

MITSUBISHI



GRAPHIC OPERATION TERMINAL

GOT1000

GOT1000 Series Connection Manual

(α 2 connection)



● SAFETY PRECAUTIONS ●

(Always read these precautions 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 precautions given in this manual are concerned with this product.

In this manual, the safety precautions 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 accident according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

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

[DESIGN PRECAUTIONS]

DANGER

- Some failures of the GOT, communication unit or cable may keep the outputs on or off.
An external monitoring circuit should be provided to check for output signals which may lead to a serious accident.
Not doing so can cause an accident due to false output or malfunction.
- If a communication fault (including cable disconnection) occurs during monitoring on the GOT, communication between the GOT and PLC CPU is suspended and the GOT becomes inoperative.
For bus connection : The CPU becomes faulty and the GOT becomes inoperative.
For other than bus connection : The GOT becomes inoperative.
A system where the GOT is used should be configured to perform any significant operation to the system by using the switches of a device other than the GOT on the assumption that a GOT communication fault will occur.
Not doing so can cause an accident due to false output or malfunction.
- Do not use the GOT as the warning device that may cause a serious accident.
An independent and redundant hardware or mechanical interlock is required to configure the device that displays and outputs serious warning.
Failure to observe this instruction may result in an accident due to incorrect output or malfunction.

[DESIGN PRECAUTIONS]

DANGER

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

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

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

Note that the following occurs on the GOT when the backlight goes out.

The POWER LED flickers (green/orange) and the monitor screen appears blank.

CAUTION

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

[MOUNTING PRECAUTIONS]

DANGER

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the GOT to/from the panel.
Not doing so can cause the GOT to fail or malfunction.
- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the communication unit, option function board or multi-color display board onto/from the GOT.
Not doing so can cause the unit to fail or malfunction.
- Before mounting an optional function board or Multi-color display board, wear a static discharge wrist strap to prevent the board from being damaged by static electricity.

CAUTION

- Use the GOT in the environment that satisfies the general specifications described in this manual.
Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.
- When mounting the GOT to the control panel, tighten the mounting screws in the specified torque range.
Undertightening can cause the GOT to drop, short circuit or malfunction.
Overtightening can cause a drop, short circuit or malfunction due to the damage of the screws or the GOT.

[MOUNTING PRECAUTIONS]

CAUTION

- When loading the communication unit to the GOT, fit it to the connection interface of the GOT and tighten the mounting screws in the specified torque range.
Overtightening can cause a drop, failure or malfunction due to the damage of the screws or unit.
- When mounting the multi-color display board onto the GOT, tighten the mounting screws within the specified torque range.
Loose tightening may cause the unit and/or GOT to malfunction due to poor contact.
Overtightening may damage the screws, unit and/or GOT; they might malfunction.
- When mounting an optional function board onto the GT15□□, fully connect it to the connector until you hear a click.
- When mounting an optional function board onto the GT15□□, fully connect it to the connector.
- Push the multi-color display board onto the corresponding connector so that it will be secured firmly.
- When inserting a CF card into the GOT, push it into the insertion slot until the CF card eject button will pop out.
Failure to do so may cause a malfunction due to poor contact.
- When inserting/removing a CF card into/from the GOT, turn the CF card access switch off in advance.
Failure to do so may corrupt data within the CF card.
- When removing a CF card from the GOT, make sure to support the CF card by hand, as it may pop out.
Failure to do so may cause the CF card to drop from the GOT and break.

[WIRING PRECAUTIONS]

DANGER

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

[WIRING PRECAUTIONS]

CAUTION

- Please make sure to ground FG terminal and LG terminal of the GOT power supply section by applying Class D Grounding (Class 3 Grounding Method) or higher which is used exclusively for the GOT.
Not doing so may cause an electric shock or malfunction.
- Be sure to tighten any unused terminal screws with a torque of 0.5 to 0.8N•m.
Failure to do so may cause a short circuit due to contact with a solderless terminal.
- Use applicable solderless terminals and tighten them with the specified torque.
If any solderless spade terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Correctly wire the GOT power supply section after confirming the rated voltage and terminal arrangement of the product.
Not doing so can cause a fire or failure.
- Tighten the terminal screws of the GOT power supply section in the specified torque range.
Undertightening can cause a short circuit or malfunction.
Overtightening can cause a short circuit or malfunction due to the damage of the screws or the GOT.
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the GOT. Not doing so can cause a fire, failure or malfunction.
- Plug the bus connection cable by inserting it into the connector of the connected unit until it "clicks".
After plugging, check that it has been inserted snugly.
Not doing so can cause a malfunction due to a contact fault.
- Plug the communication cable into the connector of the connected unit and tighten the mounting and terminal screws in the specified torque range.
Undertightening can cause a short circuit or malfunction.
Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.

[TEST OPERATION PRECAUTIONS]

DANGER

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

[STARTUP/MAINTENANCE PRECAUTIONS]

DANGER

- When power is on, do not touch the terminals.
Doing so can cause an electric shock or malfunction.
- Connect the battery correctly.
Do not discharge, disassemble, heat, short, solder or throw the battery into the fire.
Incorrect handling may cause the battery to generate heat, burst or take fire, resulting in injuries or fires
- Before starting cleaning or terminal screw retightening, always switch off the power externally in all phases.
Not switching the power off in all phases can cause a unit failure or malfunction.
Undertightening can cause a short circuit or malfunction.
Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.

[STARTUP/MAINTENANCE PRECAUTIONS]

CAUTION

- Do not disassemble or modify the unit.
Doing so can cause a failure, malfunction, injury or fire.
- Do not touch the conductive and electronic parts of the unit directly.
Doing so can cause a unit malfunction or failure.
- The cables connected to the unit must be run in ducts or clamped.
Not doing so can cause the unit or cable to be damaged due to the dangling, motion or accidental pulling of the cables or can cause a malfunction due to a cable connection fault.
- When unplugging the cable connected to the unit, do not hold and pull the cable portion.
Doing so can cause the unit or cable to be damaged or can cause a malfunction due to a cable connection fault.
- Do not drop or apply strong impact to the unit.
Doing so may damage the unit.
- Do not drop or give an impact to the battery mounted to the unit.
Doing so may damage the battery, causing the battery fluid to leak inside the battery.
If the battery is dropped or given an impact, dispose of it without using.
- Before touching the unit, always touch grounded metal, etc. to discharge static electricity from human body, etc.
Not doing so can cause the unit to fail or malfunction.

[BACKLIGHT REPLACEMENT PRECAUTIONS]

DANGER

- Be sure to shut off all phases of the external power supply of the GOT (and the PLC CPU in the case of a bus topology) and remove the GOT from the control panel before replacing the backlight (when using the GOT with the backlight replaceable by the user).
Not doing so can cause an electric shock.
Replacing a backlight without removing the GOT from the control panel can cause the backlight or control panel to drop, resulting in an injury.

CAUTION

- Wear gloves for the backlight replacement when using the GOT with the backlight replaceable by the user.
Not doing so can cause an injury.
- Before replacing a backlight, allow 5 minutes or more after turning off the GOT when using the GOT with the backlight replaceable by the user.
Not doing so can cause a burn from heat of the backlight.

