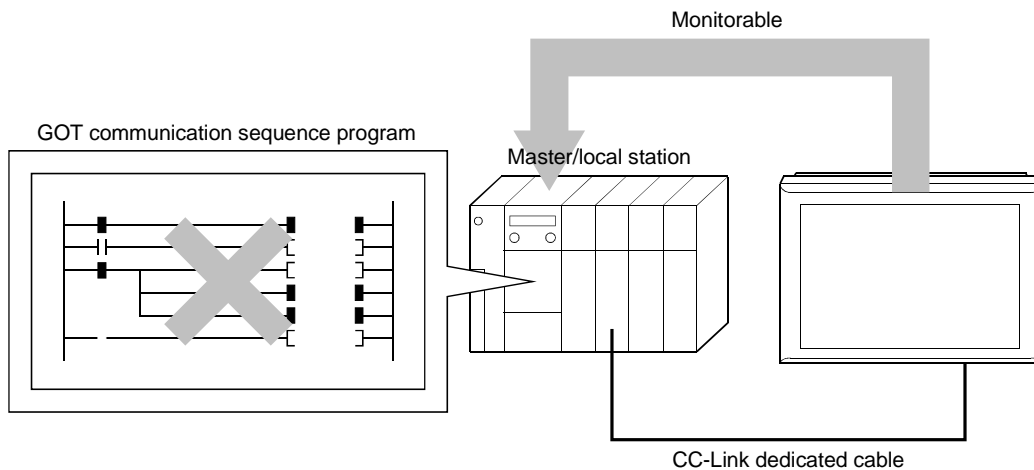
(2) Monitoring by Cyclic transmission

All remote inputs/outputs and remote registers assigned to the Master station by CC-Link parameter setting can be specified and monitored.

(Not only the area assigned to the GOT in the Master station but also the regions of the other stations can be monitored.)

This section describes the remote inputs, remote outputs, remote registers (write area) and remote registers (read area) separately, but all data can be monitored on the same screen.

[Remote inputs] ... Input function area of the GOT

1) Store data into the remote inputs (RX) of the GOT.
   (Touch switch function, etc.)
2) Data is stored by link scan into the remote inputs (RX) assigned to the GOT of the Master station.
   (Collected per link scan)
3) Read the data of the remote inputs (RX) to the PLC CPU.
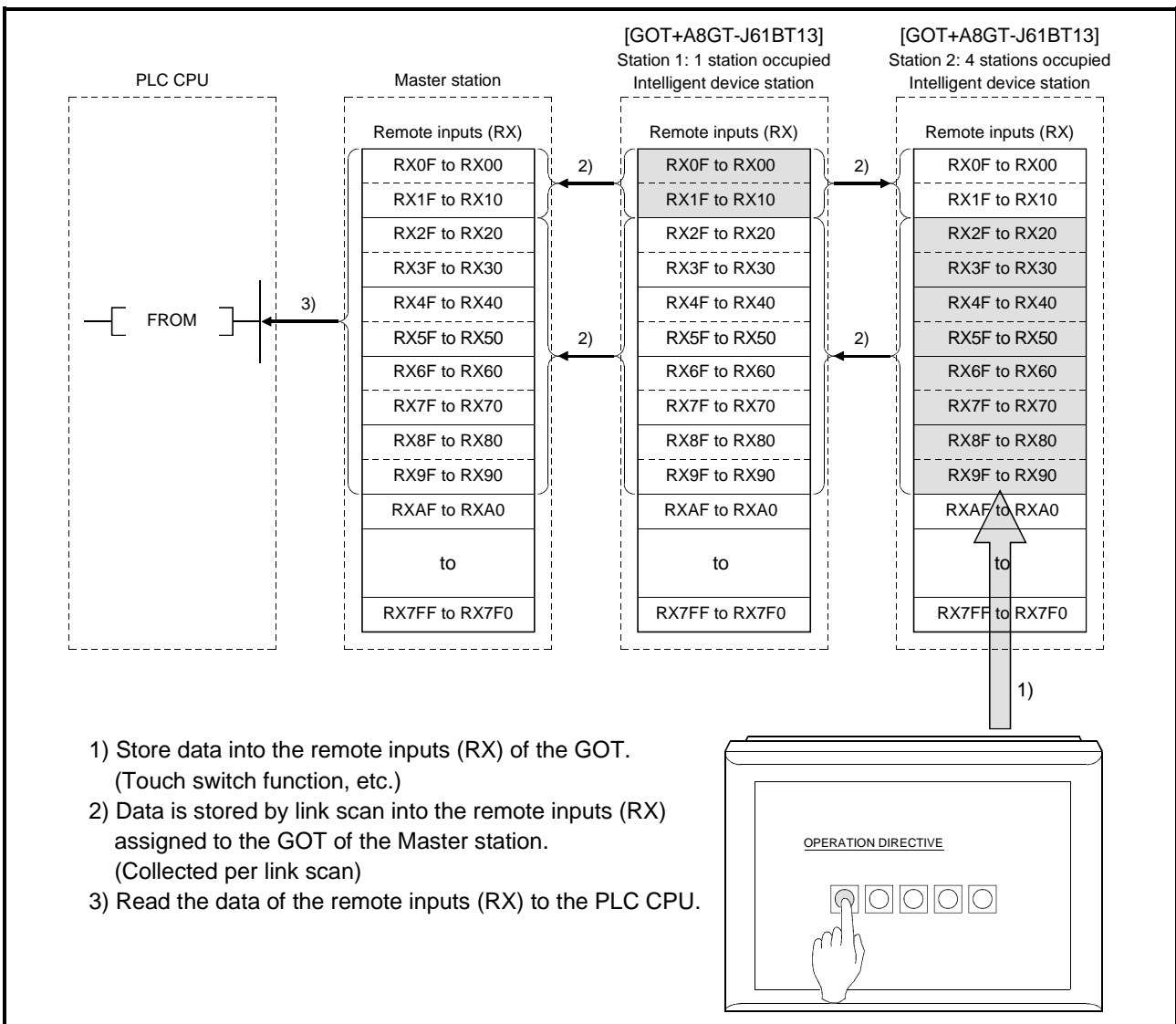
POINT

The GOT can enter data (touch switch function, etc.) into the remote inputs (RX) assigned to the GOT of the Master station.

Though the GOT cannot enter data (touch switch function, etc.) into the other remote inputs (RX), it can display data (lamp display function, etc.).

[Remote outputs] ... Display function area of the GOT

1) Store data into the remote outputs (RY) assigned to the Master station by CC-Link parameter setting.
2) Data is stored into the remote outputs of the GOT by link scan.
3) Display the specified remote outputs on the GOT. (Lamp display function, etc.)
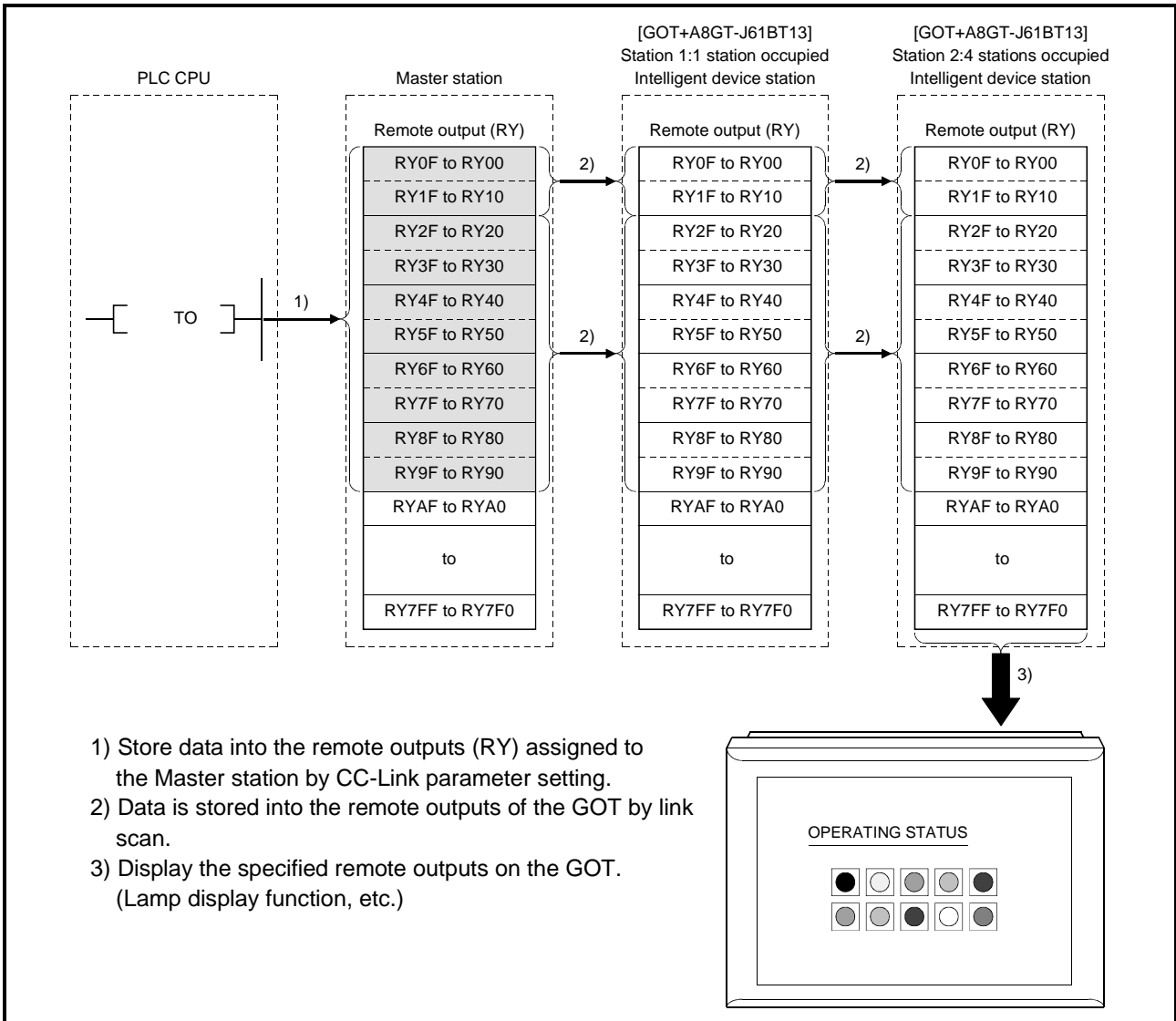
[Remote registers (read area)] ... Input function area of the GOT

