MITSUBISHI ELECTRIC

GT Works3 Add-on License for GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Fundamentals)

-SW1DND-GTSV-MZ

Safety Precautions

Always read the precautions before using this product.

Also read this manual and the relevant manuals mentioned in this manual carefully, and use the product properly while paying full attention to safety.

Note that the precautions in this manual apply only to this product.

The safety precautions are divided into the following levels: warnings and cautions.

⚠ **WARNING**	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 minor or moderate injury or property damage.

⚠ Note that failure to observe CAUTION may lead to a serious accident depending on the circumstances.

Make sure to observe both warnings and cautions to ensure personal safety.

Ensure that this manual is easily accessible to all users of this product.

[Test Operation Precautions]

⚠ WARNING

- Before testing the operation of a user-created screen (such as turning on or off a bit device, changing the current value of a word device, changing the set value or current value of a timer or counter, and changing the current value of a buffer memory), thoroughly read the manual to fully understand the operating procedure.
  During the test operation, never change the data of the devices which are used to perform significant operation for the system.
  Doing so may cause an accident due to a false output or malfunction.

[Precautions for Using a Data Storage]

⚠ WARNING

- Do not remove the SD card from drive A while the SD card is being accessed by the GOT, or the GOT may stop processing for about 20 seconds.
  During this stop, you cannot operate the GOT, and the functions running in the background, including the screen refresh, alarm, logging, and script, also stop.
  This stop affects the system operation, causing an accident.
  Before removing the SD card, check that the SD card access LED is off.
- Do not remove the data storage from the file server (drive N) that is being accessed by the GOT, or the system operation may be affected.
  Before removing the data storage, check the relevant system signal to make sure that the data storage is not being accessed.

[Precautions for Using a Data Storage]

⚠CAUTION

- Do not remove the data storage from the GOT while the data storage is being accessed by the GOT, or the data storage and files may be damaged.
  Before removing the data storage, check the SD card access LED, relevant system signal, or others to make sure that the data storage is not being accessed.

[Precautions for Remote Control]

⚠WARNING

- Remote control is available through a network by using GOT functions, including the SoftGOT-GOT link function, the remote personal computer operation function, the VNC server function, and the GOT Mobile function.
  If you remotely operate control equipment using such functions, the field operator may not notice the remote operation, leading to an accident.
  In addition, a communication delay or interruption may occur depending on the network environment, and remote control of control equipment cannot be performed normally in some cases.
  Before using the above functions to perform remote control, fully grasp the circumstances of the field site and ensure safety.
- When operating the server (GOT) of the GOT Mobile function to disconnect a client, notify the operator of the client about the disconnection beforehand.
  Not doing so may cause an accident.

[Design Precautions]

⚠WARNING

- To maintain the security (confidentiality, integrity, and availability) of the GOT and the system against unauthorized access, DoS[*1] attacks, computer viruses, and other cyberattacks from unreliable networks and devices via network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.
  Mitsubishi Electric shall have no responsibility or liability for any problems involving GOT trouble and system trouble by unauthorized access, DoS attacks, computer viruses, and other cyberattacks.
  *1 DoS: A denial-of-service (DoS) attack disrupts services by overloading systems or exploiting vulnerabilities, resulting in a denial-of-service (DoS) state.

[Precautions for Exclusive Authorization Control]

⚠WARNING

- Before using the GOT network interaction function to prevent simultaneous operations from multiple pieces of equipment, make sure you understand the function.
  You can enable or disable the exclusive authorization control of the GOT network interaction function for each screen. (For all screens, the exclusive authorization control is disabled by default.)
  Properly determine the screens for which the exclusive authorization control is required, and set the control by screen.
  A screen for which the exclusive authorization control is disabled is operable simultaneously from multiple pieces of equipment. Make sure to determine the operation period for each operator, fully grasp the circumstances of the field site, and ensure safety to perform operations.

Considerations for using GT Designer3

Memory capacity and hard disk space of your personal computer

For the required memory capacity and hard disk space, refer to the following.

📖GT Designer3 (GOT2000) Screen Design Manual

Error massage displayed at GT Designer3 startup or during data editing in GT Designer3

[Operation will be terminated because of insufficient memory. Would you like to stop?] If the above message appears, exit some running applications or restart Windows to free up memory.

Changing device types

If a word device and any bit of the device are specified, changing the device type from the bit data type to a word data type may display [??] as the device.

In such a case, specify the device again.

Example) D0.b0 → D0, D0.b5 → ??

Windows settings

If you change the Windows font size from the default, the panes and other items in GT Designer3 will appear improperly. Use GT Designer3 with the default Windows font size.

Contents

Introduction

This manual describes the features of servo amplifier add-on projects that are usable under the GT Works3 add-on license for GOT2000 enhanced drive control (servo) project data, and outlines how to use the projects.

For the details of screen specifications and how to use the projects, refer to the following.

📖GT Works3 Add-on License for GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Screen Details)

Manuals for GT Works3

The electronic manuals related to this product are installed together with the screen design software.
If you need the printed manuals, consult your local sales office.

Manuals for GT Designer3 (GOT2000)

Point

e-Manual refers to the Mitsubishi Electric FA electronic book manuals that can be browsed using a dedicated tool.
e-Manual has the following features:

- Required information can be cross-searched in multiple manuals.
- Other manuals can be accessed from the links in the manual.
- Hardware specifications of each part can be found from the product figures.
- Pages that users often browse can be bookmarked.
- Sample programs can be copied to the engineering tool.

■Screen design software-related manuals

Manual name	Manual number (Model code)	Format
GT Works3 Installation Instructions	-	PDF
GT Designer3 (GOT2000) Screen Design Manual	SH-081220ENG (1D7ML9)	PDF e-Manual
GT Converter2 Version3 Operating Manual for GT Works3	SH-080862ENG	PDF e-Manual
GOT2000 Series MES Interface Function Manual for GT Works3 Version1	SH-081228ENG	PDF e-Manual

■Connection manuals

Manual name	Manual number (Model code)	Format
GOT2000 Series Connection Manual (Mitsubishi Electric Products) For GT Works3 Version1	SH-081197ENG (1D7MJ8)	PDF e-Manual
GOT2000 Series Connection Manual (Non-Mitsubishi Electric Products 1) For GT Works3 Version1	SH-081198ENG	PDF e-Manual
GOT2000 Series Connection Manual (Non-Mitsubishi Electric Products 2) For GT Works3 Version1	SH-081199ENG	PDF e-Manual
GOT2000 Series Connection Manual (Microcomputers, MODBUS/Fieldbus Products, Peripherals) For GT Works3 Version1	SH-081200ENG	PDF e-Manual
GOT2000 Series Handy GOT Connection Manual For GT Works3 Version1	SH-081867ENG (1D7MS9)	PDF e-Manual
GOT2000 Series Connection Manual (α2 Connection) for GT Works3 Version1	JY997D52301	PDF e-Manual

■GT SoftGOT2000 manuals

Manual name	Manual number (Model code)	Format
GT SoftGOT2000 Version1 Operating Manual	SH-081201ENG	PDF e-Manual
MELSOFT GT OPC UA Client Operating Manual	SH-082174ENG	PDF

■GOT2000 series user's manuals

Manual name	Manual number (Model code)	Format
GOT2000 Series User's Manual (Hardware)	SH-081194ENG (1D7MJ5)	PDF e-Manual
GOT2000 Series User's Manual (Utility)	SH-081195ENG (1D7MJ6)	PDF e-Manual
GOT2000 Series User's Manual (Monitor)	SH-081196ENG (1D7MJ7)	PDF e-Manual

■GOT SIMPLE series user's manuals

Manual name	Manual number	Format
GOT SIMPLE Series User's Manual	JY997D52901	PDF e-Manual

■Manuals related to GT Works3 add-on projects

Manual name	Manual number (Model code)	Format
GT Works3 Add-on License for GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Fundamentals)	SH-082072ENG (1D7MV1)	PDF e-Manual
GT Works3 Add-on License for GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Screen Details)	SH-082074ENG (1D7MV3)	PDF e-Manual

Manuals for GT Designer3 (GOT1000)

Refer to the Help and manuals for GT Designer3 (GOT1000).