[DISPOSAL PRECAUTIONS]

CAUTION

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

[TRANSPORTATION PRECAUTIONS]

CAUTION

- When transporting lithium batteries, make sure to treat them based on the transport regulations.
(For details on models subject to restrictions, refer to the User's Manual for the GOT you are using.)
- Make sure to transport the GOT main unit and/or relevant unit(s) in the manner they will not be exposed to the impact exceeding the impact resistance described in the general specifications of the User's Manual, as they are precision devices.
Failure to do so may cause the unit to fail.
Check if the unit operates correctly after transportation.

INTRODUCTION

Thank you for choosing Mitsubishi Graphic Operation Terminal (Mitsubishi GOT).

Read this manual and make sure you understand the functions and performance of the GOT thoroughly in advance to ensure correct use.

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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)
GT15 User's Manual - Describes the GT15 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices. - Describes the GT15 functions, including the utility. (Sold separately)	SH-080528ENG (1D7M23)
GT11 User's Manual - Describes the GT11 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices. - Describes the GT11 functions, including the utility. (Sold separately)	JY997D17501 (09R815)
GT10 User's Manual - Describes the GT10 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices. - Describes the GT10 functions, including the utility. (Sold separately)	JY997D24701 (09R819)
Handy GOT User's Manual - Describes the Handy GOT hardware-relevant contents, including the system configurations, specifications, part names, mounting, power supply wiring, external dimensions, and option devices. - Describes the Handy GOT functions, including the utility, and how to make cables. (Sold separately)	JY997D20101 (09R817)
GT SoftGOT1000 Version2 Operating Manual Describes the screen configuration, functions and using method of GT SoftGOT1000. (Sold separately)	SH-080602ENG (1D7M48)
GT Designer2 Version2 Basic Operation/Data Transfer Manual (For GOT1000 Series) Describes methods of the GT Designer2 installation operation, basic operation for drawing and transmitting data to GOT1000 series (Sold separately) *1	SH-080529ENG (1D7M24)
GT Designer2 Version2 Screen Design Manual (For GOT1000 Series) 1/3 GT Designer2 Version2 Screen Design Manual (For GOT1000 Series) 2/3 GT Designer2 Version2 Screen Design Manual (For GOT1000 Series) 3/3 Describes specifications and settings of each object function applicable to GOT1000 series. (Sold separately)*1	SH-080530ENG (1D7M25)
GOT1000 Series Gateway Functions Manual Describes specifications, system configurations and setting method of the gateway function. (Sold separately) *1	SH-080545ENG (1D7M33)
GOT1000 Series MES Interface Function Manual Describes the specifications, system configurations, and setting method of GT MES interface function. (Sold separately) *1	SH-080654ENG (1D7M63)

*1 The manual in PDF-format is included in the GT Works2 and GT Designer2 products.

ABBREVIATIONS AND GENERIC TERMS IN THIS MANUAL

Abbreviations and generic terms used in this manual are as follows:

■ GOT

Abbreviations and generic terms		Description	
GOT1000 Series	GT SoftGOT1000	Abbreviation of GT SoftGOT1000	
	GT1595	GT1595-X Abbreviation of GT1595-XTBA, GT1595-XTBD	
	GT1585	GT1585V-S Abbreviation of GT1585V-STBA	
		GT1585-S Abbreviation of GT1585-STBA, GT1585-STBD	
	GT157□	GT1575V-S Abbreviation of GT1575V-STBA	
		GT1575-S Abbreviation of GT1575-STBA, GT1575-STBD	
		GT1575-V Abbreviation of GT1575-VTBA, GT1575-VTBD	
		GT1575-VN Abbreviation of GT1575-VNBA, GT1575-VNBD	
	GT156□	GT1572-VN Abbreviation of GT1572-VNBA, GT1572-VNBD	
		GT1565-V Abbreviation of GT1565-VTBA, GT1565-VTBD	
	GT155□	GT1562-VN Abbreviation of GT1562-VNBA, GT1562-VNBD	
		GT1555-V Abbreviation of GT1555-VTBD	
	GT155□	GT1555-Q Abbreviation of GT1555-QTBD, GT1555-QSBD	
		GT1550-Q Abbreviation of GT1550-QLBD	
	GT15□□, GT15		Abbreviation of GT1595, GT1585, GT157□, GT156□, GT155□
	GT115□	GT1155-Q Abbreviation of GT1155-QTBDQ, GT1155-QSBDQ, GT1155-QTBDA, GT1155-QSBDA, GT1155-QTBD, GT1155-QSBD	
		GT1150-Q Abbreviation of GT1150-QLBDQ, GT1150-QLBDA, GT1150-QLBD	
	Handy GOT	GT1155HS-Q Abbreviation of GT1155HS-QSBD	
GT1150HS-Q Abbreviation of GT1150HS-QLBD			
GT11□□, GT11		Abbreviation of GT1155-Q, GT1150-Q, GT11 Handy GOT	
GT1030		Abbreviation of GT1030-LBD, GT1030-LBD2, GT1030-LBDW, GT1030-LBDW2	
GT1020		Abbreviation of GT1020-LBD, GT1020-LBD2, GT1020-LBL, GT1020-LBDW, GT1020-LBDW2, GT1020-LBLW	
GT10□□, GT10		Abbreviation of GT1030, GT1020	
GOT900 Series		Abbreviation of GOT-A900 series, GOT-F900 series	
GOT800 Series		Abbreviation of GOT-800 series	

■ Communication unit

Abbreviations and generic terms	Description
Bus connection unit	GT15-QBUS,GT15-QBUS2,GT15-ABUS,GT15-ABUS2, GT15-75QBUSL,GT15-75QBUS2L,GT15-75ABUSL,GT15-75ABUS2L
Serial communication unit	GT15-RS2-9P,GT15-RS4-9S,GT15-RS4-TE
RS-422 conversion unit	GT15-RS2T4-9P,GT15-RS2T4-25P
Ethernet communication unit	GT15-J71E71-100
MELSECNET/H communication unit	GT15-J71LP23-25,GT15-J71BR13
MELSECNET/10 communication unit	GT15-75J71LP23-Z ^{*1} ,GT15-75J71BR13-Z ^{*2}
CC-Link communication unit	GT15-J61BT13,GT15-75J61BT13-Z ^{*3}
Interface converter unit	GT15-75IF900

*1 A9GT-QJ71LP23 + GT15-75IF900 set

*2 A9GT-QJ71BR13 + GT15-75IF900 set

*3 A8GT-J61BT13 + GT15-75IF900 set

Option unit

Abbreviations and generic terms		Description
Printer unit		GT15-PRN
Video/RGB unit	Video input unit	GT15V-75V4
	RGB input unit	GT15V-75R1
	Video/RGB input unit	GT15V-75V4R1
	RGB output unit	GT15V-75ROUT
CF card unit		GT15-CFCD
CF card extension unit*1		GT15-CFEX-C08SET
External I/O unit		GT15-DIO
Sound output unit		GT15-SOUT

*1 GT15-CFEX + GT15-CFEXIF + GT15-C08CF set.