1) Store data into the remote registers (read area) of the GOT.
   (Value entry function, etc.)
2) Data is stored by link scan into the remote registers
   (read area) assigned to the GOT of the Master station.
   (Collected per link scan)
3) Read the data of the remote registers (read area) to
   the PLC CPU.
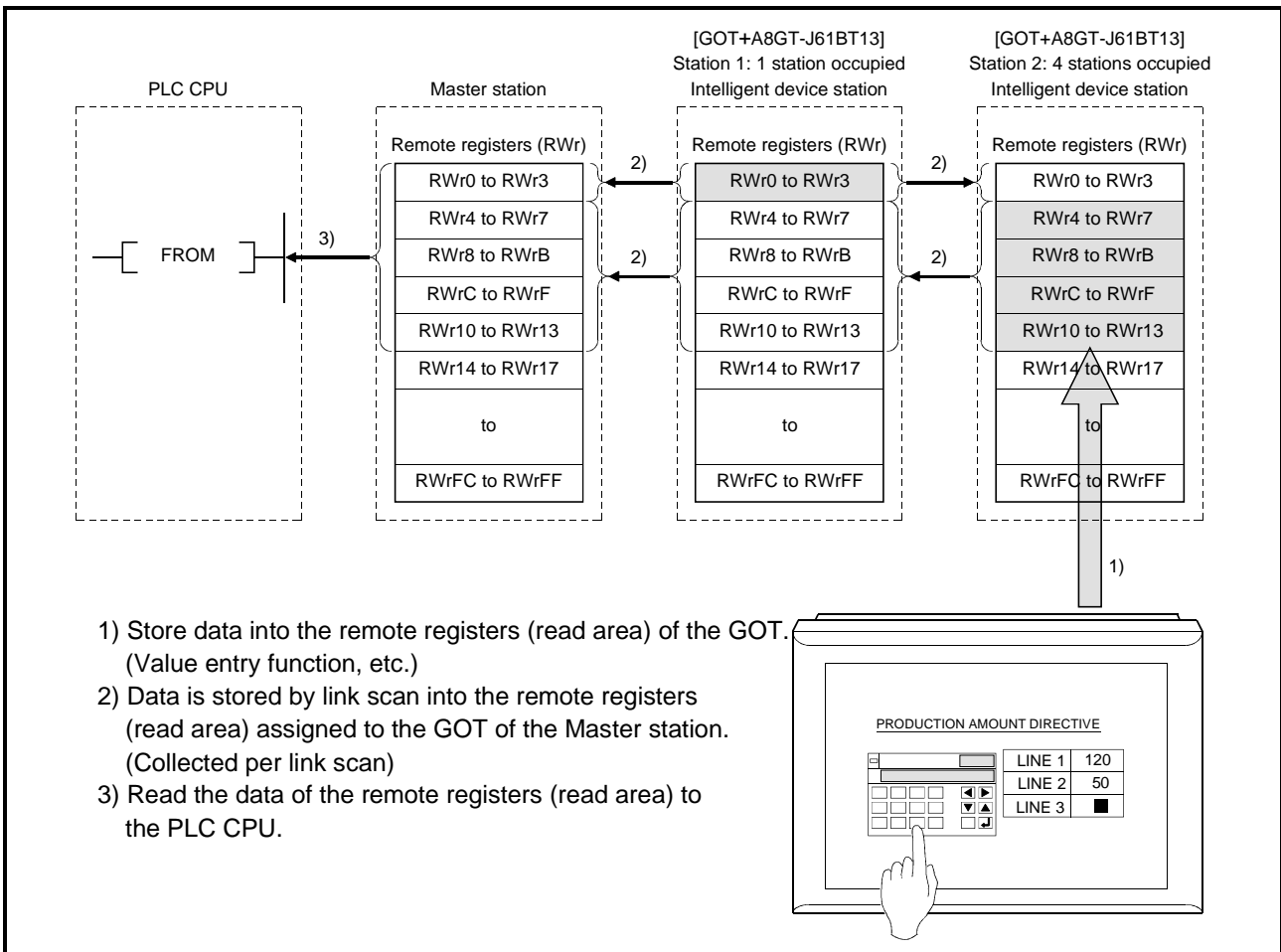
POINT
The GOT can enter data (value entry function, etc.) into the remote registers (read area) assigned to the GOT of the Master station. Though the GOT cannot enter data (value entry function, etc.) into the other remote registers (read area), it can display data (value display function, etc.).

[Remote registers (write area)] ... Display function area of the GOT
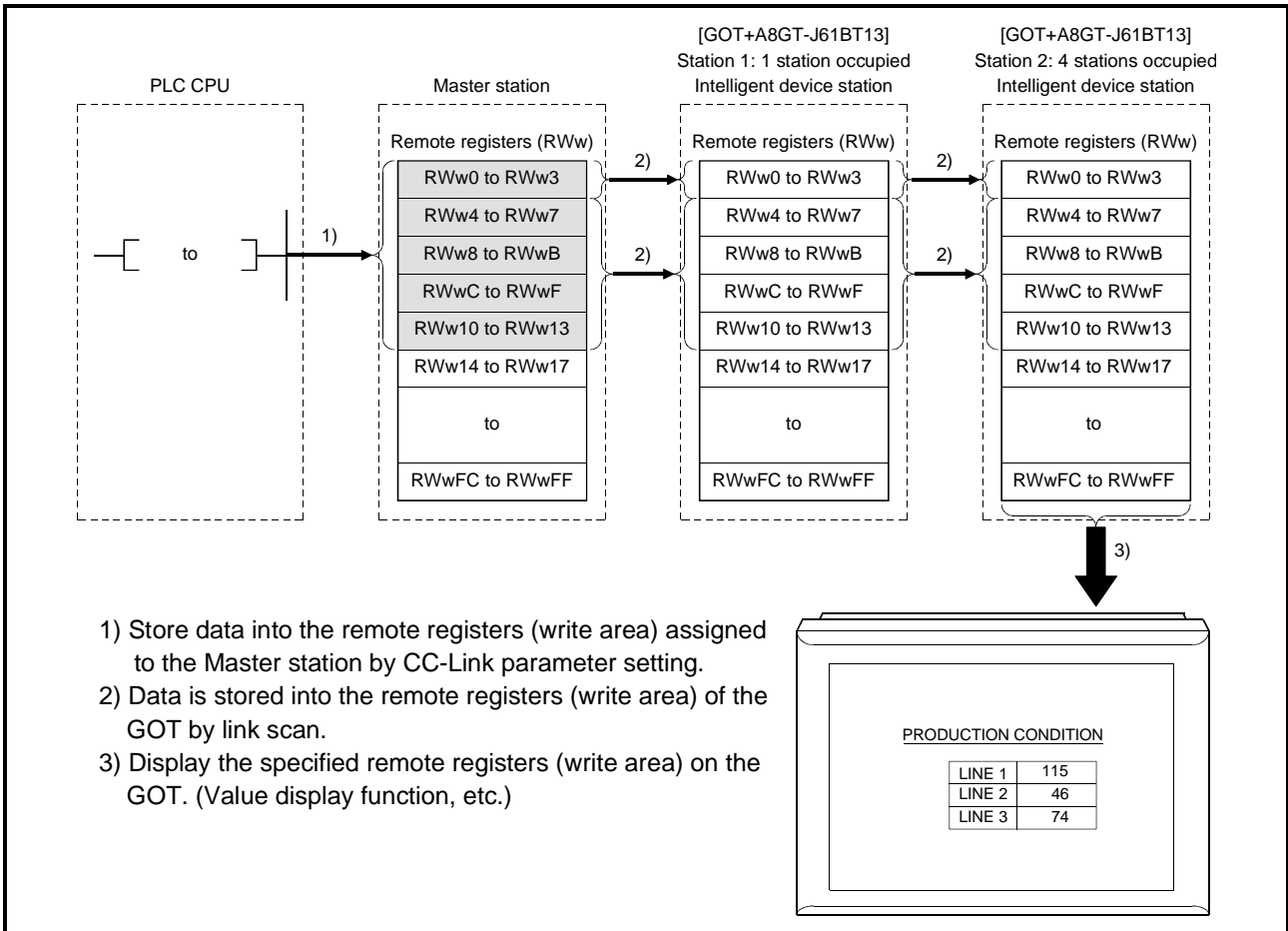
1) Store data into the remote registers (write area) assigned to the Master station by CC-Link parameter setting.
2) Data is stored into the remote registers (write area) of the GOT by link scan.
3) Display the specified remote registers (write area) on the GOT. (Value display function, etc.)