Abbreviations, Generic Terms, and Model Icons

The following shows the abbreviations, generic terms, and meanings of icons used in this manual.

GOT

■GOT2000 series

Abbreviations and generic terms			Description	Meaning of icon	
				Available	Unavailable
GT27	GT27-X	GT2715-X	GT2715-XTBA GT2715-XTBD	GT 27	GT 27
	GT27-S	GT2712-S	GT2712-STBA GT2712-STWA GT2712-STBD GT2712-STWD		
		GT2710-S	GT2710-STBA GT2710-STBD		
		GT2708-S	GT2708-STBA GT2708-STBD		
	GT27-V	GT2710-V	GT2710-VTBA GT2710-VTWA GT2710-VTBD GT2710-VTWD		
		GT2708-V	GT2708-VTBA GT2708-VTBD		
		GT2705-V	GT2705-VTBD		
GT25			All GT25 models	GT 25	GT 25
	GT25-W	GT2512-WX	GT2512-WXTBD GT2512-WXTSD	GT 25	GT 25
		GT2510-WX	GT2510-WXTBD GT2510-WXTSD		
		GT2507-W	GT2507-WTBD GT2507-WTSD		
		GT2507T-W	GT2507T-WTSD		
	GT25-S	GT2512-S	GT2512-STBA GT2512-STBD		
		GT2512F-S	GT2512F-STNA GT2512F-STND		
	GT25-V	GT2510-V	GT2510-VTBA GT2510-VTWA GT2510-VTBD GT2510-VTWD		
		GT2510F-V	GT2510F-VTNA GT2510F-VTND		
		GT2508-V	GT2508-VTBA GT2508-VTWA GT2508-VTBD GT2508-VTWD		
		GT2508F-V	GT2508F-VTNA GT2508F-VTND		
		GT2505-V	GT2505-VTBD		
	GT25HS-V Handy GOT	GT2506HS-V	GT2506HS-VTBD	GT 2506 HS	GT 2506 HS
		GT2505HS-V	GT2505HS-VTBD	GT 2505 HS	GT 2505 HS
GT23	GT23-V	GT2310-V	GT2310-VTBA GT2310-VTBD	GT 23	GT 23
		GT2308-V	GT2308-VTBA GT2308-VTBD		

Abbreviations and generic terms			Description	Meaning of icon	
				Available	Unavailable
GT21			All GT21 models		
	GT21-W	GT2107-W	GT2107-WTBD GT2107-WTSD		
	GT21-Q	GT2105-Q	GT2105-QTBDS GT2105-QMBDS		
	GT21-R	GT2104-R	GT2104-RTBD		
	GT21-P	GT2104-P	GT2104-PMBD		
			GT2104-PMBDS		
			GT2104-PMBDS2		
			GT2104-PMBLS		
		GT2103-P	GT2103-PMBD		
			GT2103-PMBDS		
			GT2103-PMBDS2		
			GT2103-PMBLS		
GT SoftGOT2000			GT SoftGOT2000 Version1		

■GOT SIMPLE series

Abbreviations and generic terms		Description	Meaning of icon	
			Available	Unavailable
GS25		GS2512-WXTBD		
GS21	GS21-W-N	GS2110-WTBD-N GS2107-WTBD-N		
	GS21-W	GS2110-WTBD GS2107-WTBD		

■GOT1000 series, GOT900 series, and GOT800 series

Abbreviations and generic terms	Description	Meaning of icon
		Available / Unavailable
GOT1000 series	GOT1000 series	-
GOT900 series	GOT-A900 series GOT-F900 series	-
GOT800 series	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
MELSECNET/H communication unit	GT15-J71LP23-25 GT15-J71BR13
CC-Link IE TSN communication unit	GT25-J71GN13-T2
CC-Link IE Controller Network communication unit	GT15-J71GP23-SX
CC-Link IE Field Network communication unit	GT15-J71GF13-T2
CC-Link communication unit	GT15-J61BT13
Wireless LAN communication unit	GT25-WLAN
Serial multi-drop connection unit	GT01-RS4-M
Connection conversion adapter	GT10-9PT5S
Field network adapter unit	GT25-FNADP
Ethernet communication unit	GT25-J71E71-100
RS-232/485 signal conversion adapter	GT14-RS2T4-9P

Option unit

Abbreviations and generic terms	Description
Printer unit	GT15-PRN
Video input unit	GT27-V4-Z (A set of GT16M-V4-Z and GT27-IF1000)
RGB input unit	GT27-R2 GT27-R2-Z (A set of GT16M-R2-Z and GT27-IF1000)
Video/RGB input unit	GT27-V4R1-Z (A set of GT16M-V4R1-Z and GT27-IF1000)
RGB output unit	GT27-ROUT GT27-ROUT-Z (A set of GT16M-ROUT-Z and GT27-IF1000)
Digital video output unit	GT27-VHOUT
Multimedia unit	GT27-MMR-Z (A set of GT16M-MMR-Z and GT27-IF1000)
Video signal conversion unit	GT27-IF1000
External I/O unit	GT15-DIO GT15-DIOR
Sound output unit	GT15-SOUT
SD card unit	GT21-03SDCD

Option

Abbreviations and generic terms	Description
SD card	NZ1MEM-2GBSD NZ1MEM-4GBSD NZ1MEM-8GBSD NZ1MEM-16GBSD L1MEM-2GBSD L1MEM-4GBSD
Battery	GT11-50BAT GT15-BAT
Protective sheet	GT27-15PSGC GT25-12WPSGC GT25-12PSGC GT25-10WPSGC GT25-10PSGC GT25-08PSGC GT21-07WPSGC GT25T-07WPSVC GT25-05PSGC GT25-05PSGC-2 GT21-05PSGC GT21-04RPSGC-UC GT21-03PSGC-UC GT21-04PSGC-UC GT27-15PSCC GT25-12WPSCC GT25-12PSCC GT25-10WPSCC GT25-10PSCC GT25-08PSCC GT25-05PSCC GT25-05PSCC-2 GT25-12PSCC-UC GT25-10PSCC-UC GT25-08PSCC-UC GT21-07WPSCC GT21-05PSCC GT21-04RPSCC-UC GT21-04PSCC-UC GT21-03PSCC-UC GT16H-60PSC GT14H-50PSC
Antibacterial/antiviral protective sheet	GT25-12PSAC GT25-10PSAC GT25-08PSAC
Environmental protection sheet	GT25F-12ESGS GT25F-10ESGS GT25F-08ESGS
Protective cover for oil	GT20-15PCO GT20-12PCO GT20-10PCO GT20-08PCO GT21-12WPCO GT21-10WPCO GT21-07WPCO GT25T-07WPCO GT25-05PCO GT25-05PCO-2 GT05-50PCO GT21-04RPCO GT10-30PCO GT10-20PCO
USB environmental protection cover	GT25-UCOV GT25-05UCOV GT21-WUCOV

Abbreviations and generic terms	Description
Stand	GT15-90STAND GT15-80STAND GT15-70STAND GT05-50STAND GT25-10WSTAND GT21-07WSTAND GT25T-07WSTAND
Attachment	GT15-70ATT-98 GT15-70ATT-87 GT15-60ATT-97 GT15-60ATT-96 GT15-60ATT-87 GT15-60ATT-77 GT21-04RATT-40
Panel-mounted USB port extension	GT14-C10EXUSB-4S GT10-C10EXUSB-5S
Connector conversion box	GT16H-CNB-42S GT16H-CNB-37S GT11H-CNB-37S
Emergency stop switch guard cover	GT16H-60ESCOV GT14H-50ESCOV
Wall-mounting attachment	GT14H-50ATT