Option

Abbreviations and generic terms		Description			
Memory card	CF card	GT05-MEM-16MC, GT05-MEM-128MC,	GT05-MEM-32MC, GT05-MEM-256MC	GT05-MEM-64MC,	
Memory card adaptor		GT05-MEM-ADPC			
Option function board		GT15-FNB, GT15-QFNB48M,	GT15-QFNB, GT15-MESB48M,	GT15-QFNB16M, GT11-50FNB	GT15-QFNB32M,
Battery		GT15-BAT,	GT11-50BAT		
Protective Sheet		GT15-90PSCB, GT15-80PSCB, GT15-70PSCB, GT15-60PSCB, GT15-50PSCB, GT11-50PSCB, GT11H-50PSC, GT10-30PSCB, GT10-20PSCB,	GT15-90PSGB, GT15-80PSGB, GT15-70PSGB, GT15-60PSGB, GT15-50PSGB, GT11-50PSGB, GT10-30PSGB, GT10-20PSGB,	GT15-90PSCW, GT15-80PSCW, GT15-70PSCW, GT15-60PSCW, GT15-50PSCW, GT11-50PSCW, GT10-30PSCW, GT10-20PSCW,	GT15-90PSGW, GT15-80PSGW, GT15-70PSGW, GT15-60PSGW, GT15-50PSGW, GT11-50PSGW, GT10-30PSGW, GT10-20PSGW
Protective cover for oil		GT05-90PCO, GT05-50PCO	GT05-80PCO,	GT05-70PCO,	GT05-60PCO,
USB environmental protection cover		GT15-UCOV,	GT11-50UCOV		
Stand		GT15-90STAND, GT05-50STAND	GT15-80STAND,	GT15-70STAND,	A9GT-50STAND,
Attachment		GT15-70ATT-98, GT15-60ATT-87,	GT15-70ATT-87, GT15-60ATT-77,	GT15-60ATT-97, GT15-50ATT-95W,	GT15-60ATT-96, GT15-50ATT-85
Backlight		GT15-90XLTT, GT15-70VLTN,	GT15-80SLTT, GT15-60VLTN,	GT15-70SLTT, GT15-60VLTN	GT15-70VLTN,
Multi-color display board		GT15-XHNB,	GT15-VHNB		
Connector conversion box		GT11H-CNB-37S			
Emergency stop sw guard cover		GT11H-50ESCOV			

■ Software

Abbreviations and generic terms	Description
GT Works2 Version□	SW□D5C-GTWK2-E, SW□D5C-GTWK2-EV
GT Designer2 Version□	SW□D5C-GTD2-E, SW□D5C-GTD2-EV
GT Designer2	Abbreviation of screen drawing software GT Designer2 for GOT1000/GOT900 series
GT Converter2	Abbreviation of data conversion software GT Converter2 for GOT1000/GOT900 series
GT Simulator2	Abbreviation of screen simulator GT Simulator 2 for GOT1000 / GOT900 series
GT SoftGOT1000	Abbreviation of monitoring software GT SoftGOT1000
GT SoftGOT2	Abbreviation of monitoring software GT SoftGOT2
GX Developer	Abbreviation of SW□D5C-GPPW-E(-EV)/SW□D5F-GPPW-E type software package
GX Simulator	Abbreviation of SW□D5C-LLT-E(-EV) type ladder logic test tool function software packages (SW5D5C-LLT (-EV) or later versions)
Document Converter	Abbreviation of document data conversion software Document Converter for GOT1000 series
PX Developer	Abbreviation of SW□D5C-FBDQ-E type FBD software package for process control

■ License key (for GT SoftGOT1000)

Abbreviations and generic terms	Description
License	GT15-SGTKEY-U, GT15-SGTKEY-P

■ License key (for GT SoftGOT2)

Abbreviations and generic terms	Description
License key	A9GTSOFT-LKEY-P (For DOS/ PC)
License key FD	SW5D5F-SGLKEY-J (For PC CPU module)

Others

Abbreviations and generic terms		Description
Omron PLC		Abbreviation of PLC manufactured by OMRON Corporation
KEYENCE PLC		Abbreviation of PLC manufactured by KEYENCE
Sharp PLC		Abbreviation of PLC manufactured by SHARP Corporation
JTEKT PLC		Abbreviation of PLC manufactured by JTEKT Corporation
Toshiba PLC		Abbreviation of PLC manufactured by TOSHIBA CORPORATION
HITACHI IES PLC		Abbreviation of PLC manufactured by Hitachi Industrial Equipment Systems Co., Ltd.
HITACHI PLC		Abbreviation of PLC manufactured by Hitachi, Ltd.
FUJI FA PLC		Abbreviation of PLC manufactured by Fuji Electric FA Components & Systems Co., Ltd.
Matsushita PLC		Abbreviation of PLC manufactured by Matsushita Electric Works, Ltd
Yaskawa PLC		Abbreviation of PLC manufactured by YASKAWA Electric Corporation
Yokogawa PLC		Abbreviation of PLC manufactured by Yokogawa Electric Corporation
Allen-Bradley PLC		Abbreviation of PLC manufactured by Allen-Bradley
Schneider Electric PLC		Abbreviation of PLC manufactured by Schneider Electric
SIEMENS PLC		Abbreviation of PLC manufactured by SIEMENS
α2		Abbreviation of α2 Simple Application Controller
Temperature controller	OMRON temperature controller	Abbreviation of temperature controller manufactured by OMRON
	SHINKO indicating controller	Abbreviation of temperature controller manufactured by Shinko Technos Co., Ltd.
	CHINO controller	Abbreviation of temperature controller manufactured by CHINO CORPORATION
	FUJI SYS temperature controller	Abbreviation of temperature controller manufactured by Fuji Electric Systems Co., Ltd.
	YAMATAKE temperature controller	Abbreviation of temperature controller manufactured by YAMATAKE
	YOKOGAWA temperature controller	Abbreviation of temperature controller manufactured by Yokogawa Electric Corporation
	RKC temperature controller	Abbreviation of temperature controller manufactured by RKC
PC CPU module		Abbreviation of PC CPU Unit manufactured by CONTEC CO., LTD
GOT (server)		Abbreviation of GOTs that use the server function
GOT (client)		Abbreviation of GOTs that use the client function
Windows® font		Abbreviation of TrueType font and OpenType font available for Windows® (Differs from the True Type fonts settable with GT Designer2)
Intelligent function module		Indicates the modules other than the PLC CPU, power supply module and I/O module that are mounted to the base unit.
MODBUS® /TCP		Generic term for the protocol designed to use MODBUS® protocol messages on a TCP/IPnetwork.

HOW TO READ THIS MANUAL

1 About each of functions

This manual includes information of GT Designer2 Version2.73B.

For additional functions of upgraded version, refer to the List of functions added by version upgrade.

2 Symbols

Following symbols are used in this manual.

BUS CONNECTION

2.1 System Configuration page 2-2

2 System equipment

(1) GOT

Image	NO.	Name	Model name	Model
		RS-232 interface • For RS-232 communication	— (Built into GOT)	 (RS-232)

Connectable model name
Not connectable model name

Applicable model name

- Shows GT15.
- Shows GT11.
- Shows GT11 (BUS).
- Shows GT11 (SERIAL).
- Shows GT10.
- Shows GT10(input power supply : 24V).
- Shows GT10(input power supply : 5V).