4.2 Monitorable Access Range and Device Specifying Method

4.2.1 Monitorable access range

(1) Monitorable access range for Transient transmission
The GOT can monitor all devices of the PLC CPUs of the Master/local stations and the GOT internal devices in the CC-Link system.
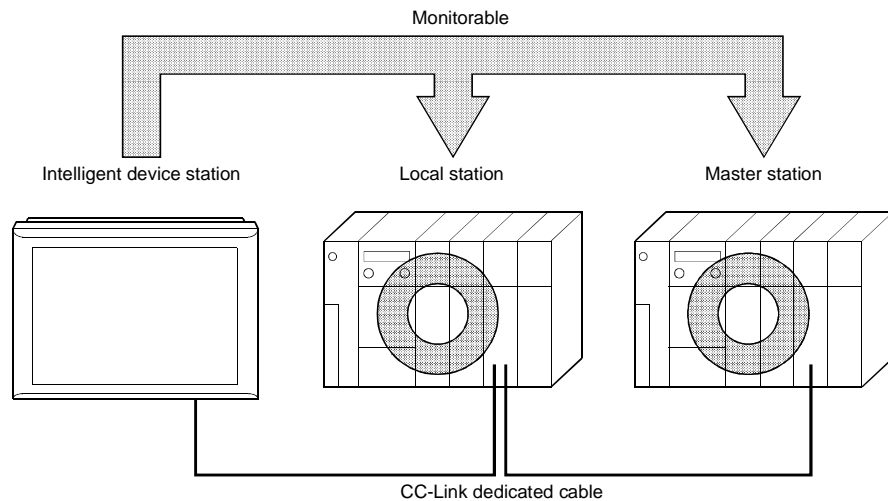
(2) Monitorable access range for Cyclic transmission
The GOT can monitor all remote inputs/outputs, remote registers and GOT internal device assigned to the Master station by CC-Link parameter setting.
Among them, the GOT can write data (read command from the Master station) to only the RX, RWr and GOT internal device assigned to the GOT of the Master station.
The devices that can be monitored are indicated below.

Monitorable Devices		Setting Device Range
Bit	Remote inputs (RX)	RX0 to RX7FF
	Remote outputs (RY)	RY0 to RY7FF
	Specified bits (RWw) of remote registers (write area)	RWw0 to RWwFF
	Specified bits (RWr) of remote registers (read area)	RWr0 to RWrFF
	GOT bit register (GB)	GB64 to GB1023
	Bit designation of GOT data register (GD)	GD64 to GD1023
Word	Remote registers (write area) (RWw)	RWw0 to RWwFF
	Remote registers (read area) (RWr)	RWr0 to RWrFF
	GOT data register (GD)	GD64 to GD1023
	Converting GOT bit register to word (GB)＊1	GB64 to GB1023
	GOT special register (GS)＊1	GS0 to GS511

＊ Can be monitored only when the GOT-A900 Series is used.

4.2.2 How to specify devices when creating the monitor screen

When creating the monitor screen, set the following devices as the devices to be specified.

(1) Setting of NW number and PLC station number
   • When monitoring the devices of the PLC CPU on the other station (monitoring by Transient transmission)
     Set "NW number to 0" and "PLC station number to other station (station number: n)".
     (n:station number of other station to be monitored (0:Master station, 1 to 64:Local stations))
   • When monitoring the remote inputs/outputs and remote registers assigned to the Master station by CC-Link parameter setting (monitoring by Cyclic transmission)
     Set "NW number to 0" and "PLC station number to host station".

(2) Setting of device names and device numbers
   • When monitoring the devices of the PLC CPU on the other station (monitoring by Transient transmission)
     For the device names and device numbers, refer to the user's manual of the PLC CPU to be monitored.
     Note that the Graphics software does not check whether the device names and device numbers set are usable with the PLC CPU to be monitored.
     Before making setting, refer to the user's manual of the PLC CPU to be monitored and confirm the usable device names and device numbers.
   • When monitoring the remote inputs/outputs and remote registers assigned to the Master station by CC-Link parameter setting (monitoring by Cyclic transmission)
     Set the following device names.
     As the device numbers of the remote inputs/outputs and remote registers, set the addresses assigned by station number setting.

Device to Be Monitored		Device Name Set on Graphics Software	Setting Device Range
Remote inputs	RX	X	X0 to X7FF
Remote outputs	RY	Y	Y0 to Y7FF
Remote registers (write area)	RWw	Ww	Ww0 to WwFF
Remote registers (read area)	RWr	Wr	Wr0 to WrFF

4.3 I/O Signals Transferred to/from the Master Module

The following table lists the I/O signals assigned to the GOT.
The I/O signals differ according to the set number of occupied stations (1 or 4 stations).
n in the table indicates the address assigned to the Master module by station number setting.

Signal Direction:GOT → Master module			Signal Direction:Master module → GOT		
Device number			Device number		
Number of occupied stations		Signal name	Number of occupied stations		Signal name
1 station	4 stations		1 station	4 stations	
RXn0 to RXnF	RXn0 to RX(n+6)F	User area	RYn0 to RYnF	RYn0 to RY(n+6)F	User area
RX(n+1)0 to RX(n+1)A	RX(n+7)0 to RX(n+7)A	Reserved	RY(n+1)0 to RY(n+1)A	RY(n+7)0 to RY(n+7)A	Reserved
RX(n+1)B	RX(n+7)B	Remote ready flag＊1	RY(n+1)B	RY(n+7)B	Reserved
RX(n+1)C to RX(n+1)F	RX(n+7)C to RX(n+7)F	Reserved	RY(n+1)C to RY(n+1)F	RY(n+7)C to RY(n+7)F	

＊1 The remote ready flag is on during startup of the GOT.
It switches on when GOT power is switched on, hardware reset is made, or the GOT is ready to operate.
If GOT power is on, the remote ready flag is off when offline operation is performed (during OS installation or screen data downloading) or while initial processing is executed.
Use it for the interlock ladder when writing or reading data to or from the CC-Link Master station.

> ◇DANGER
> • Among the output signals from the Master module to the GOT, do not output the reserved signals.
> Doing so can cause the PLC system to misoperate.

4.4 Remote Register Assignment

The following is the assignment of the remote registers of the GOT.
The remote registers differ according to the set number of occupied stations (1 or 4 stations).
All areas are use areas.
m and n in the table indicate the addresses assigned to the Master module by station number setting.

Transfer Direction	Addresses		Description	Default Value
	Number of occupied stations			
	1 station	4 stations		
Master station ↓ GOT	RWwm to RWwm+3	RWwm to RWwm+F	User write area	0
GOT ↓ Master station	RWrn to RWrn+3	RWrn to RWrn+F	User read area	0

5. PRE-OPERATION SETTINGS AND PROCEDURE

This chapter provides a pre-operation procedure, the names of the parts and their settings, and the wiring method for the A8GT-J61BT13.

5.1 Pre-Operation Procedure

The following flowchart indicates a pre-operation procedure.

(1) Procedure up to downloading of monitor screen data to the GOT

```
                    Start
                      │
        ┌─────────────▼─────────────┐
        │  Wire the GOT power supply. │
        └─────────────┬─────────────┘
                      │                        Refer to the user's manual of the GOT used
        ┌─────────────▼─────────────┐
        │  Supply power to the GOT.   │
        └─────────────┬─────────────┘
                      │
        ┌─────────────▼──────────────────────────────┐
        │ Connect the GOT and Personal computer with  │
        │ the RS-232C cable.                          │
        └─────────────┬──────────────────────────────┘
                      │
        ┌─────────────▼──────────────────────────────┐
        │ Install the OS program installed in the     │
        │ Personal computer into the GOT.             │
        │ 1) Install ROM_BIOS.                        │
        │    ROM_BIOS is factory-installed into the   │
        │    GOT.                                     │
        │    It must be installed only when the       │
        │    version of ROM_BIOS installed in the     │
        │    GOT is older than that of ROM_BIOS       │
        │    currently installed in the personal      │
        │    computer.                                │
        │ 2) When ROM_BIOS installation is complete,  │
        │    reset the GOT power supply.              │
        │ 3) Install the basic OS, communication      │
        │    driver "CC-Link (ID)" and optional       │
        │    function OS into the GOT.                │
        │ 4) When installation is complete, reset the │
        │    GOT power supply.                        │
        └─────────────┬──────────────────────────────┘
```
····Refer to the GT Designer2 Version1 Operating Manual or the GT Works Version 5 / GT Designer Version 5 Refference Manual or the SW3NIW-A8GOTP operating manual (Data transmission/Debugging/Document Creation Manual)

```
        ┌─────────────▼─────────────┐
        │ Load the A8GT-J61BT13 to   │
        │ the GOT.                    │
        └─────────────┬─────────────┘
```
····Refer to Section 5.4

```
        ┌─────────────▼─────────────┐
        │ Set the switches of the     │
        │ A8GT-J61BT13.               │
        └─────────────┬─────────────┘
```
····Refer to Section 5.2

```
        ┌─────────────▼─────────────┐
        │ Wire the CC-Link dedicated  │
        │ cable.                      │
        └─────────────┬─────────────┘
```
····Refer to Section 5.5

```
        ┌─────────────▼─────────────┐
        │ Load and wire the optional  │
        │ module.                     │
        └─────────────┬─────────────┘
```
····Refer to the user's manual of the GOT used

```
        ┌─────────────▼─────────────┐
        │ Switch on the system with   │
        │ which the GOT is connected. │
        └─────────────┬─────────────┘
```

```
        ┌─────────────▼──────────────────────────────┐
        │ Download the monitor screen data created on │
        │ the personal computer to the GOT.           │
        └─────────────┬──────────────────────────────┘
```
····Refer to the GT Designer2 Version1 Operating Manual or the GT Works Version 5 / GT Designer Version 5 Refference Manual or the SW3NIW-A8GOTP operating manual (Data transmission/ Debugging/Document Creation Manual)

```
        ┌─────────────▼─────────────┐
        │ When downloading is         │
        │ complete, start monitoring. │
        └─────────────┬─────────────┘
                      │
                   Complete
```