Software

■Software related to GOT

Abbreviations and generic terms	Description
GT Works3	SW1DND-GTWK3-J, SW1DND-GTWK3-E, SW1DND-GTWK3-C
GT Designer3 Version1	Screen design software GT Designer3 for GOT2000 and GOT1000 series
GT Designer3	Screen design software for GOT2000 series included in GT Works3
GT Designer3 (GOT2000)	
GT Designer3 (GOT1000)	Screen design software for GOT1000 series included in GT Works3
Speech synthesis license	GT Works Text to Speech License (SW1DND-GTVO-M)
Add-on license	GT Works3 add-on license for GOT2000 enhanced drive control (servo) project data (SW1DND-GTSV-MZ)
GENESIS64 Advanced	GENESIS64 server application (GEN64-APP)
GENESIS64 Basic SCADA	GENESIS64 server application (GEN64-BASIC)
GENESIS64	Generic term of GENESIS64 Advanced and GENESIS64 Basic SCADA
GOT Mobile function license for GT SoftGOT2000	License required to use the GOT Mobile function with GT SoftGOT2000 (SGT2K-WEBSKEY-□)
GT Simulator3	Screen simulator GT Simulator3 for GOT2000, GOT1000, and GOT900 series
GT SoftGOT2000	GOT2000 compatible HMI software GT SoftGOT2000
GT OPC UA Client	MELSOFT GT OPC UA Client (SW1DNN-GTOUC-MD)
GT Converter2	Data conversion software GT Converter2 for GOT1000 and GOT900 series
GT Designer2 Classic	Screen design software GT Designer2 Classic for GOT900 series
GT Designer2	Screen design software GT Designer2 for GOT1000 and GOT900 series
DU/WIN	Screen design software FX-PCS-DU/WIN for GOT-F900 series

■Software related to iQ Works

Abbreviations and generic terms	Description
iQ Works	iQ Platform compatible engineering environment MELSOFT iQ Works
MELSOFT Navigator	Integrated development environment software included in SW□DND-IQWK (iQ Platform compatible engineering environment MELSOFT iQ Works) (□ represents a version.)
MELSOFT iQ AppPortal	SW□DND-IQAPL-M type integrated application management software (□ represents a version.)

■Other software

Abbreviations and generic terms		Description
GX Works3		SW□DND-GXW3-E (-EA, -EAZ) type programmable controller engineering software (□ represents a version.)
GX Works2		SW□DNC-GXW2-E (-EA, -EAZ) type programmable controller engineering software (□ represents a version.)
Controller simulator	GX Simulator3	Simulation function of GX Works3
	GX Simulator2	Simulation function of GX Works2
	GX Simulator	SW□D5C-LLT-E (-EV) type ladder logic test tool function software package (SW5D5C-LLT (-V) or later versions) (□ represents a version.)
GX Developer		SW□D5C-GPPW-E (-EV)/SW□D5F-GPPW (-V) type software package (□ represents a version.)
GX LogViewer		SW□DNN-VIEWER-E type software package (□ represents a version.)
MI Configurator		Configuration and monitor tool for Mitsubishi Electric industrial computers (SW□DNNMICONF-M) (□ represents a version.)
PX Developer		SW□D5C-FBDQ-E type FBD software package for process control (□ represents a version.)
MT Works2		Motion controller engineering environment MELSOFT MT Works2 (SW□DND-MTW2-E) (□ represents a version.)
MT Developer		SW□RNC-GSV type integrated start-up support software for motion controller Q series (□ represents a version.)
CW Configurator		Setting/monitoring tools for the C Controller module and MELSECWinCPU(SW□DND-RCCPU-E) (□ represents a version.)
MR Configurator2		SW□DNC-MRC2-E type servo configuration software (□ represents a version.)
MR Configurator		MRZJW□-SETUP type servo configuration software (□ represents a version.)
FR Configurator2		Inverter setup software (SW□DND-FRC2-E) (□ represents a version.)
FR Configurator		Inverter setup software (FR-SW□-SETUP-WE) (□ represents a version.)
NC Configurator2		CNC parameter setting support tool (FCSB1221)
NC Configurator		CNC parameter setting support tool
FX Configurator-FP		Parameter setting, monitoring, and testing software package for FX3U-20SSC-H (SW□D5CFXSSCE) (□ represents a version.)
FX3U-ENET-L Configuration tool		FX3U-ENET-L type Ethernet module setting software (SW1D5-FXENETL-E)
RT ToolBox2		Robot program creation software (3D-11C-WINE)
RT ToolBox3		Robot program creation software (3F-14C-WINE)
MX Component		MX Component Version□ (SW□D5C-ACT-E, SW□D5C-ACT-EA) (□ represents a version.)
MX Sheet		MX Sheet Version□ (SW□D5C-SHEET-E, SW□D5C-SHEET-EA) (□ represents a version.)
CPU Module Logging Configuration Tool		CPU module logging configuration tool (SW1DNN-LLUTL-E)

■License key (for GT SoftGOT2000)

Abbreviations and generic terms	Description
License key	GT27-SGTKEY-U

■Others

Abbreviations and generic terms	Description
IAI	IAI Corporation
AZBIL	Azbil Corporation
OMRON	OMRON Corporation
KEYENCE	KEYENCE CORPORATION
JTEKT ELECTRONICS (formerly KOYO EI)	JTEKT ELECTRONICS CORPORATION (formerly KOYO ELECTRONICS INDUSTRIES CO., LTD.)
JTEKT	JTEKT Corporation
SHARP	Sharp Corporation
SHINKO	Shinko Technos Co., Ltd.
CHINO	CHINO CORPORATION
TOSHIBA	TOSHIBA CORPORATION
SHIBAURA MACHINE	SHIBAURA MACHINE CO., LTD.
PANASONIC	Panasonic Corporation
PANASONIC IDS	Panasonic Industrial Devices SUNX Co., Ltd.
HITACHI IES	Hitachi Industrial Equipment Systems Co., Ltd.
HITACHI	Hitachi, Ltd.
HIRATA	Hirata Corporation
FUJI	FUJI ELECTRIC CO., LTD.
MURATEC	Muratec products manufactured by Murata Machinery, Ltd.
YASKAWA	YASKAWA Electric Corporation
YOKOGAWA	Yokogawa Electric Corporation
RKC	RKC INSTRUMENT INC.
ALLEN-BRADLEY	Allen-Bradley products manufactured by Rockwell Automation, Inc.
CLPA	CC-Link Partner Association
GE	GE Intelligent Platforms, Inc.
HMS	HMS Industrial Networks
LS ELECTRIC (formerly LS IS)	LS ELECTRIC Co., Ltd (formerly LS Industrial Systems Co., Ltd.)
MITSUBISHI INDIA	Mitsubishi Electric India Pvt. Ltd.
ODVA	Open DeviceNet Vendor Association, Inc.
SCHNEIDER	Schneider Electric SA
SICK	SICK AG
SIEMENS	Siemens AG
SCHNEIDER EJH	Schneider Electric Japan Holdings Ltd.
PLC	Programmable controller manufactured by its respective company
Control equipment	Control equipment manufactured by its respective company
Temperature controller	Temperature controller manufactured by its respective company
Indicating controller	Indicating controller manufactured by its respective company
Controller	Controller manufactured by its respective company
Industrial switch (for CC-Link IE TSN Class B)	CC-Link IE TSN Class B (Synchronized Realtime Communication) hub certified by CC-Link Partner Association
Industrial switch (for CC-Link IE TSN Class A)	CC-Link IE TSN Class A (Realtime Communication) hub certified by CC-Link Partner Association

Terminology

The following shows the terms used in this manual.