2.2.6 Verifying GOT recognizes controllers

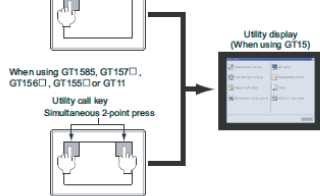
Verify the GOT recognizes controllers on [Communication Settings] of the Utility.

- Channel number of communication interface,
- communication drivers allocation status
- Communication unit installation status

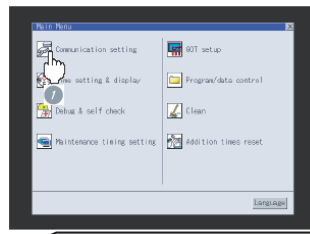
Remark
How to display Utility(at default)

When using GT1595
Utility call key
1-point press on GOT screen upper-left corner

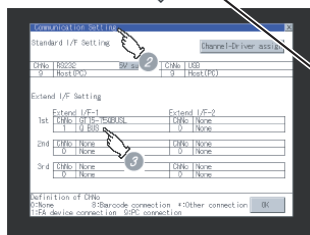
When using GT1585, GT157□, GT156□, GT155□ or GT11
Utility call key
Simultaneous 2-point press



Point
When setting the utility call key to 1-point
When setting [Pressing Time] to other than 0 second on the setting screen of the utility call key, press and hold the utility call key until the buzzer sounds. For the setting of the utility call key, refer to the following.
GT □ User's Manual



1 After powering up the GOT, touch [Main Menu] → [Communication setting] from the Utility.



- 2 The [Communication setting] appears.
- 3 Verify that the following communication driver name is displayed in the box for the communication interface to be used.
- Communication driver (either of the following)
Q BUS
A/QnA BUS
- 4 When the communication driver name is not displayed normally, carry out the following procedure again.
Section 2.2 Preparatory Procedures for Monitoring

- Point** Refers to the information required.
- Hint!** Refers to information useful for operation.
- Remark** Refers to the supplementary explanations for reference.

1 → 2 → 3 ...
Indicates the operation steps.

Menu and items are differentiated with parentheses.
[] : refers to menu in menu bar, refers, dialog box item or GOT utility menu.
□ : refers to dialog box buttons or PC keyboard.

Indicates the items in which the detailed explanation is described (manual, chapter, section, item of the manual).

*Since the above page was created for explanation purpose, it differs from the actual page

OVERVIEW

This manual describes the specifications, system configuration, setting method, connection cables and others for connecting the GOT to the $\alpha 2$.

For applying the setting examples in this manual to the actual system, make sure that the target system has no troubles on the control.

1.1 Connection to $\alpha 2$ page 1-4

This section describes the connections and functions supported by the GOT1000 Series.

Check the overview and others of the connection type in this section.



Devices and access range applicable to $\alpha 2$

For details on devices and access range applicable to the $\alpha 2$, refer to the following:

-  Section 2.5.1 Device range available for GOT1000 series

1 Relevant Manuals

There are the following manuals available for use of the GOT1000 series.












Refer to each manual suitable for the intended purpose.

The following manuals describe that the GOT cannot connect to the $\alpha 2$ connection because the manuals are written for commercially available products.

For referring to each manual, read the manuals so that the GOT can connect to the $\alpha 2$ connection. Refer to each of them according to the intended purpose.

(1) Installing software → Drawing → Data transfer













For operations from creating project data to transferring data to GOT, refer to the following manuals.

		
Purpose	GT Designer2 Version <input type="checkbox"/> Basic Operation/ Data Transfer Manual* ¹	GT Designer2 Version <input type="checkbox"/> Screen Design Manual* ¹
Installing product on PC		
Creating projects		
Creating screens		
Drawing figures		
Making common settings		
Placing/setting objects		
Transferring data for GOT		

*¹ GT Works2 and GT Designer2 include the manual in PDF format.

(2) Installing a GOT → Connecting with a PLC

For the operations from installing a GOT to communicating with a PLC CPU, refer to the following manuals.

	 (Included)		
Purpose	GT15 General Description GT11 General Description	GT15 User's Manual GT11 User's Manual	GOT1000 Series Connection Manual* ¹
Confirming part names and specifications of the GOT	 Overview	 Detailed	
Confirming the GOT installation method	 Overview	 Detailed	
Confirming the mounting method for communication units or option devices		 Detailed	 Overview
Confirming the PLC connection method			 Detailed
Confirming the utility operation method		 Detailed	
Confirming error codes (system alarm) displayed on GOT		 Detailed	

*1 Stored in the GT Works2/GT Designer2 in PDF format.

(3) Other manuals

The following manuals are also available.

The following manuals are stored in the GT Works2/GT Designer2 in PDF format.

- (a) GOT1000 Series Extended/Option Functions Manual
Describes how to use the ladder monitoring function, system monitor function and list editor for A/F, network monitor function, Q motion monitor function, servo amplifier monitor function, CNC monitor function, intelligent module monitor function.
- (b) GOT1000 Series Gateway Functions Manual
Describes how to use the gateway function.
- (c) GT Simulator2 Version □ Operating Manual
Describes how to simulate the created project data with the GT Simulator2.
- (d) GT Converter2 Version □ Operating Manual
Describes how to use the GT Converter2.
- (e) GOT1000 Series MES Interface Function Manual
Describes how to use the MES Interface Function.

1.1 Connection to $\alpha 2$







1 Connection to $\alpha 2$

The GOT can monitor devices of the $\alpha 2$.

The following shows the system configurations for each GOT model.

2 System configuration for $\alpha 2$ connection

The following shows the system configuration.

Communication Type	Communication Interface on GOT Side	Connected to	Model
RS-232 communication	Built in GT15, GT11 and GT10 body 	• $\alpha 2$	   (RS-232)
	RS-232 Communication Unit • GT15-RS2-9P 		

CONNECTION TO $\alpha 2$



2.1 System Configuration page 2-2

This section describes the equipment and cables needed when connecting a GOT to an $\alpha 2$. Select a system suitable for your application.

2.2 Connection Cable page 2-4

This section describes the specifications of the cables needed when connecting to an $\alpha 2$. Check the specifications of the connection cables.

2.3 Preparatory Procedures for Monitoring page 2-6

This section provides the procedures to be followed before performing monitoring in connection to an $\alpha 2$. This procedures are written on the step-by-step basis so that even a novice GOT user can follow them to start communications.

2.4 PLC Side Setting page 2-14

The PLC side settings for GOT connection are explained. When checking the PLC side settings, refer to this section. Check the specifications of the connection cables.

2.5 Device Range Available for GOT1000 Series page 2-15

This section describes the device range of $\alpha 2$ that can be used for GOT.

2.6 List of Functions Added by Version Upgrade page 2-16

This section describes the functions added by version upgrade of GT Designer2 or OS.

2.1 System Configuration

Select a system configuration suitable for your application.

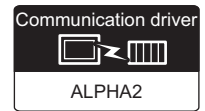


Conventions used in this section

Numbers (e.g. 1) of 1 System configuration and connection conditions correspond to the numbers (e.g. 1) of 2 System equipment.