(2) Procedure up to CC-Link data link

```
                    ┌─────────────────────────────────────────────────┐
                    │                     Start                       │
                    └─────────────────────────────────────────────────┘
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Load the Master and Local modules to the base    │·····Refer to the Master
                    │ units.                                           │     module user's manual.
                    └─────────────────────────────────────────────────┘
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Install the GOT to the control box.              │·····Refer to the user's manual
                    │                                                 │     of the GOT used
                    └─────────────────────────────────────────────────┘
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Check that the Master and Local modules operate  │·····Refer to the Maste module
                    │ independently. (Hardware test)                   │     user's manual.
                    └─────────────────────────────────────────────────┘
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Connect the remote modules and GOT with CC-Link  │·····Refer to Section 5.5
                    │ dedicated cable.                                 │
                    └─────────────────────────────────────────────────┘
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Set the station number switches of the           │·····Refer to Section 5.2
                    │ A8GT-J61BT13.                                    │
                    └─────────────────────────────────────────────────┘
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Switch on the GOT, remote modules and Master     │
                    │ module in this order.                            │
                    └─────────────────────────────────────────────────┘
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Confirm the connection status of each module.    │
                    │ (Line test)                                     │    Refer to the Maste module
                    └─────────────────────────────────────────────────┘     user's manual.
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Write a parameter setting program.              │
                    └─────────────────────────────────────────────────┘
  Monitoring by Transient transmission only
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Write a communication program for monitoring by  │
                    │ Cyclic transmission.                             │
                    └─────────────────────────────────────────────────┘
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │ Start data link and monitor data on the GOT.    │
                    └─────────────────────────────────────────────────┘
                                          │
                    ┌─────────────────────────────────────────────────┐
                    │                   Complete                      │
                    └─────────────────────────────────────────────────┘
```
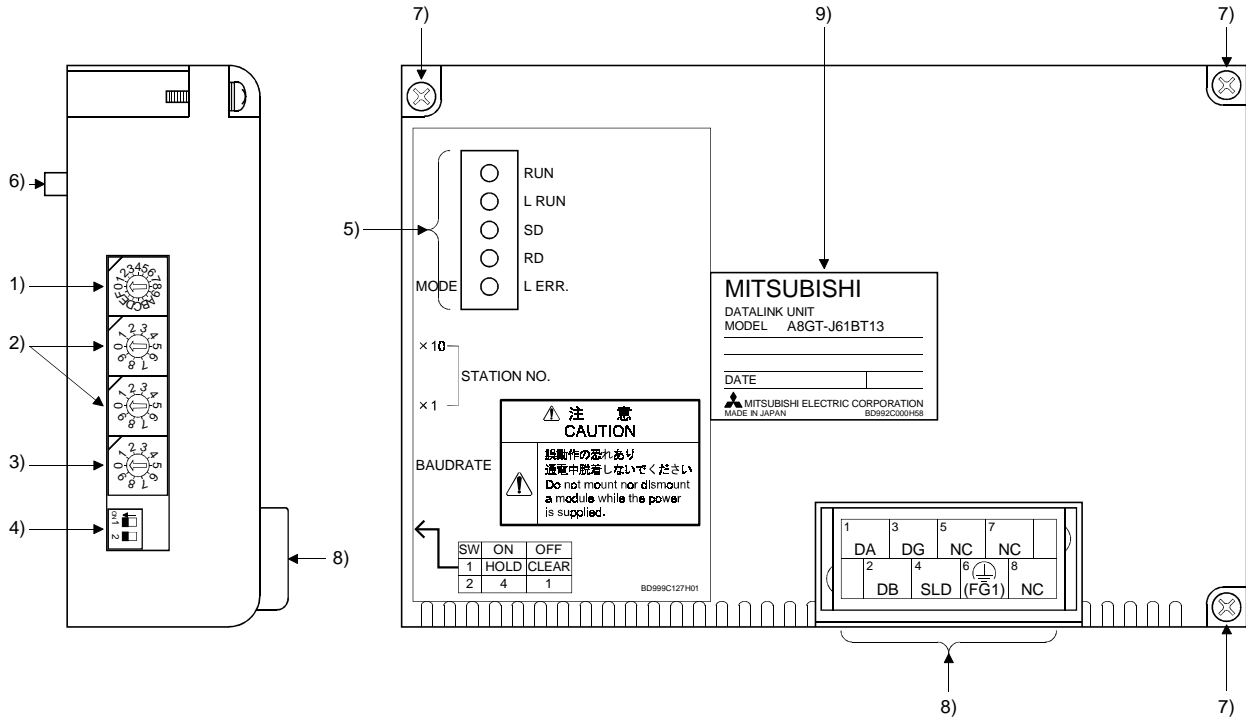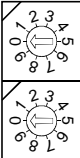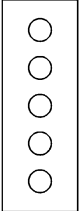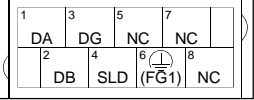
5

5.2 Names of the Parts and Their Settings

This section provides the names of the A8GT-J61BT13 parts and how to set the switches.

Number	Name	Description			
1)	Mode setting switch	Used to set the operating status of the module. (Factory setting:0)			
		Number	Name	Description	
		0	Online	Data link enabled and automatic return made	
		1	(Reserved)	———	
		2	Offline	Disconnected from data link	
		3 to F	(Reserved)	———	
2)	Station number setting switches	Used to set the station number of the A8GT-J61BT13 between 1 and 64. (Factory setting: 01) Use "×10" to set the tens. Use "×1" to set the units.			
3)	Transmission baudrate setting switch	Used to set the transmission speed of the module. (Factory setting:0)			
		Number to be Set		Transmission Baudrate	
		0		156kbps	
		1		625kbps	
		2		2.5Mbps	
		3		5Mbps	
		4		10Mbps	
		5 to 9		Reserved (If the value you set is 5 to 9, the L.ERR LED is lit to indicate a communication error.)	

Number	Name	Description
4)	Condition setting switches	Used to set the operational conditions. (Factory setting:OFF)
5)	Indicator LEDs RUN L RUN SD RD L ERR.	Data link status can be conformed by the on/off statuses of the LEDs.
6)	Connector	Connector for connection to the GOT
7)	Module fixing screws	Screws for installation to the GOT (M3×3 screw)
8)	Terminal block	Terminal block for cable connection (M3×8 screw)
9)	Rating plate	———

Number 4) — Condition setting switches:

Number	Setting Item	Switch Position	
		ON	OFF
SW1	Number of occupied stations	4 stations	1 station
SW2	Input data status of faulty data link station	Held	Cleared

Number 5) — Indicator LEDs:

LED Name	Description
RUN LED	On:Indicates that the module is normal. Off:Indicates a watchdog timer error.
L RUN LED	On:Indicates that communication is normal. Off:Indicates a communication break (time excess error).
SD LED	On:Indicates data transmission.
RD LED	On:Indicates data receive.
L ERR. LED	On: Indicates a communication data error (CRC error). Flicker: Indicates that any switch (1 to 4) position was changed while power is on. Off: Indicates that communication is normal.

Number 8) — Terminal block:

1	3	5	7
DA	DG	NC	NC
2	4	6	8
DB	SLD	(FG1)	NC

5.3 Handling Instructions

Tighten the mounting and terminal screws of the A8GT-J61BT13 within the following ranges.

Screw Location	Tightening Torque Range
Module mounting screw (M3 screw)	39 to 59N•cm
Terminal block terminal screw (M3 screw)	39 to 59N•cm
Terminal block mounting screw (M3.5 screw)	59 to 88N•cm

5.4 Mounting Procedures

This section provides the procedures to mount the A8GT-J61BT13 to and from the GOT.

(1) Mounting the A8GT-J61BT13 to the GOT-A900 Series
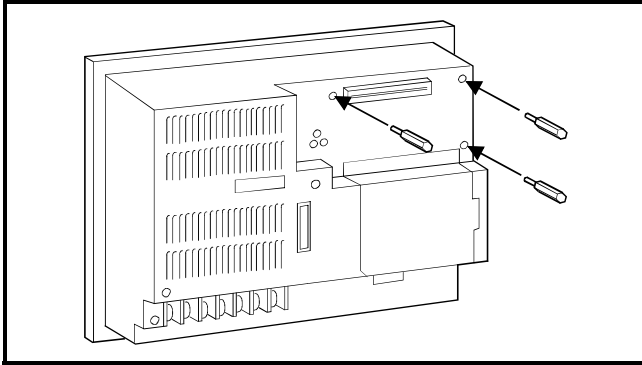
1) Fit the communication module securing fixtures in the GOT main unit.
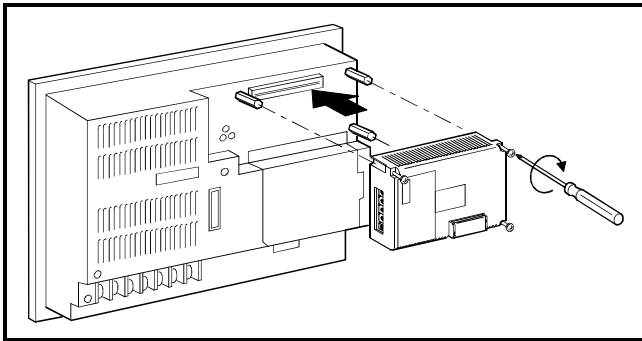
2) Mount the A8GT-J61BT13 on the GOT interface.
3) Tighten and fix the mounting screws (3 pcs.) of the communication module in the specified torque range. (39 to 59 N•cm)
4) To remove the unit, reverse the installation procedure.