Term	Description
Object	Function that operates on the screen according to the value of the specified device
Input object	Touch switch object, numerical input object, text input object, or alarm display object
Attribute	Setting item of a figure or object Example) Monitor device, font, and text color
Label	System label, global label, or label (GT Designer3)
Window	Modeless window, which permits user operations on the other windows while it is open. Example) [Environmental Setting] window
Dialog	Modal window, which does not permit user operations on the other windows while it is open. Example) [Type Setting] dialog
Data storage	SD card, USB memory, CF card in a card reader, or other storage media
Ethernet interface	GOT interface for Ethernet communication: • Ethernet standard port • Ethernet standard port 1 • Ethernet standard port 2 • Ethernet extended port
GT SoftGOT2000 (Single channel)	GT SoftGOT2000 capable of monitoring channel No. 1 only
GT SoftGOT2000 (Multiple channels)	GT SoftGOT2000 capable of monitoring channels No. 1 to No. 4
GT Works3 add-on license	License (product ID) required to use the servo amplifier add-on projects.
Servo amplifier add-on project	Project data for interacting with servo amplifiers. Usable by activating the GT Works3 add-on license (by entering the product ID number indicated in the License Certificate).

MEMO

1 GT Works3 Add-on License for GOT2000 Enhanced Drive Control (Servo) Project Data

The GT Works3 add-on license for GOT2000 enhanced drive control (servo) project data is required to use servo amplifier add-on projects.
With the servo amplifier add-on projects, you can use the drive product interaction functions to improve the efficiency of work, such as the startup of a servo system.
For items required to use the projects, refer to the following.
☞ Page 27 Items Required to Use the Servo Amplifier Add-On Projects

1.1 Features

The following shows the features of the servo amplifier add-on projects.

Drive product interaction functions to improve work efficiency

The drive product interaction functions are provided to improve the efficiency of work, such as the startup, adjustment, maintenance, troubleshooting, and monitoring of a servo system.
For the details, refer to the following.
☞ Page 21 Features of the Drive Product Interaction Functions

Easy-to-use project data

The add-on projects for each GOT resolution are provided.
The screen data contained in the projects is usable without any change.

Simultaneous monitoring of the data and settings of multiple axes

Up to 16 axes are monitored simultaneously on one screen.
You can view the machine diagnosis results of multiple axes simultaneously, and move to the detailed information screen for each axis.
You can also centrally manage alarm events for multiple axes, and store alarm history data.

Remote monitoring

The ready-to-use mobile screens for the GOT Mobile function are provided to monitor a servo system remotely from your device such as a smartphone or tablet.

■Screen examples

- Machine diagnosis (estimation list, graph)
- Alarm history
- Operation monitor
- Effective load ratio

Point

To use the mobile screens, purchase the license for the GOT Mobile function.
For the details, refer to the following.
☞ Page 28 Other licenses

MEMO

2 Features of the Drive Product Interaction Functions

2.1 Drive product interaction functions

The drive product interaction functions use the screen data of servo amplifier add-on projects and the GOT extended functions to interact with servo amplifiers.

2.2 Functions useful for startup and adjustment

You can set parameters and perform a test operation for system startup.

Tuning

The gain parameters, machine resonance suppression filters, and other settings are adjustable.

[Tuning] screen (B-30100)

Servo amplifier graph (extended function)

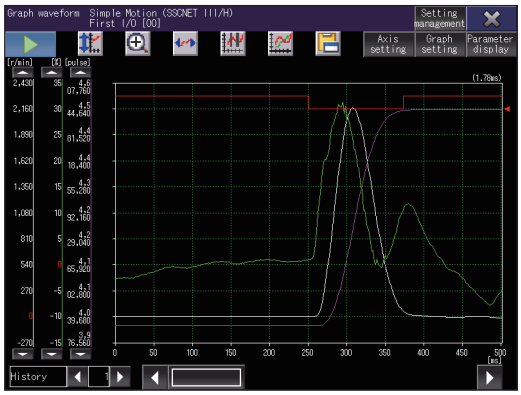
The servo amplifier graph is an extended function of the GOT that reads the waveform data measured by a servo amplifier and displays the data in graph form.

You can check the gain adjustment result with the waveform on a graph, and readjust the gains immediately.

The servo amplifier graph screen is brought up from an applicable screen of the servo amplifier add-on projects.

Applicable screen of the servo amplifier add-on project

Servo amplifier graph screen



2.3 Functions useful for predictive and preventive maintenance

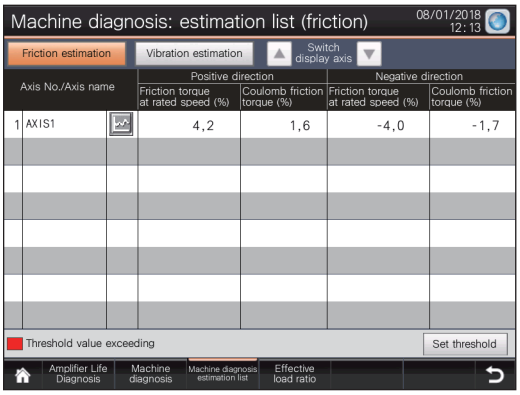
The GOT displays the data read from a servo amplifier on a graph or list, helping predictive and preventive maintenance.

Machine diagnosis

With the machine diagnosis function for servo amplifiers, the GOT collects the estimated friction values from servo amplifiers. Comparing the estimated values collected by the GOT with predetermined threshold values helps you to determine the state of wear or deterioration of the machine parts.

You can set the values estimated at the installation of equipment as standard values. Taking the differences between the standard values and newly estimated values, you can determine the state or degree of deterioration of the machine parts.

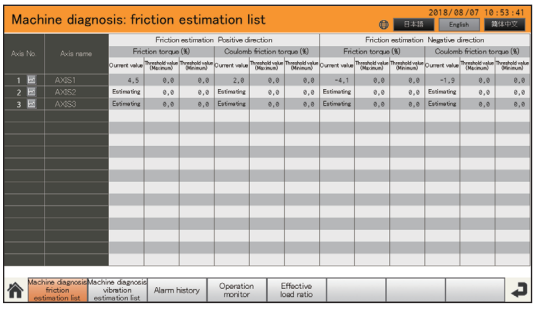
Maintenance screen (list)



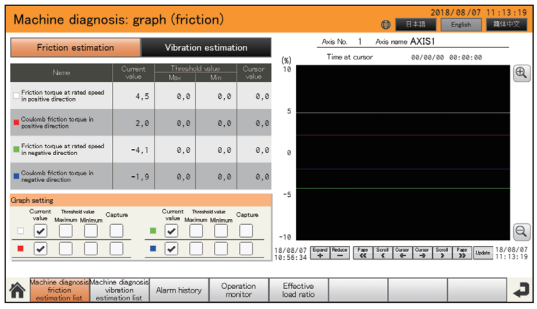
Maintenance screen (graph)

Mobile screens to perform this function are provided.

Mobile screen for maintenance (list)



Mobile screen for maintenance (graph)



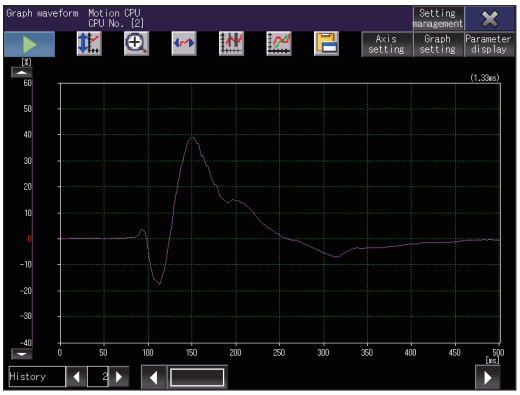
Superimposing waveforms on the servo amplifier graph (extended function)

The servo amplifier graph displays an existing waveform data and the current waveform data superimposed.