Use these numbers as references when confirming models and applications.

2.1.1 When connecting to AL2-14MR, AL2-24MR



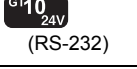




1 System configuration and connection conditions

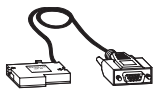


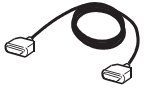




Connection conditions		System configuration	Model
No. of GOTs	Distance		
1	16.5m or less	<p>2 AL2-GSM-CAB 3 RS-232 cable 1)</p> <p>1.5m MAX15m</p>	
1	16.5m or less	<p>2 AL2-GSM-CAB 4 RS-232 cable 2)</p> <p>1.5m MAX15m</p>	

2 System equipment

(1) GOT

Image	No.	Name	Model name	Model
	1	RS-232 interface • For RS-232 communication	— (Built into GOT)	 
		RS-232 Communication Unit • For RS-232 communication	GT15-RS2-9P	

(2) Cable

Image	No.	Name	Model name	Model
	2	RS-232 interfaca cable	AL2-GSM-CAB	 
	3	RS-232 cable 1) • Between CPU, RS-232C adapter and connection cable	(To be prepared by the user.  Section 2.2 Connection Cable)	
	4	RS-232 cable 2) • Between RA232C interface cable and GOT		

2.2 Connection Cable

The RS-232 cable used for connecting the GOT to the $\alpha 2$ should be prepared by the user. The following provides connection diagrams for each cable, connector specifications and other information.

Model	Connection cable		
	GT15, GT11		GT10
	RS-232 cable (See Section 2.2.1)		RS-232 cable (See Section 2.2.1)
$\alpha 2$	AL2-14MR-□	RS-232 cable 1)	RS-232 cable 2)
	AL2-24MR-□		

2.2.1 RS-232 cable

The following shows the connection diagrams and connector specifications of the RS-232 cable used for connecting the GOT to the $\alpha 2$.

1 Connection diagram

(1) RS-232 cable 1) (For GT15, GT11)

GOT side		Cable connection and signal direction	$\alpha 2$ side (D sub 9-pin)	
Signal name	Pin No.		Pin No.	Signal name
CD/NC *1	1		1	—
RD(RXD)	2		2	RD
SD(TXD)	3		3	SD
ER(DTR)	4		4	ER
SG	5		5	SG
DR(DSR)	6		6	DR
RS(RTS)	7		7	RS
CS(CTS)	8		8	CS
—	9		9	—

*1 GT15:CD, GT11:NC

(2) RS-232 cable 2) (For GT10)

GOT side (terminal block)		Cable connection and signal direction	$\alpha 2$ side (D sub 9-pin)	
Signal name			Pin No.	Signal name
SD			1	—
RD			2	RD
ER			3	SD
DR			4	ER
SG			5	SG
RS			6	DR
CS			7	RS
NC			8	CS
NC			9	—

2 Connector specifications

(1) GOT side connector

Use the following as the RS-232 interface and RS-232 communication unit connector on the GOT. For the GOT side of the RS-232 cable, use a connector or connector cover applicable to the GOT connector.

GOT	Hardware version*1	Connector type	Model	Manufacturer
GT1595-X	-	9-pin D-sub (male) inch screw fixed type	17LE-23090-27(D4CK)	DDK Ltd
GT1585V-S	-		GM-C9RMDU11	Honda Tsushin Kogyo Co., Ltd
GT1585-STBA	B		17LE-23090-27(D4CK)	DDK Ltd
	C		GM-C9RMDU11	Honda Tsushin Kogyo Co., Ltd.
GT1585-STBD	-		17LE-23090-27(D4CK)	DDK Ltd
GT1575V-S	-		GM-C9RMDU11	Honda Tsushin Kogyo Co., Ltd.
GT1575-STBA	B		17LE-23090-27(D4CK)	DDK Ltd
	C		GM-C9RMDU11	Honda Tsushin Kogyo Co., Ltd.
GT1575-STBD	-		17LE-23090-27(D4CK)	DDK Ltd
GT1575-VTBA	D		GM-C9RMDU11	Honda Tsushin Kogyo Co., Ltd.
	E		17LE-23090-27(D4CK)	DDK Ltd
GT1575-VTBD	-		17LE-23090-27(D4CK)	DDK Ltd
GT1575-VN	-			
GT1572-VN	-			
GT1565-V	-			
GT1562-VN	-			
GT155□	-			
GT1155-Q, GT1150-Q	-		17LE-23090-27(D3CC)	
GT10	-		9-pin terminal block*2	MC1.5/9-G-3.5BK
GT15-RS2-9P	-	9-pin D-sub (male) inch screw fixed typ	17LE-23090-27(D4CK)	DDK Ltd

*1 For the confirmation method of GT15 hardware version, refer to the following manual.

 GT15 User's Manual

*2 The terminal block (MC1.5/9-ST-3.5 or corresponding product) of the cable side is packed together with the GT10.

(2) α2 side connector

Use the connector compatible with the α2 side module.

For details, refer to the following manual.

 α2 Simple Application Controller
HARDWARE MANUAL

3 Precautions when preparing a cable

The length of the RS-232 cable must be 16.5m or less.

2.3 Preparatory Procedures for Monitoring

The following the procedures to be taken before monitoring and corresponding reference sections.

Install the OS onto the GOT.

☞ Section 2.3.1
Installing OS onto GOT



Make sure that the OS is installed on the GOT.

☞ Section 2.3.2
Checking OS installation on GOT



Set the communication interface.
(Communication settings)

☞ Section 2.3.3
Setting communication interface (Communication settings)



Download the project data.

☞ Section 2.3.4
Downloading project data



Attach the communication unit and connect the cable.

☞ Section 2.3.5
Attaching communication unit and connecting cable



Make sure that the GOT recognizes the connected equipment.

☞ Section 2.3.6
Verifying GOT recognizes controllers



Make sure that monitoring is performed normally.

☞ Section 2.3.7
Checking for normal monitoring

Point

Confirming the $\alpha 2$ side setting

This section explains the GOT side setting. When confirming the PLC side setting, refer to the following.

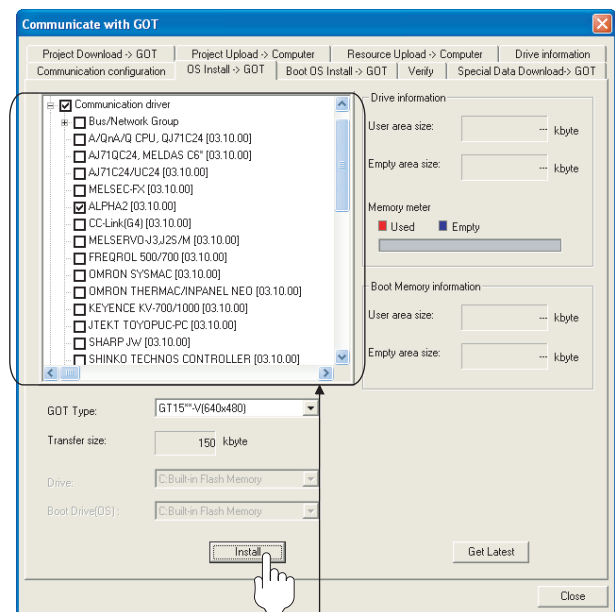
☞ Section 2.4 PLC Side Setting

2.3.1 Installing OS onto GOT

Install the standard monitor OS, communication driver and option OS onto the GOT.