(2) Mounting the A8GT-J61BT13 to the GOT800 Series
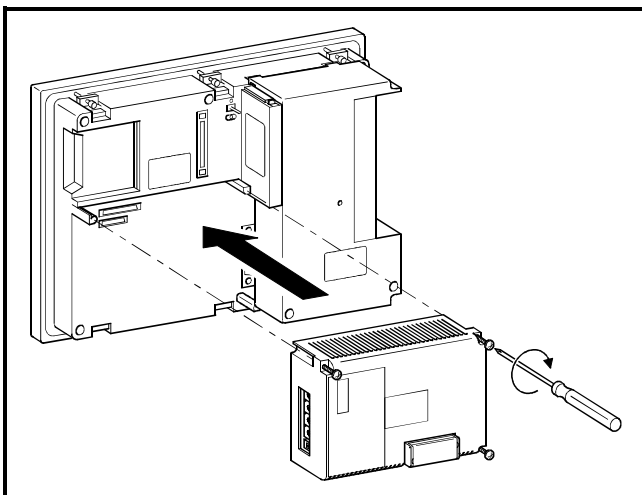
1) Fit the A8GT-J61BT13 to the mounting section of the GOT.
2) Tighten the module fixing screws (3 pcs.) to within the specified torque range (39 to 59N•cm).
3) To remove the unit, reverse the installation procedure.

5.5 Wiring Method

The following diagram shows how to wire the GOT and CC-Link system modules.

(1) Wiring the GOT and CC-Link system modules by CC-Link dedicated cable
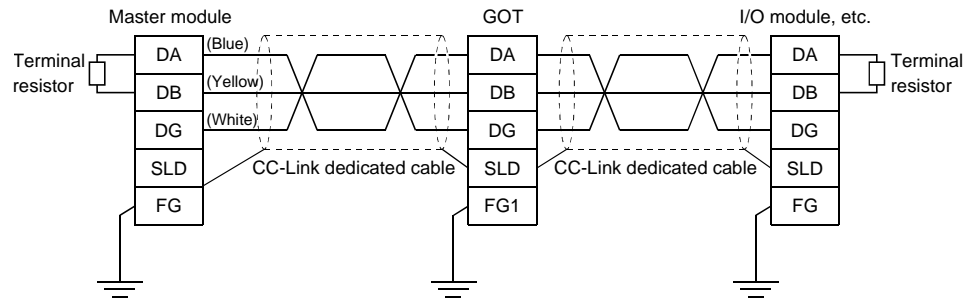
(2) Connection of terminal resistor to the GOT
When connecting a terminal resistor to the GOT, always connect it in the following position.
The terminal resistor is contained in the package of the Master module.
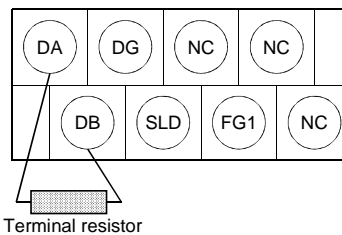
Terminal resistor

POINT

- The "terminal resistors" supplied with the Master module must be connected to the modules at both ends of data link. (Connect them across DA-DB.)
- Connect the shield wire of the CC-Link dedicated cable to "SLD" of each module. Since "SLD" is connected to "FG/FG1" internally, always ground the FG terminal and FG1 terminal to the protective ground conductor.
- The FG terminal of the GOT power supply and the FG1 terminal of the A8GT-J61BT13 must be connected separately.

---

6. PROGRAMMING

The programming example described in this section is designed to make parameter setting to the master module and communication between the GOT and remote I/O station in the following system.

Refer to the CC-Link System Remote I/O Module User's Manual (Details) for the remote I/O station, and to the CC-Link System Master/Local Module User's Manual (Details) for details of the parameter setting made to the master module.

6.1 System Configuration

PLC (Q06HCPU)
QJ61BT11:Station 0

A975GOT + A8GT-J61BT13
Station 1:1 station occupied

AJ65BTB1-16DT
Station 2:1 station occupied

CC-Link dedicated cable
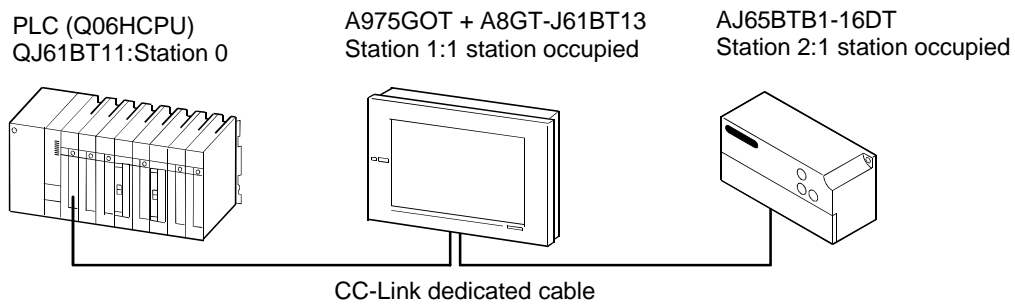
6.2 Relationships Between Corresponding Devices

[Q06HCPU] PLC CPU		[QJ61BT11] Station 0 Master station		[A975GOT + A8GT-J61BT13] Station 1:1station occupied Intelligent device station	[AJ65BTB1-16DT] Station 2:1station occupied Remote I/O station
		Address	Remote inputs (RX)	Remote inputs (RX)	Remote inputs (RX)
M0 to M15		E0H	RX0F to RX00	RX0F to RX00	RX0F to RX00
M16 to M31		E1H	RX1F to RX10	RX1F to RX10	RX1F to RX10
M32 to M47		E3H	RX2F to RX20	RX2F to RX20	
M48 to M63		E4H	RX3F to RX30	RX3F to RX30	
		Address	Remote outputs(RY)	Remote outputs(RY)	Remote outputs(RY)
M112 to M127		160H	RY0F to RY00	RY0F to RY00	RY0F to RY00
M128 to M143		161H	RY1F to RY10	RY1F to RY10	RY1F to RY10
M144 to M159		162H	RY2F to RY20	RY2F to RY20	
M160 to M175		163H	RY3F to RY30	RY3F to RY30	
		Address	Remote registers (RWw)	Remote registers (RWw)	
D100 to D103		1E0H to 1E3H	RWw0 to RWw3	RWw0 to RWw3	
		Address	Remote registers (RWr)	Remote registers (RWr)	
D200 to D203		2E0H to 2E3H	RWr0 to RWr3	RWr0 to RWr3	

6

6.3 Monitor Screen Examples

The following are the monitor screen examples of the GOT.
Refer to the GT Designer2 Version1 Reference Manual/help function of GT Designer
for the way to set each object.

(1)   Common setting

Setting Item	PLC Type	GOT Type	Base Screen Switching Device
Settings	MELSEC-QnA,Q	A97*GOT/GT SoftGOT	D300

(2)   Base screen No. 1 settings

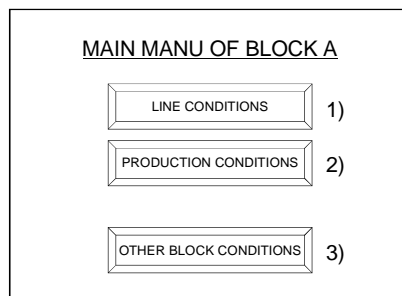| No.	Object Function to Be Set	Setting	Operation
1)	Touch key function	Base screen switching fixed value: 2	Setting made to switch to base screen No. 2.
2)	Touch key function	Base screen switching fixed value: 3	Setting made to switch to base screen No. 3.
3)	Touch key function	Base screen switching fixed value: 4	Setting made to switch to base screen No. 4.

(3)   Base screen No. 2 settings

The devices of the master station assigned to the AJ65BTB1-16DT (remote I/O
station) are monitored. (Monitor using cyclic transmission)
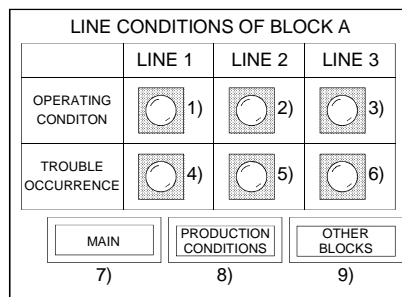
No.	Object Function to Be Set	Setting	Operation
1)	Lamp display function	Monitor device: X0 (RX0) to M0	Settings made for the remote I/O station to display on the GOT the line operating statuses (ON/OFF) stored in M0 to M2.
2)	Lamp display function	Monitor device: X1 (RX1) to M1	
3)	Lamp display function	Monitor device: X2 (RX2) to M2	
4)	Lamp display function	Monitor device: Y0 (RY0) from M112	Settings made to display on the GOT the fault occurrence information output to the remote I/O station.
5)	Lamp display function	Monitor device: Y1 (RY1) from M113	
6)	Lamp display function	Monitor device: Y2 (RY2) from M114	
7)	Touch key function	Screen switching device: Fixed at 1	Setting made to switch to base screen No. 1.
8)	Touch key function	Screen switching device: Fixed at 3	Setting made to switch to base screen No. 3.
9)	Touch key function	Screen switching device: Fixed at 4	Setting made to switch to base screen No. 4.