For example, you can view the normal waveform data measured upon equipment startup and the current abnormal waveform data superimposed, helping you to find the deterioration of the machine parts.

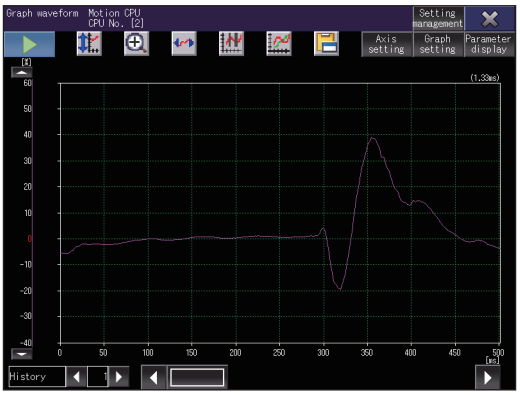
The servo amplifier graph screen is brought up from an applicable screen of the servo amplifier add-on projects.

Normal waveform

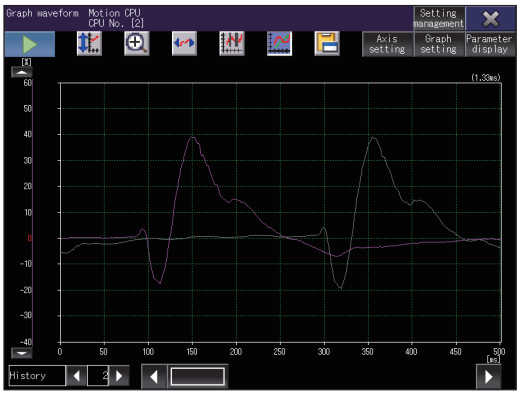


+

Abnormal waveform (current waveform)



The normal and abnormal waveforms are superimposed.



2.4 Functions useful for troubleshooting

You can identify the cause of an error based on the alarm data or other data in a servo amplifier.

Alarm

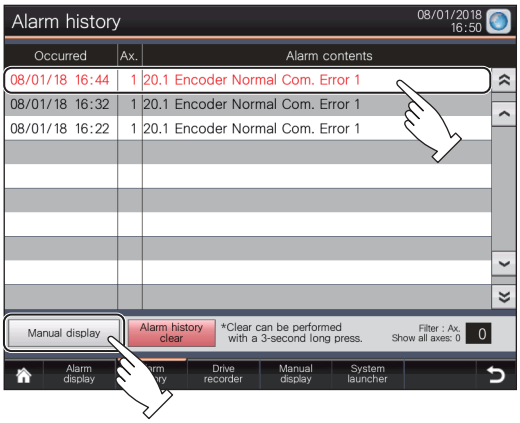
You can check the occurrence time and details of an alarm in a servo amplifier on the GOT.

Select an alarm event on the [Alarm History] screen (B-31100) and touch the [Manual display] button to display the [Manual Display] screen (B-31200). You can check the details of the selected alarm event.

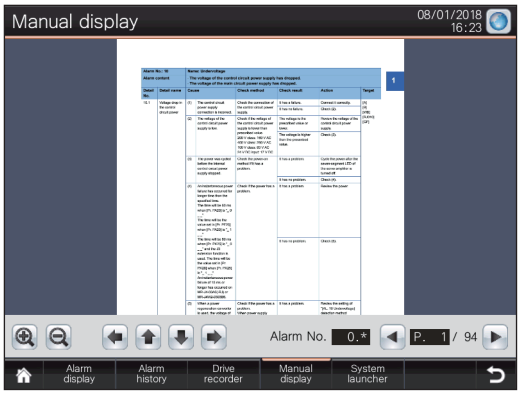
The [Manual Display] screen (B-31200) displays the following manual.

MELSERVO-J4 Servo Amplifier Instruction Manual (Troubleshooting)

[Alarm History] screen (B-31100)

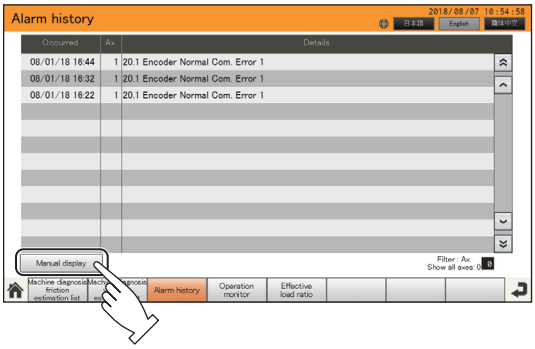


[Manual Display] screen (B-31200)

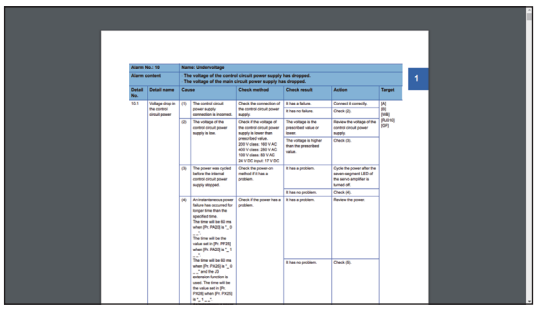


Mobile screens to perform this function are provided.

[Mobile_Alarm History] screen (M-30030)



Mobile screen for manual display



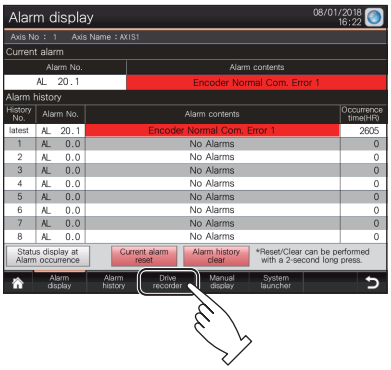
Drive recorder (extended function)

The drive recorder reads the data before and after an alarm from a servo amplifier, and displays the data on the information list. (The data includes the motor current and position command data.)

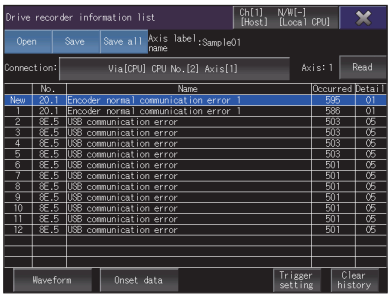
Select an alarm event from the list to display the data before and after the event in graph form.

The drive recorder information list screen is brought up from an applicable screen of the servo amplifier add-on projects.

[Alarm Display] screen (B-31000)



Drive recorder information list screen



Graph display screen

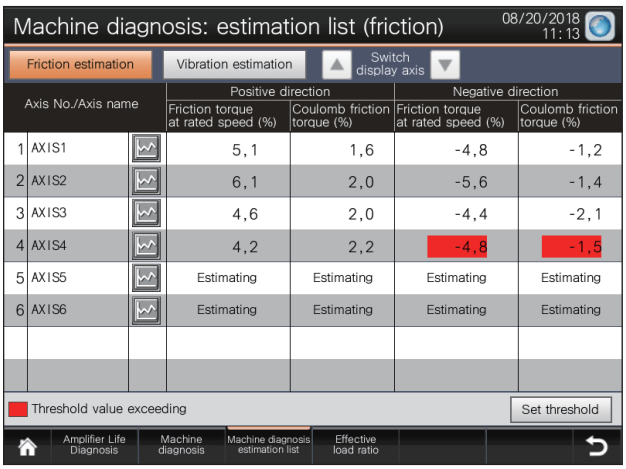
2.5 Functions useful for checking the equipment status

You can check the status of a servo amplifier in operation and I/O signals on the GOT.