For the OS installation methods, refer to the following manual.

☞ GT Designer2 Version Basic Operation/Data Transfer Manual



Check the following under the Communication driver.
ALPHA2

- 1 Check-mark a desired standard monitor OS, communication driver, option OS, and extended function OS, and click the **Install** button.

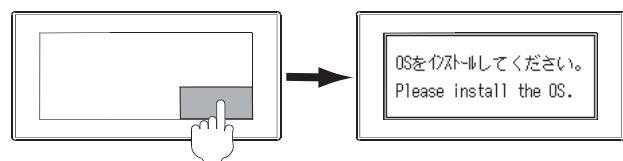
Point

Installing communication driver onto GT10

When installing communication driver onto the GOT, turn on the GOT in the OS transfer mode.

☞ GT10 User's Manual

(Operating of transmission mode)




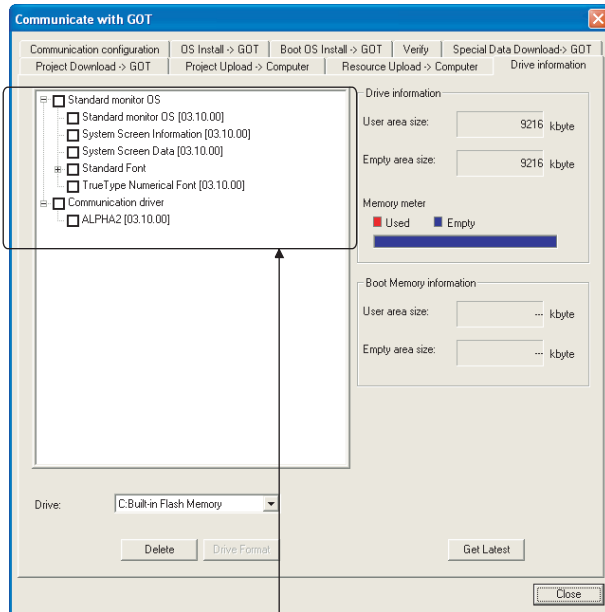
Turn on the GOT while the bottom right corner is touched.

2.3.2 Checking OS installation on GOT

Check if the OS is properly installed or not on the Drive information tab of GT Designer2.

For the operation on the Drive information tab, refer to the following manual.

 GT Designer2 Version □ Basic Operation/Data Transfer Manual



The OS has been installed successfully on the GOT if the following can be confirmed:


- 1) Standard monitor OS
- 2) Communication driver: ALPHA2

2.3.3 Setting communication interface (Communication settings)

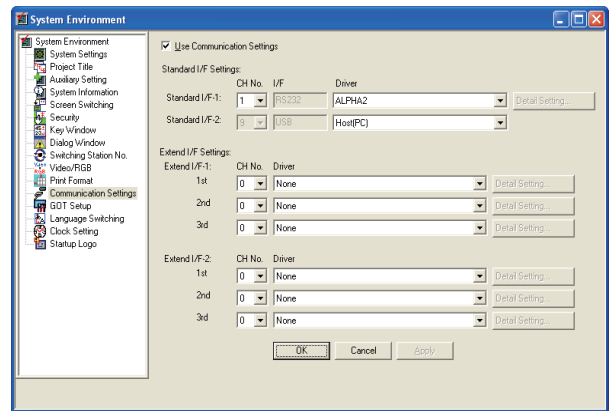
Make the GOT communication interface settings on [Communication Settings] of GT Designer2.

Select the same communication driver as the one installed on the GOT for each communication interface.

For details on [Communication Settings] of GT Designer2, refer to the following manual.

 GT Designer2 Version □ Screen Design Manual

1 Communication settings




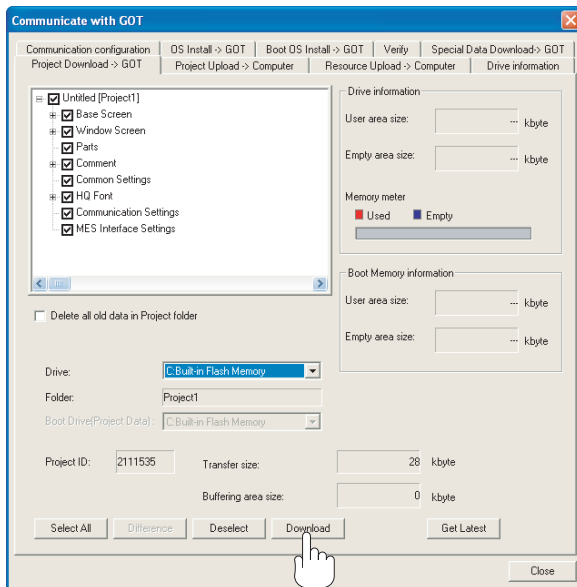
- 1 Set [1] to the channel No. used.
- 2 Set the driver to "ALPHA2".

2.3.4 Downloading project data

Download project data to the GOT.

For how to download project data, refer to the following manual.

 GT Designer2 Version Basic Operation/Data Transfer Manual



- 1 Check the necessary items and click the **Download** button.

2.3.5 Attaching communication unit and connecting cable

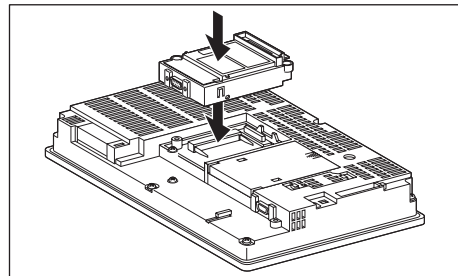
Point

Cautions when attaching the communication unit and connecting the cable

Shut off all phases of the GOT power supply before attaching the communication unit and connecting the cable.

1 Attaching the communication unit

- 1 Attach the serial communication unit to the extension unit connector on the GOT.



Point

Communication unit

For details on the RS-232 serial communication unit refer to the following manual.

 GT15 Serial Communication Unit User's Manual

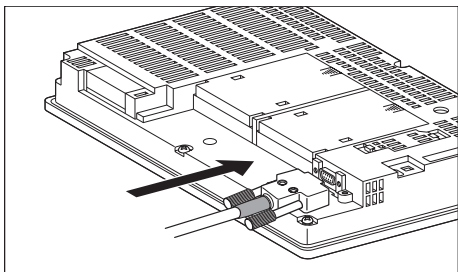
2 How to connect the cable

(1) How to connect the RS-232 cable

(a) For the GT15

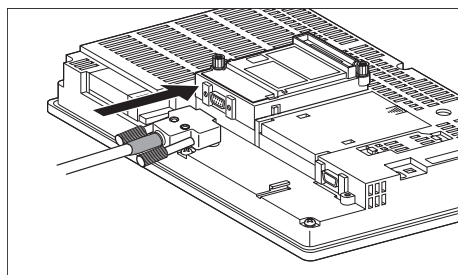
- connection to the RS-232 interface

- 1 Connect the RS-232 cable to the RS-232 interface on the GOT.