(4) Base screen No. 3 settings

The devices of the master station assigned to the GOT (intelligent device station) are monitored. (Monitor using cyclic transmission)
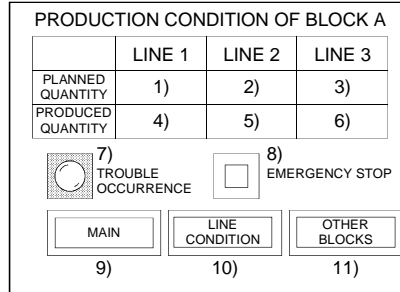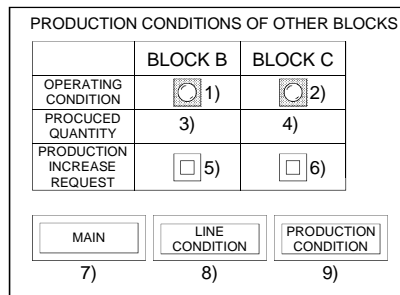
```
┌──────────────────────────────────────────┐
│ PRODUCTION CONDITION OF BLOCK A            │
│         ┌────────┬────────┬────────┐       │
│         │ LINE 1 │ LINE 2 │ LINE 3 │       │
│ ┌───────┼────────┼────────┼────────┤       │
│ │PLANNED│  1)    │  2)    │  3)    │       │
│ │QUANTITY│       │        │        │       │
│ ├───────┼────────┼────────┼────────┤       │
│ │PRODUCED│ 4)    │  5)    │  6)    │       │
│ │QUANTITY│       │        │        │       │
│ └───────┴────────┴────────┴────────┘       │
│   7)                  8)                    │
│  (○) TROUBLE         [ ] EMERGENCY STOP     │
│      OCCURRENCE                             │
│  [ MAIN ]  [ LINE      ]  [ OTHER    ]      │
│            [ CONDITION  ]  [ BLOCKS   ]     │
│     9)        10)            11)            │
└──────────────────────────────────────────┘
```

No.	Object Function to Be Set	Setting	Operation
1)	Numerical input function	Write device Wr4 to D204	Settings made to store the values entered with the numerical input function into D204-D206.
2)	Numerical input function	Write device Wr5 to D205	
3)	Numerical input function	Write device Wr6 to D206	
4)	Numerical display function	Write device Ww4 from 104	Settings made to display the values stored in D104-D106.
5)	Numerical display function	Write device Ww5 from 105	
6)	Numerical display function	Write device Ww6 from 106	
7)	Lamp display function	Monitor device: Y20 (RY20) from M144	Settings made to display on the GOT the fault occurrence information stored in M144.
8)	Touch key function	Bit ALT: X20 (RX20) to M32	Setting made to store the ON/OFF information entered with the touch key function into M32.
9)	Touch key function	Screen switching device: Fixed at 1	Setting made to switch to base screen No. 1.
10)	Touch key function	Screen switching device: Fixed at 2	Setting made to switch to base screen No. 2.
11)	Touch key function	Screen switching device: Fixed at 4	Setting made to switch to base screen No. 4.

(5) Base screen No. 4 settings

The PLC CPU devices of the master station are directly specified and monitored. (Monitor using Transient transmission)

```
┌──────────────────────────────────────────┐
│ PRODUCTION CONDITIONS OF OTHER BLOCKS      │
│            ┌──────────┬──────────┐         │
│            │ BLOCK B  │ BLOCK C  │         │
│ ┌──────────┼──────────┼──────────┤         │
│ │OPERATING │ (○)1)    │ (○)2)    │         │
│ │CONDITION │          │          │         │
│ ├──────────┼──────────┼──────────┤         │
│ │PROCUCED  │   3)     │   4)     │         │
│ │QUANTITY  │          │          │         │
│ ├──────────┼──────────┼──────────┤         │
│ │PRODUCTION│          │          │         │
│ │INCREASE  │ [ ]5)    │ [ ]6)    │         │
│ │REQUEST   │          │          │         │
│ └──────────┴──────────┴──────────┘         │
│  [ MAIN ]  [ LINE     ]  [ PRODUCTION ]    │
│            [ CONDITION ]  [ CONDITION  ]   │
│     7)        8)             9)            │
└──────────────────────────────────────────┘
```

No.	Object Function to Be Set	Setting	Operation
1)	Lamp display function	Monitor device: M200	Settings made to display on the GOT the values stored in M200-M201.
2)	Lamp display function	Monitor device: M201	
3)	Numerical input function	Write device D300	Settings made to store the values entered with the numerical input function into D300-D301.
4)	Numerical input function	Write device D301	
5)	Touch key function	Bit ALT: M202	Settings made to store the ON/OFF information entered with the touch key function into M200-M201.
6)	Touch key function	Bit ALT: M204	
7)	Touch key function	Screen switching device: Fixed at 1	Setting made to switch to base screen No. 1.
8)	Touch key function	Screen switching device: Fixed at 2	Setting made to switch to base screen No. 2.
9)	Touch key function	Screen switching device: Fixed at 3	Setting made to switch to base screen No. 3.

6.4 A8GT-J61BT13 Switch Setting Example

The following is an example of setting the A8GT-J61BT13 switches.

Switch Name		Setting	Description
mode setting switch		0	Online (data link enabled and with automatic return)
Station number setting switches	×10	0	Station No. 1
	×1	1	
Transmission baudrate setting switch		0	156kBPS
Condition setting switches	SW1	OFF	Input data state of data link error station: Clear
	SW2	OFF	Number of occupied stations: 1 station

6.5 Parameter Setting Example (Setting Using GX Developer)

In the network parameter CC-Link list setting, set the first I/O No., total number of stations connected, remote I/O refresh devices, remote register refresh devices, and station information setting.

Setting the items of the following CC-Link list setting and CC-Link station information makes a GOT communication sequence program unnecessary.

Item	Setting Screen Example
CC-Link list setting	No. of boards in module 1 Boards Blank: no setting 0 boards: Set by the sequence program. 		1	2
Start I/O No	0000	
Operational setting	Operational settings	
Type	Master station	
Master station data link type	PLC parameter auto start	
Mode	Online (Remote net mode)	
All connect count	2	
Remote input(RX)	M0	
Remote output(RY)	M112	
Remote register(RWr)	D200	
Remote register(RWw)	D100	
Special relay(SB)		
Special register(SW)		
Retry count	3	
Automatic reconnection station count	1	
Stand by master station No.		
PLC down select	Stop	
Scan mode setting	Asynchronous	
Delay infomation setting	0	
Station information setting	Station information	
Remote device station initial setting	Initial settings	
Interrupt setting	Interrupt settings		
CC-Link station information	CC-Link station information. Module 1 | Station No.	Station type	Exclusive station count	Reserve/invalid station select	Intelligent buffer select(word) Send	Receive	Automatic
---	---	---	---	---	---	---
1/ 1	Intelligent device station	Exclusive station 1	No setting	64	64	128
2/ 2	Remote I/O station	Exclusive station 1	No setting				

7. TROUBLESHOOTING

This section gives simple troubleshooting for use of the A8GT-J61BT13.

POINT

By setting the alarm list display (system alarm) function to the display screen using the graphics software, the GOT can quickly detect a link error, in addition to the following errors.

When a link error occurs, the following error code and error messages are displayed in the display field of the alarm list display (system alarm) function.

Error code	Message
402	• Communication disable (GOT800 Series) • Communication time-out (GOT-A900 Series)

For more details on how to set up the alarm list display (system alarm) function and the contents of display, refer to the manuals listed in the table below.

GOT Used	Manuals to refer to
GOT-A900 Series	GT Designer2 Version1 Reference Manual/ GT Designer Help function
GOT800 Series	SW □ NIW-A8GOTP Operating Manual (Monitor Screen Creation Manual)

7.1 LED-Indicated Error Causes and Their Corrective Actions

This section explains how to check errors indicated by the LEDs of the A8GT-J61BT13.
For errors related to the PLC CPU and Master module, refer to the user's manuals of the PLC CPU and Master module.

(1) If the RUN LED of the A8GT-J61BT13 goes off

Cause	Corrective Action
Watchdog timer error occurred.	Check the special link registers of the Master module to make sure that the watchdog timer error occurred and switch on power of the GOT again＊1. If the RUN LED is not lit after power is switched on again, the hardware may be faulty. Consult your sales representative.
Power is not supplied to the GOT or voltage is insufficient.	Supply power to the GOT and check the voltage of the power supply.
Switch setting is outside the specified range (mode 2 or 4 to F, station number 0 or 65 or more, transmission speed 5 to 9).	Correct the switch setting and switch power on again＊1.

(2) If the L RUN LED of the A8GT-J61BT13 goes off

Cause	Corrective Action
CC-Link dedicated cable is broken or shorted.	Check and repair the CC-Link dedicated cable.
Master station stopped link.	Check for an error at the Master station.
Station number was repeated.	Switch power on again＊1 after correcting the station number setting of the module of which station number was repeated.
GOT parameters have not been set.	Correct the GOT parameter setting and switch power of the GOT again＊1.
Power is not supplied to the GOT or voltage is insufficient.	Supply power to the GOT and check the voltage of the power supply.
Switch setting is outside the specified range (mode 2 or 4 to F, station number 0 or 65 or more, transmission speed 5 to 9).	Correct the switch setting and switch power on again＊1.