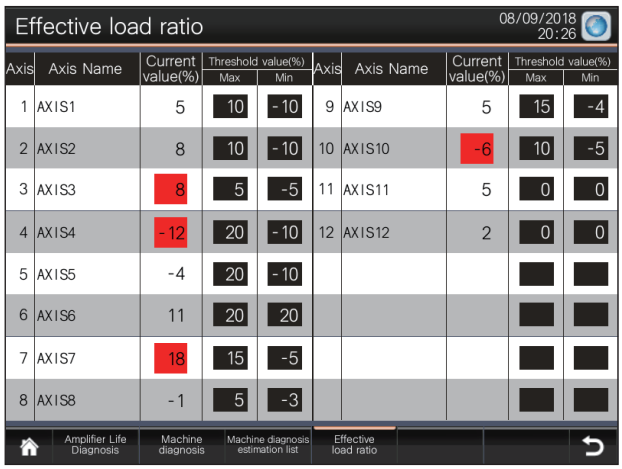
Simultaneous monitoring of multiple axes

Monitoring the data of multiple axes on one screen helps you to determine the state of the entire equipment.
You can immediately check the state of age deterioration of machine parts in each axis, and identify which axis is under abnormal conditions.

[Machine Diag .Estimation (Fric)] screen (B-30700)



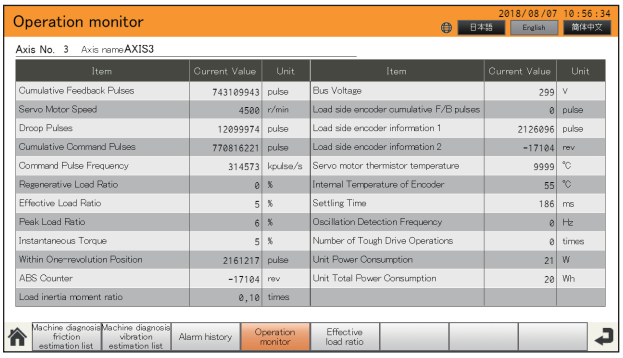
[Effective Load Ratio] screen (B-30900)



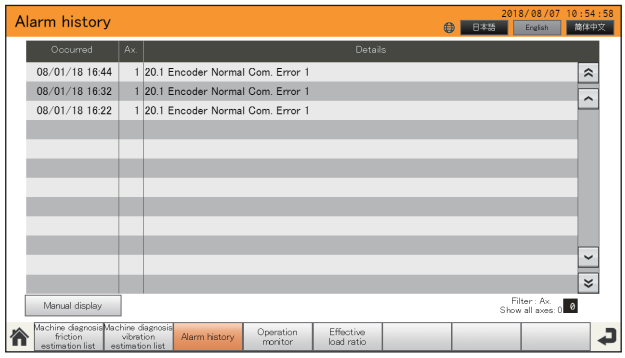
Remote maintenance using the GOT Mobile function

Using the mobile screens of the servo amplifier add-on projects, you can check whether equipment is under abnormal conditions or check the operation status of equipment remotely from your tablet or personal computer.

[Mobile_Operation Monitor] screen (M-30040)



[Mobile_Alarm History] screen (M-30030)



3 Items Required to Use the Servo Amplifier Add-On Projects

3.1 GT Works3 add-on license

The GT Works3 add-on license (product ID) is required to use the servo amplifier add-on projects.

The following shows the items supplied with the license.

Model	Item	Quantity
SW1DND-GTSV-MZ	Instructions for Registering the GT Works3 Add-on License for GOT2000 Enhanced Drive Control (Servo) Project Data	1
	END-USER SOFTWARE LICENSE AGREEMENT	1
	License Certificate	1

3.2 Servo amplifier add-on projects

The servo amplifier add-on projects are used for interacting with servo amplifiers.

To use the projects, activate the GT Works3 add-on license. Start the installer for the projects, and enter the product ID number indicated in the License Certificate.

The following shows the items supplied with the projects.

File	Remarks
Servo amplifier add-on projects	Project data included in the GT Works3 DVD. The screen data for interacting with servo amplifiers are contained.
PDF manuals for document display	The files are required to use the document display function.
CSV file containing page numbers for document display	The file is required to link the document display function and the alarm function.

Operating environment

The servo amplifier add-on projects are used in GT Designer3.

For the operating environment for GT Designer3, refer to the following.

GT Designer3 (GOT2000) Screen Design Manual

Applicable GOT models

The following shows GOT models that support the servo amplifier add-on projects.

- GT27
- GT25
- GS25*1

The projects are for the horizontally-oriented GOTs.

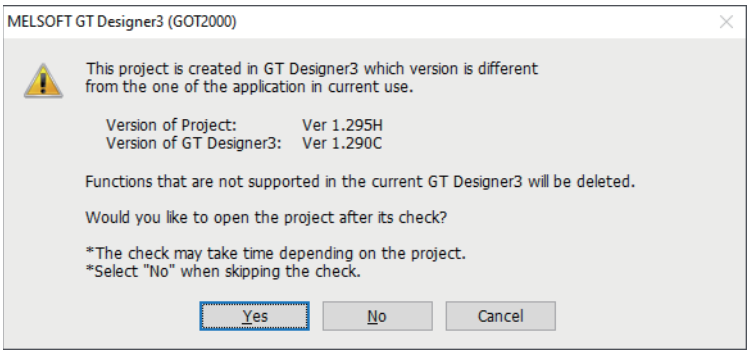
*1 For GS25, use the screen for GT25**-WX by changing the GOT type.

3.3 MELSOFT products

The following shows the software required to use the servo amplifier add-on projects.

Software	Version	Remarks
GT Designer3	1.205P or later*1	This software is required to use a servo amplifier add-on project to create another project.
MT Developer2	1.137T or later	This software is required to use the effective load ratio function of a motion controller.

*1 If the following dialog appears, install the latest version of GT Designer3.



3.4 Other licenses

To use the mobile screens of the servo amplifier add-on projects, purchase the license for the GOT Mobile function.
The following shows the license required to perform the GOT Mobile function.

License	Model	Description
GOT Mobile Function License *1	GT25-WEBSKEY-1	1 license
	GT25-WEBSKEY-5	5 licenses
	GT25-WEBSKEY-10	10 licenses
	GT25-WEBSKEY-20	20 licenses

*1 Each GOT requires one license.

4 Installation and Uninstallation Procedures

4.1 Preparation before installation

Log in to your personal computer with administrator privileges.
Before installing our products, close all running applications.
Otherwise, the products may not be installed properly.

4.2 Installation procedure

Installing GT Designer3

If GT Designer3 version earlier than 1.205P has been installed, install the latest version of GT Designer3.
For the latest version of GT Designer3 Version1 (GOT2000), contact your local sales office.

Point

If GT Designer3 version 1.205P or later has been installed, installation is not required.

Installing servo amplifier add-on projects

Point

When you install servo amplifier add-on projects, enter the product ID.
For details, refer to the following manual supplied with the GT Works3 add-on license.
Instructions for Registering the GT Works3 Add-on License for GOT2000 Enhanced Drive Control (Servo) Project Data

Installation from the GT Works3 DVD

If GT Designer3 version 1.205P or later is contained in the GT Works3 DVD, setup.exe is stored in the following directory.
Run the setup.exe file to install servo amplifier add-on projects.
Directory: Disk2\AddonProject\GTSV

4.3 Uninstallation procedure

1. On the Control Panel in Windows, select [Uninstall a program].
2. Select [GT Works3 Add-on License (Servo Project Data)], and click the [Uninstall] button.

4.4 Precautions

- Make sure that the system does not enter a power saving mode (standby, hibernation, or sleep mode) during software installation.
- If a warning message from your security software appears, follow the on-screen instructions to proceed with the installation.

5 Using Servo Amplifier Add-On Projects

5.1 How to use servo amplifier add-on projects

The following shows two methods of using a servo amplifier add-on project.