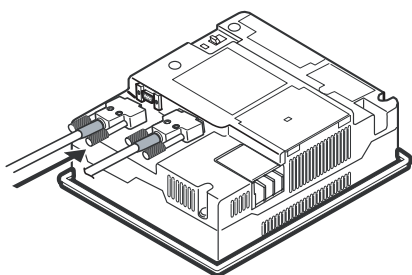
- connection to the RS-232 communication unit

- 1 Connect the RS-232 cable to the RS-232 communication unit on the GOT.



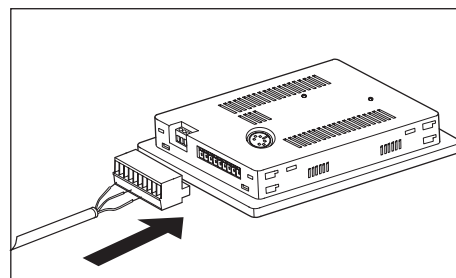
(b) For the GT11

- 1 Connect the RS-232 cable to the RS-232 interface on the GOT.

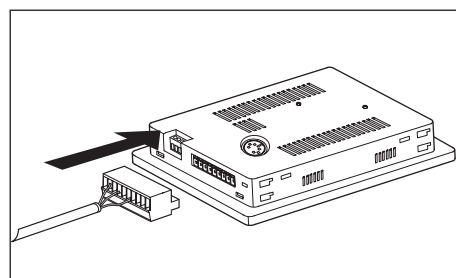


(c) For the GT10 (built-in RS-232 interface)

- 1 Connect the RS-232 cable to the terminal block packed together with the GOT.



- 2 Connect the terminal block to the GOT.



2.3.6 Verifying GOT recognizes controllers

Verify the GOT recognizes controllers on [Communication Settings] of the Utility.

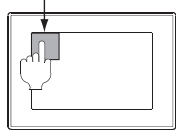
- Channel number of communication interface, communication drivers allocation status
- Communication unit installation status

Remark

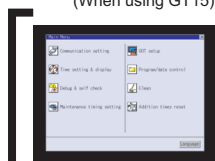
How to display Utility (at default)

When using GT1595 or GT1020

Utility call key
1-point press on GOT screen upper-left corner

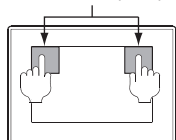


Utility display
(When using GT15)



When using GT1585, GT157□, GT156□, GT155□, GT11 or GT1030

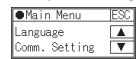
Utility call key
Simultaneous 2-point press



(When using GT11)



(When using GT10)

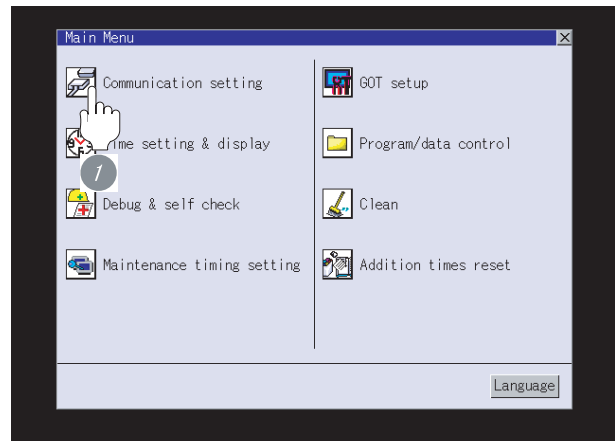


Point

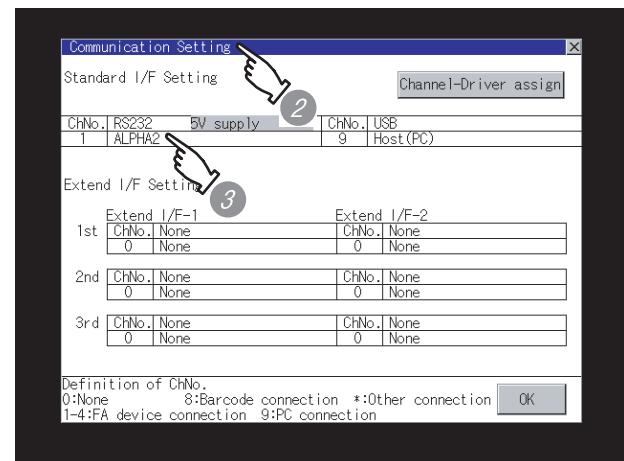
When setting the utility call key to 1-point

When setting [Pressing Time] to other than 0 second on the setting screen of the utility call key, press and hold the utility call key until the buzzer sounds. For the setting of the utility call key, refer to the following.

GT User's Manual



- 1 After powering up the GOT, touch [Main Menu] → [Communication setting] from the Utility.




- 2 The [Communication Setting] appears.
- 3 Verify that the following communication driver name is displayed in the box for the communication interface to be used.
 - Communication driver:
ALPHA2
 When the communication driver name is not displayed normally, carry out the following procedure again.

Section 2.3 Preparatory Procedures for Monitoring

(1) For GT15, GT11


- (a) Communication interface setting by the Utility
The communication interface setting can be changed on the Utility's "Communication setting" after downloading "Communication Settings" of project data.
For details on the Utility, refer to the following manual.

 GT15 User's Manual, GT11 User's Manual

- (b) Precedence in communication settings
When settings are made by GT Designer 2 or the Utility, the latest setting is effective.

(2) For GT10

- (a) Communication interface setting by the Utility
Although the communication interface setting can be checked, it cannot be changed.
For details on the Utility, refer to the following manual.

 GT10 User's Manual


- (b) Communication settings
Communication settings can be changed on only GT Designer2.

2.3.7 Checking for normal monitoring

1 Check for errors occurring on the GOT (for GT15, GT11)

Presetting the system alarm to project data allows you to identify errors occurred on the GOT, PLC CPU, servo amplifier and communications.

For details on the system alarm, refer to the following manual.

 GT □ User's Manual

(When using GT15)


Error code	Communication Channel No.
Debug/self check: System alarm display	
60T error:	ChNo.1 Reset
402 Communication timeout. Confirm communication pathway or modules. 17:17:36	
CPU error:	
No Error	
Network error:	
No Error	

Error message
Time of occurrence (Displayed only for errors)

Hint! Advanced alarm popup display

GT 15

With the advanced alarm popup display function, alarms are displayed as a popup display regardless of whether an alarm display object is placed on the screen or not (regardless of the display screen). Since comments can be flown from right to left, even a long comment can be displayed all. For details of the advanced popup display, refer to the following manual.