(3) If the L ERR LED of the A8GT-J61BT13 flickers

Cause	Corrective Action
Mode, station number or transmission speed switch setting was changed during normal operation.	Return the mode, station number or transmission speed switch setting to the previous position and switch power on again＊1. If the L RUN LED is not lit after switching power on again, the hardware may be faulty. Consult your sales representative.
Station number or transmission speed switch is faulty.	If the L ERR LED begins to flicker though switch setting was not changed during operation, the hardware may be faulty. Consult your sales representative.

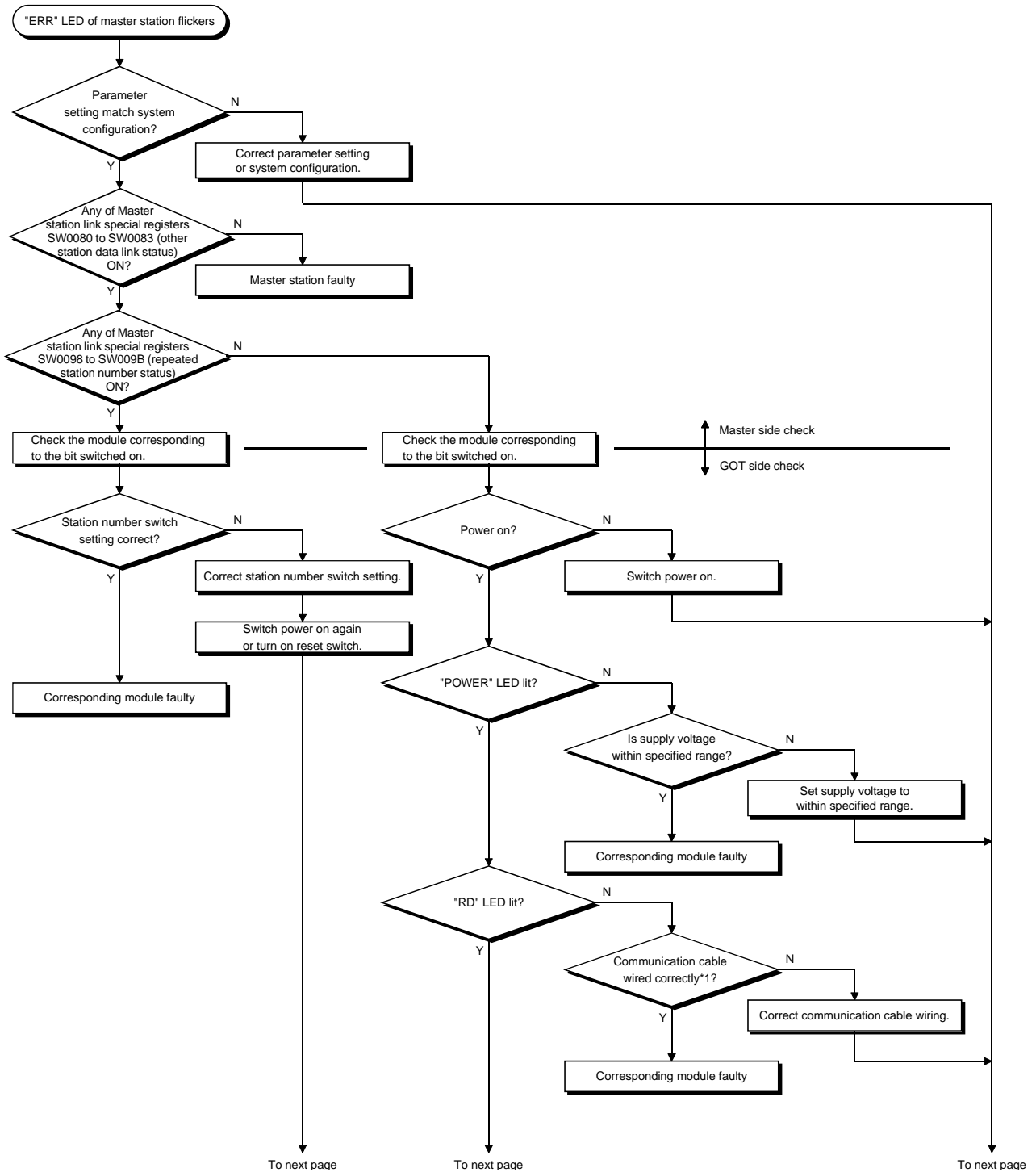(4) If the L ERR LED of the A8GT-J61BT13 is lit

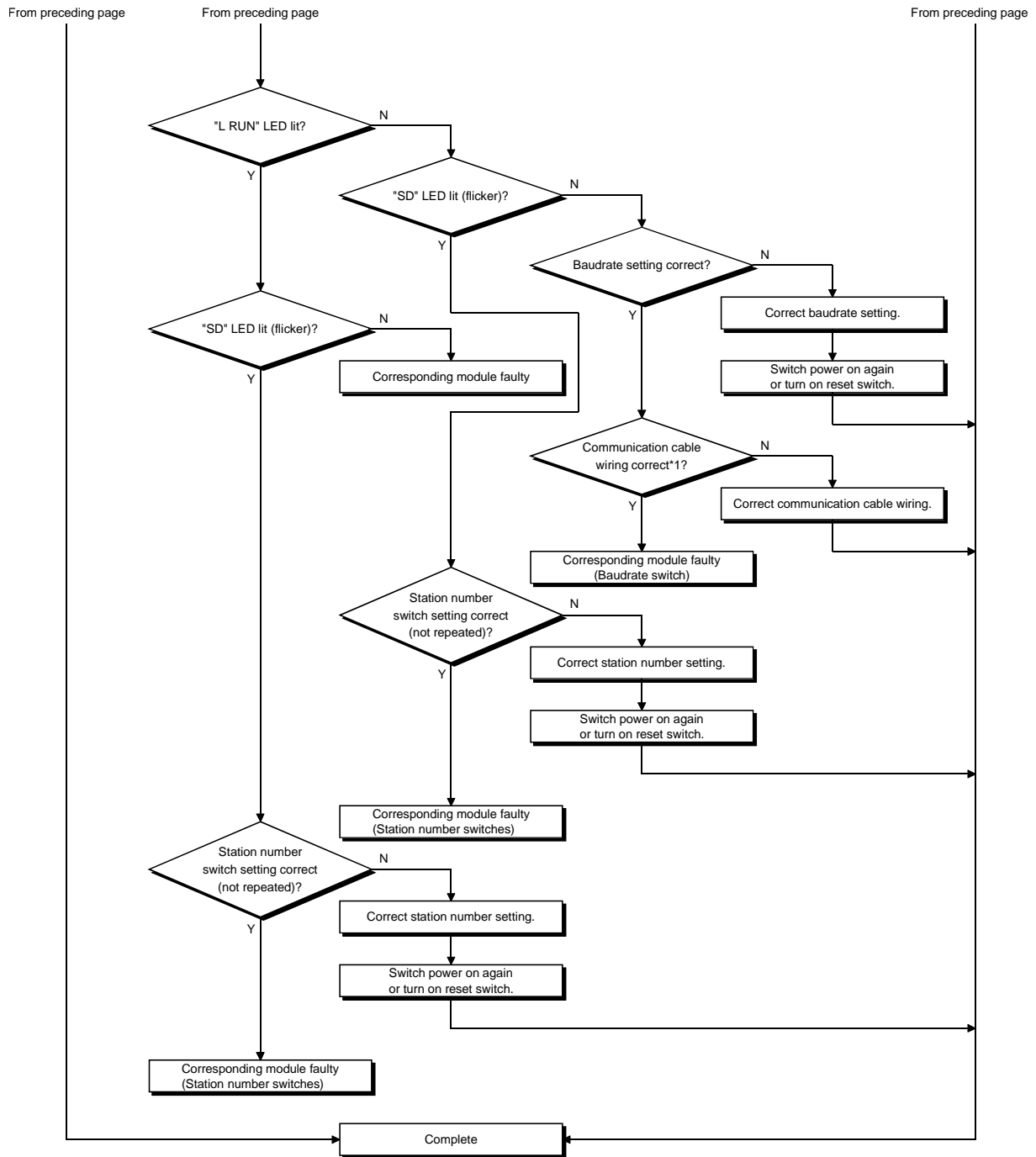| Cause	Corrective Action
Switch setting is outside the specified range (mode 2 or 4 to F, station number 0 or 65 or more, transmission speed 5 to 9).	Correct the switch setting and switch power on again＊1.
Terminal resistors are left unconnected.	Check that the terminal resistors are connected. If not, connect them and switch power on again＊1.
A8GT-J61BT13 or CC-Link dedicated cable are affected by noise.	• Connect both ends of the shield wire of the CC-Link dedicated cable to ground (earth conductors separately) via SLD and FG1 of each module. • Securely connect the FG terminal of the module to ground. • Securely ground the piping when running cables in piping.

＊1: Switch power on again:Switch power on again or turn on the reset switch.

7

7.2 Communication Error Occurs between Master Station and GOT

If any repeated station number bit in any of the link special registers SW0098 to SW009B (repeated station number status) switches on, check the GOT of the corresponding station number in the following flowchart.