- Adding the screen data selected from a servo amplifier add-on project to an existing project
- Creating a new project based on a servo amplifier add-on project

The following outlines how to use a servo amplifier add-on project.

For the detailed procedure and the specifications of the screen data in servo amplifier add-on projects, refer to the following.

📖GT Works3 Add-on License For GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Screen Details)

Importing screen data from a servo amplifier add-on project

1. Prepare the requirements to use a servo amplifier add-on project.

☞ Page 33 Required equipment and software

2. Change settings in an existing project to avoid duplicate settings between the existing project and the add-on project.

☞ Page 34 Preparation

3. Import the screen data from the add-on project to the existing project.

After importing the data, change settings in the project.

☞ Page 34 Importing screen data from a servo amplifier add-on project

4. Store the PDF manuals for document display and the CSV file containing page numbers for document display on an SD card.

Skip this step if you do not use the document display function.

☞ Page 37 Storing the data for document display on an SD card

5. Write the project data to the GOT.

☞ Page 38 Transferring data to the GOT

6. Before using the drive product interaction functions, configure the following settings on the GOT.

- Axes used in your servo system
- Threshold values for the machine diagnosis function and the effective load ratio function
- Standard values for the machine diagnosis function

☞ Page 40 Configuring initial settings for the drive product interaction functions on the GOT

Importing a servo amplifier add-on project

1. Prepare the requirements to use a servo amplifier add-on project.

☞ Page 33 Required equipment and software

2. Import the add-on project on the [Utilize Data (Project)] dialog in GT Designer3.

☞ Page 35 Importing a servo amplifier add-on project

3. Store the PDF manuals for document display and the CSV file containing page numbers for document display on an SD card.

Skip this step if you do not use the document display function.

☞ Page 37 Storing the data for document display on an SD card

4. Write the project data to the GOT.

☞ Page 38 Transferring data to the GOT

5. Before using the drive product interaction functions, configure the following settings on the GOT.

- Axes used in your servo system
- Threshold values for the machine diagnosis function and the effective load ratio function
- Standard values for the machine diagnosis function

☞ Page 40 Configuring initial settings for the drive product interaction functions on the GOT

5.2 Required equipment and software

The following shows the equipment and software required to use the servo amplifier add-on projects.

Item	Use
GOT2000 series (GT27, GT25, GS25)*3	Monitoring a controller
USB cable (GT09-C30USB-5P)	Transferring data
Battery	Retaining the following data • Clock setting data • System alarm data
SD card	Storing the data for the following functions • Axis switching function • Machine diagnosis function • Effective load ratio function • Alarm display • Drive recorder • Servo amplifier graph
PLC CPU *1	Controlling equipment
Simple motion module *1 Motion controller *1	Controlling a servo amplifier
Servo amplifier *1	Controlling a servo motor
Personal computer	Designing screens
Tablet *2	GOT Mobile function
GOT Mobile function license *2	License required to use the GOT Mobile function
GT Works3 add-on license	License required to use the servo amplifier add-on projects

*1 For the details of the requirements for using a PLC CPU, motion controller, simple motion module, and servo amplifier, refer to the following.
Manual for the equipment used

*2 This item is required to use the GOT Mobile function.

*3 For GS25, use the screen for GT25**-WX by changing the GOT type.

5.3 Importing screen data from a servo amplifier add-on project

The following outlines how to add the screen data selected from a servo amplifier add-on project to an existing project.

Preparation

Check the following settings in an existing project, and take the corresponding actions as necessary.

Setting	Action
Mitsubishi Electric servo amplifier connection sample	When Mitsubishi Electric Servo Amplifier MELSERVO-J4 Series MR-J4-B Sample Screen Data version 4 or earlier is used, delete all the data in the sample screen folder. If you save the sample screen data to a different file, you do not need to delete the file.
GOT internal device GOT Mobile device	Change the settings in an existing project to avoid duplicate settings between the existing project and a servo amplifier add-on project. For the setting ranges in servo amplifier add-on projects, refer to the following. 📖GT Works3 Add-on License For GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Screen Details)
Screen number	
ID, number, and parts number used for any function running in the background on the GOT	
Script symbol	
Label (GT Designer3)	

Importing screen data from a servo amplifier add-on project

1. Import screen data from a servo amplifier add-on project to an existing project.

Select all screen data of the servo amplifier add-on project to import.

After importing the data, delete unnecessary screen data when changing the settings in the project.

2. Check the settings in the [Utilize] dialog.

3. Change the controller settings according to your system architecture.

For the detailed procedure, refer to the following.

📖GT Works3 Add-on License For GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Screen Details)

Changing the settings in the project after importing data

1. Change the settings of labels (GT Designer3).

2. Change the settings in the [GOT Environmental Setting] window.

3. Change the alarm settings.

4. Change the script symbol settings related to your servo system.

5. Delete unnecessary screen data.

For the detailed procedure, refer to the following.

📖GT Works3 Add-on License For GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Screen Details)

5.4 Importing a servo amplifier add-on project

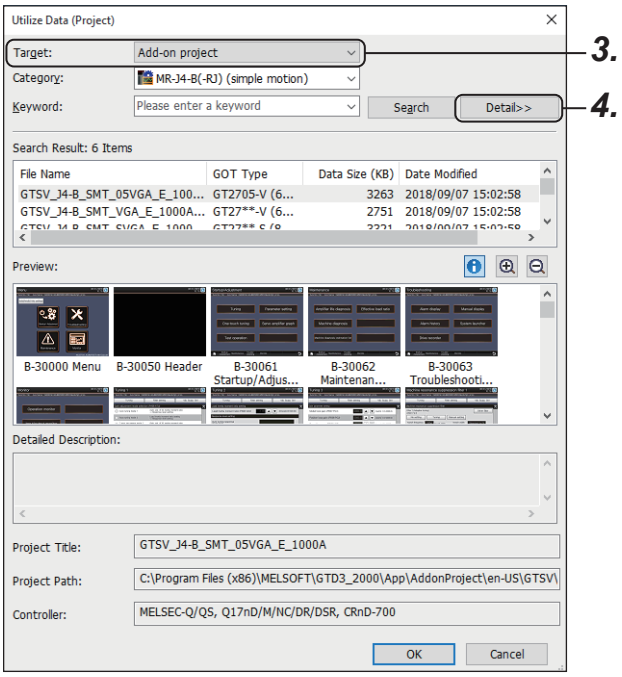
Import a servo amplifier add-on project on the [Utilize Data (Project)] screen in GT Designer3.

1. Start GT Designer3.

2. In the [Select Project] window, click the [Utilize Data] button.

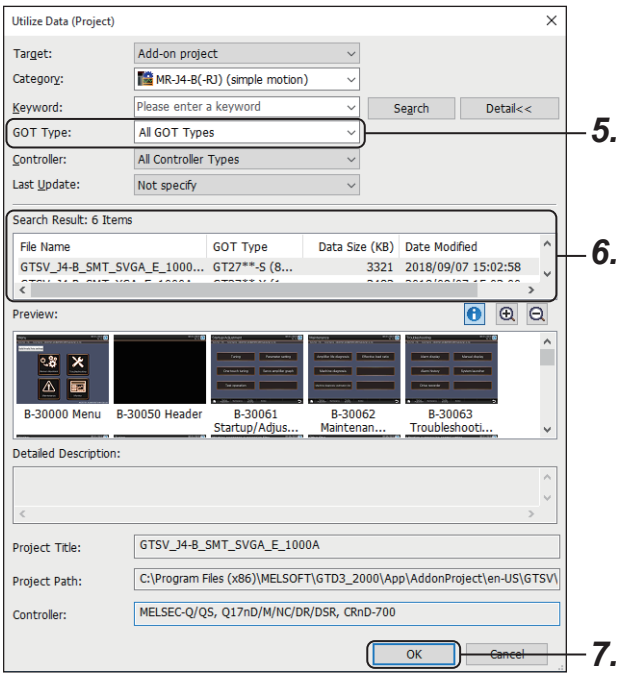
If the [Select Project] window does not appear, select [Project] → [Utilize Data] from the menu.