 GT Designer2 Version □ Screen Design Manual

2 Perform an I/O check (for GT15, GT11)

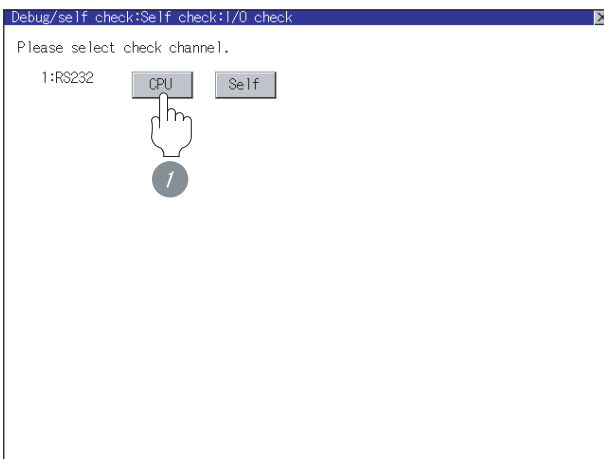
Whether the PLC can communicate with the GOT or not can be checked by the I/O check function.

If this check ends successfully, it means correct communication interface settings and proper cable connection.

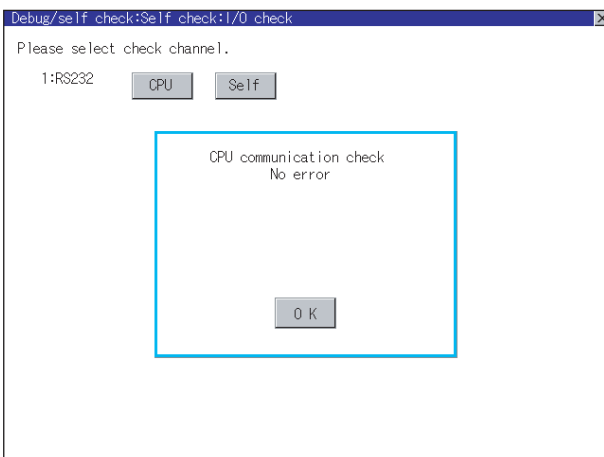
Display the I/O check screen by [Main Menu] → [Debug & self check] → [Self check] → [I/O check].

For details on the I/O check, refer to the following manual:

GT User's Manual



- 1 Touch [CPU] on the I/O check screen.
Touching [CPU] executes the communication check with the connected PLC.



- 2 When the communication screen ends successfully, the screen on the left is displayed.

3 Communication monitoring function (for GT10)

The communication monitoring is a function that checks whether the PLC can communicate with the GOT.

If this check ends successfully, it means correct communication interface settings and proper cable connection.

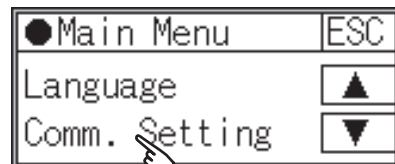
Display the communication monitoring function screen by [Main Menu] → [Comm. Setting] → [Comm. Monitor].

For details on the communication monitoring function, refer to the following manual:

GT10 User's Manual

(Operation of communication monitoring function screen)

Main Menu



Touch [Comm. Setting]



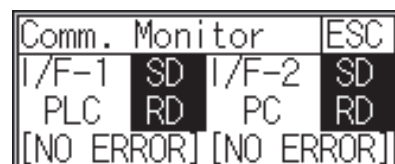
Touch [▼]



Communication settings




Touch [Comm. Monitor]



4 Confirming the PLC side setting

When connecting the GOT, setting is required for the PLC side.

Confirm if the PLC side setting is correct.

 Section 2.4 PLC Side Setting

All settings related to communications are complete now.

Create screens on GT Designer2 and download the project data again.


2.4 PLC Side Setting

Point

$\alpha 2$

For details of $\alpha 2$, refer to the following manuals.

 COMMUNICATION MANUAL
 $\alpha 2$ SIMPLE APPLICATION CONTROLLER

 PROGRAMMING MANUAL
 $\alpha 2$ SIMPLE APPLICATION CONTROLLER

2.4.1 Communication setting

Make the communication settings by front panel key or AL-VLS/WIN-E.

Item	Setting
Modem	other
Data Bit	8
Parity	None
Stop Bit	1
Baud Rate	9600

2.5 Device Range Available for GOT1000 Series

2.5.1 Device range available for GOT1000 series

The device ranges of α 2 that can be used for GOT are as follows.

Note that the device ranges in the following tables are the maximum values that can be set in GT Designer2.

Please make setting according to the specifications of the controller actually used.

When a non-existent device or device No. outside the range is specified, other objects may not be monitored.

	Device name	Setting range	Device No. representation
Bit device	System Bit (M) ^{*1}	M01 to M24	Decimal
	Input Terminal (I)	I01 to I15	
	External Input (EI)	EI129 to EI132	
	Output Terminal (O)	O01 to O09	
	External Output (EO)	EO129 to EO132	
	Key Input (K)	K01 to K08	
	Link Input (E)	E01 to E04	
	Link Output (A)	A01 to A04	
	Control Device (N)	N01 to N04	
	Communication Bit Device (CB) ^{*4}	CB001 to CB100	
Word device	Analog Input (AI) ^{*1*2}	AI01 to AI08	Decimal
	Communication Word Device (CW) ^{*2*4}	CW001 to CW100	
	Communication Word Device For Time Switch FB (CWT) ^{*3}	CWT001 to CWT100	

*1 Only reading is possible.

*2 Only 16-bit (1-word) specification is possible.

*3 Only 32-bit (2-word) designation is possible.
On the PLC side, CWT means CW that related TimeSwitchFunctionBlock.

*4 For details of CW and CB, refer to the following manuals.

 COMMUNICATION MANUAL α 2 SIMPLE APPLICATION CONTROLLER

2.6 List of Functions Added by Version Upgrade

The following describes the function added by version upgrade of GT Designer2 or OS.
For using the function below, use the GT Designer2 or OS of the stated version or later.

Model	Item	Description	Version of GT Designer2	Version of OS
GT15 GT11 Serial	α2 connection	Supporting connection to α2	2.73B	Communication driver ALPHA2 [03.10.**]
GT10 24V				Standard monitor OS [01.07.**] Communication driver ALPHA2 [01.00.**]

WARRANTY

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company. However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing on-site that involves replacement of the failed module.

[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 that admitted not to be so by 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 available 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 loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation of damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

5. Changes in product specifications

The specifications given in the catalogs, manuals or technical documents are subject to change without prior notice.

6. Product application

- (1) In using the Mitsubishi graphic operation terminal, the usage conditions shall be that the application will not lead to a major accident even if any problem or fault should occur in the graphic operation terminal device, and that backup and fail-safe functions are systematically provided outside of the device for any problem or fault.
- (2) The Mitsubishi graphic operation terminal has been designed and manufactured for applications in general industries, etc. Thus, applications in which the public could be affected such as in nuclear power plants and other power plants operated by respective power companies, and applications in which a special quality assurance system is required, such as for Railway companies or Public service purposes shall be excluded from the graphic operation terminal applications. In addition, applications in which human life or property that could be greatly affected, such as in aircraft, medical applications, incineration and fuel devices, manned transportation, equipment for recreation and amusement, and safety devices, shall also be excluded from the graphic operation terminal range of applications. However, in certain cases, some applications may be possible, providing the user consults their local Mitsubishi representative outlining the special requirements of the project, and providing that all parties concerned agree to the special circumstances, solely at the users discretion.

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GRAPHIC OPERATION TERMINAL

GOT1000

GOT1000 Series Connection Manual

(α 2 connection)

JY997D3090 1A

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