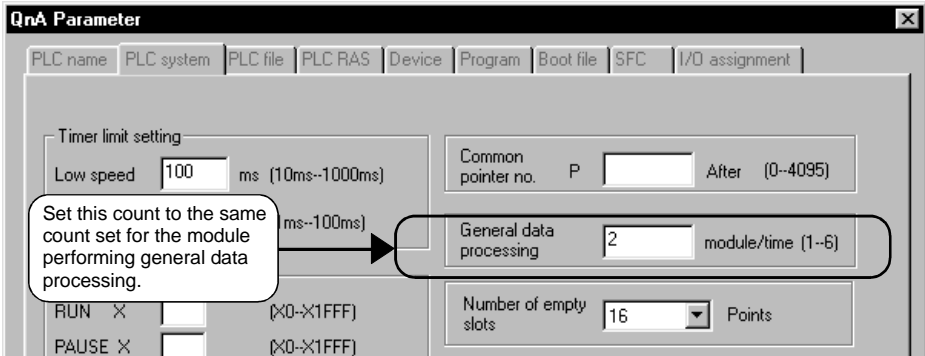Troubleshooting flowchart used when the "ERR" LED of the Master station flickers

From preceding page   From preceding page   From preceding page

"L RUN" LED lit? — N

Y

"SD" LED lit (flicker)? — N

Y

"SD" LED lit (flicker)? — N → Corresponding module faulty

Y

Baudrate setting correct? — N → Correct baudrate setting. → Switch power on again or turn on reset switch.

Y

Communication cable wiring correct*1? — N → Correct communication cable wiring.

Y

Corresponding module faulty (Baudrate switch)

Station number switch setting correct (not repeated)? — N → Correct station number setting. → Switch power on again or turn on reset switch.

Y

Corresponding module faulty (Station number switches)

Station number switch setting correct (not repeated)? — N → Correct station number setting. → Switch power on again or turn on reset switch.

Y

Corresponding module faulty (Station number switches)

Complete

*1: Check for short circuit, reverse connection, wire breakage, no terminal resistor, improper FG connection, improper overall distance and improper interstation distance.

7.3 Method for Accelerating the Data Communication Processing Speed During Transient Transmission

When monitoring is performed during transient transmission, the processing speed of data communication can be accelerated using the following methods.

CPU types	Method
When the ACPU is used	Insert a COM instruction in the sequence program of the CPU that exchanges data with the GOT. By inserting a COM instruction, general data request is performed between the CC-Link module and the CPU. However, note that the scan time of the sequence program will be extended by a maximum of about 3 ms if a COM instruction is inserted.
When the QnACPU is used	(1) Using GX Developer, select [PLC Parameters] - [PLC system] and set the general data processing count to the same count set for the module performing general data processing that has been mounted to the QnACPU. (Example: If one serial communication module and one CC-Link module are mounted, set the count to "2.") However, note that each time a module that performs general data processing is added, the scan time of the sequence program will be is extended by a maximum of about 3 ms. QnA Parameter PLC name │ PLC system │ PLC file │ PLC RAS │ Device │ Program │ Boot file │ SFC │ I/O assignment │ Timer limit setting Low speed [100] ms (10ms--1000ms) Common pointer no. P [ ] After (0--4095) Set this count to the same count set for the module performing general data processing. [ms--100ms) General data processing [2] module/time (1--6) RUN X [ ] (X0--X1FFF) Number of empty slots [16 ▼] Points PAUSE X [ ] (X0--X1FFF) (2) Insert a COM instruction (which turns on the special relay SM775) in the sequence program of the CPU that exchanges data with the GOT. By inserting a COM instruction, general data request is performed between the CC-Link module and the CPU. However, note that the scan time of the sequence program will be extended by a maximum of about 3 ms if a COM instruction is inserted.
When the QCPU is used	Insert a COM instruction (which turns on the special relay SM775) in the sequence program of the CPU that exchanges data with the GOT. By inserting a COM instruction, general data request is performed between the CC-Link module and the CPU. However, note that the scan time of the sequence program will be extended by a maximum of about 3 ms if a COM instruction is inserted.

APPENDICES

Appendix 1. Outline Dimension Drawing

Unit:mm(inch)

APP
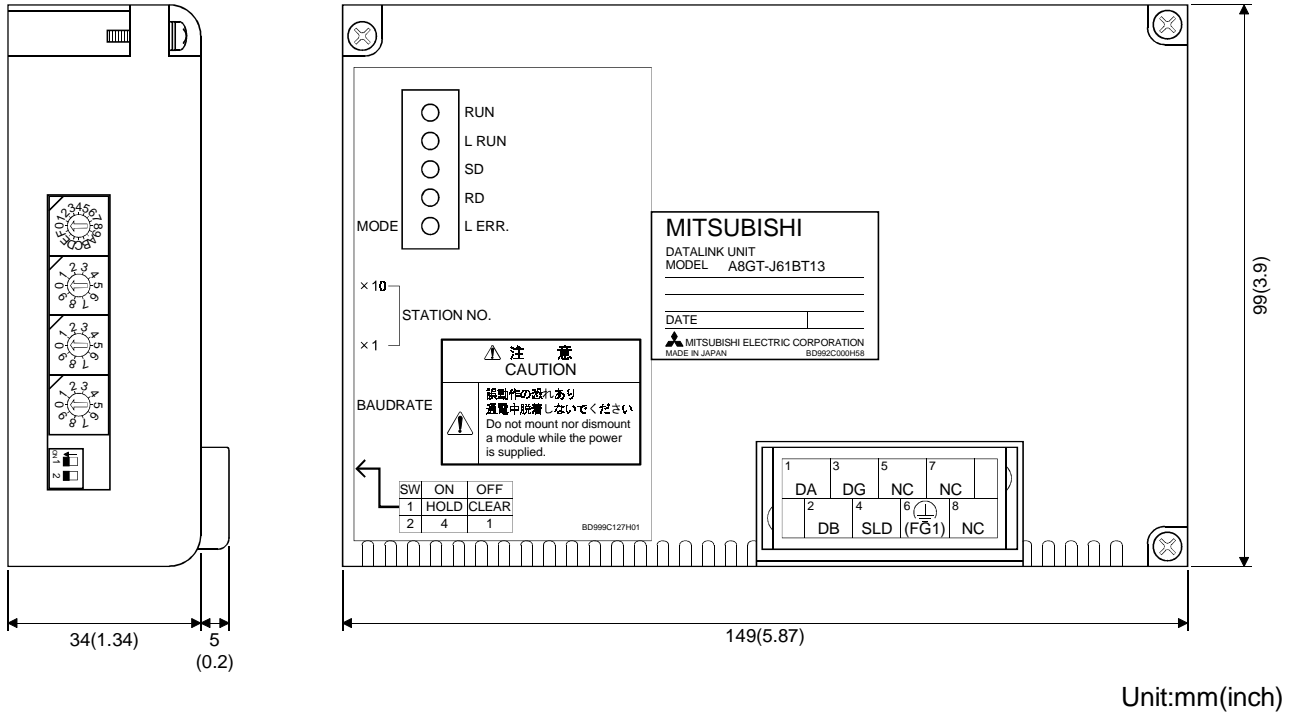
Appendix 2. Calculating Formulas of the Transmission Delay Time When the A8GT-J61BT13 is Used

The following explains the calculating formulas of the transmission delay time when the A8GT-J61BT13 is used (when the GOT is an intelligent device station).

(1) During cyclic transmission
   (a) Calculating formula
      $SM + LS \times 3 + 100$ (processing time of the intelligent device station: 100 ms)
      = Transmission delay time of the intelligent device station

      SM : Scan time of the Master station's sequence program
      LS : Link scan time

   (b) Example of calculation
      When SM: 10 ms, LS: 5 ms
      $10 + 5 \times 3 + 100 = \underline{125}$ (ms)

(2) During transient transmission
   (a) Calculating formula
      MB + Processing time of the intelligent device station
      = Transmission delay time of the intelligent device station

      1) $MB = \{SM + LS \times 2 + (\text{request data count} + 16) / 16 \times LS + \alpha + SM \times n + LS + ((\text{response data count} + 16) / 72 \times LS) \times n + \beta + \text{bps constant}\} \times N$
         n: number of GOTs
         Request data count: (Number of object points + (Number of object points / 19) *1) $\times$ 6
         Response data count: (Number of object points + (Number of object points / 19) *1) $\times$ 2
      2) Processing time of the intelligent device station = $90 \times$ (Number of object points / 19) *1
                                                                 *1 Round-up

   (b) Example of calculation
      When SM: 10 ms, LS: 5 ms, the numeric value display function is set to 18 points
      Request data count: $114 = (18 + (18 / 19)) \times 6$
      Response data count: $38 = (18 + (18 / 19)) \times 2$
      α : 0ms, β : LS 5 ms, bps constant: LS 5ms $\times$ 7, N: 1, n: 1

      $MB = \{10 + 5 \times 2 + (114 + 16) / 16 \times 5 + 0 + 10 \times 1 + 5 + ((38 + 16) / 72 \times 5) \times 1 + 5 + 5 \times 7\} \times 1$
         $= 10 + 10 + 45 + 10 + 5 + 5 + 5 + 35$
         $= 125$ (ms)

      Processing time of the intelligent device station = $90 \times$ (Number of object points / 19)
         $= 90 \times (18 / 19)$
         $= 90$ (ms)
      $125 + 90 = 215$ (ms)

Differences in the transmission delay time, depending on the number of object points (when calculated using the conditions shown above)

Number of object points set	Transmission delay time
38 points	330 ms
57 points	475 ms
76 points	600 ms
95 points	735 ms

APP

INDEX

Ind

MEMO

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.

A8GT-J61BT13 Type CC-Link Communication Module

User's Manual

MODEL	A8GT-J61BT13-U-E
MODEL CODE	1DM072
IB(NA)-66838-D(0406)MEE	

MITSUBISHI ELECTRIC CORPORATION

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Specifications subject to change without notice.