3. In the [Utilize Data (Project)] window, select [Add-on project] for [Target].



4. Click the [Detail>>] button to display [GOT Type].

5. Select a GOT type for [GOT Type].



6. In [Search Result], select a servo amplifier add-on project according to your system architecture.

- When a motion controller is used: GTSV_J4-B_MT_***_*_*****.GTADP
- When a simple motion module is used: GTSV_J4-B_SMT_***_*_*****.GTADP

7. Click the [OK] button to open the selected project.

8. Change the settings according to your system architecture.

For information on how to change the settings, refer to the following.

📖GT Works3 Add-on License For GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Screen Details)

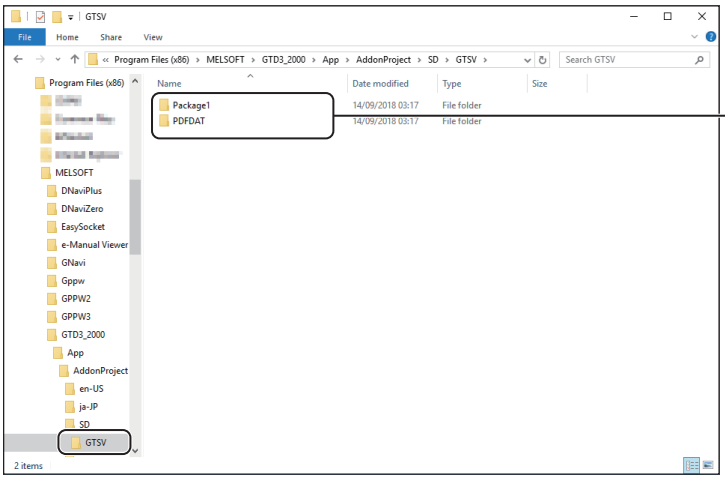
5.5 Storing the data for document display on an SD card

To check the details of the alarm occurring in a servo amplifier on the GOT, store the data for document display on an SD card and insert it.

Skip this step if you do not use the document display function.

1. Copy the Package1 folder and the PDFDAT folder stored in the following directory to an SD card.

Directory: (Installation path to GT Designer3)\GTD3_2000\App\AddonProject\SD\GTSV



2. Check that the folders and files are stored in the SD card as shown below.

Drive A (SD card)

- Package1
  - GTSV_Alarm_PageInfo.csv : Manual page search file for alarm display
  - userdata
    - 30000_j.pdf : Manual for alarm display (GOT Mobile function) in Japanese
    - 30001_e.pdf : Manual for alarm display (GOT Mobile function) in English
    - 30002_c.pdf : Manual for alarm display (GOT Mobile function) in Chinese

    } For the GOT Mobile function
  - PDFDAT
    - 30000_j.pdf : Manual for alarm display (document display) in Japanese
    - 30001_e.pdf : Manual for alarm display (document display) in English
    - 30002_c.pdf : Manual for alarm display (document display) in Chinese

    } For GOT

3. Insert the SD card into the GOT.

5.6 Transferring data to the GOT

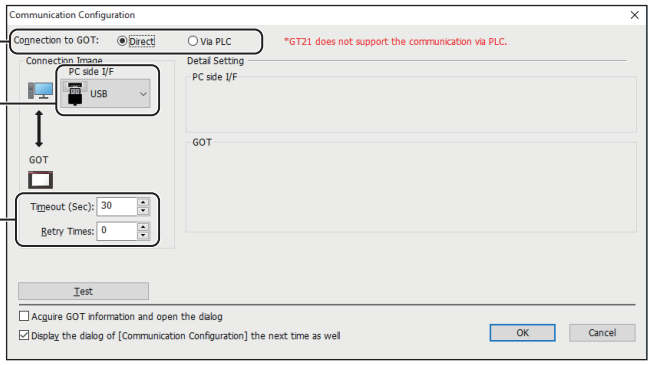
Write the completed project data to the GOT.

The following shows how to transfer the data from a personal computer to the GOT via USB.

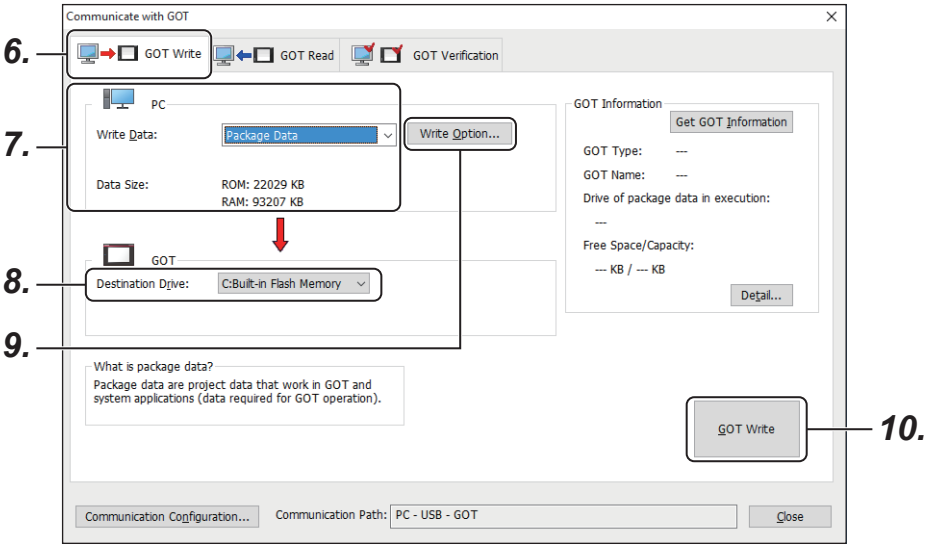
For other communication methods, refer to the following.

GT Designer3 (GOT2000) Screen Design Manual

1. Select [Communication] → [Write to GOT] from the menu to display the [Communication Configuration] dialog.
2. Select [Direct] for [Connection to GOT].



3. Select [USB] for [PC side I/F].
4. Set [Timeout (Sec)] and [Retry Times].
5. Click the [OK] button to display the [Communicate with GOT] dialog.
6. Select the [GOT Write] tab.



7. Select [Package Data] for [Write Data].

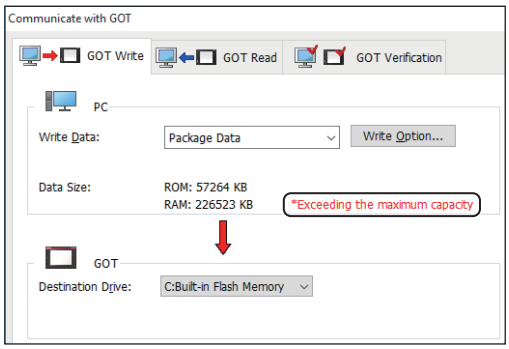
Check the size of the data to be transferred with [Data Size], and make sure that the destination drive has enough free space for storing the data.

If the destination drive does not have enough free space, a message appears saying [Exceeding the maximum capacity]. In this case, refer to Point shown below.

8. Select a drive for [Destination Drive].
9. To add or delete a system application or special data to/from the package data, click the [Write Option] button to display the [Write Option] dialog and configure the setting.
10. Click the [GOT Write] button.

Point

If the message saying [Exceeding the maximum capacity] appears, data cannot be written to the GOT.



Determine functions to be used, and delete unnecessary screens and settings by referring to the following.

GT Works3 Add-on License For GOT2000 Enhanced Drive Control (Servo) Project Data Manual (Screen Details)

5.7 Configuring initial settings for the drive product interaction functions on the GOT

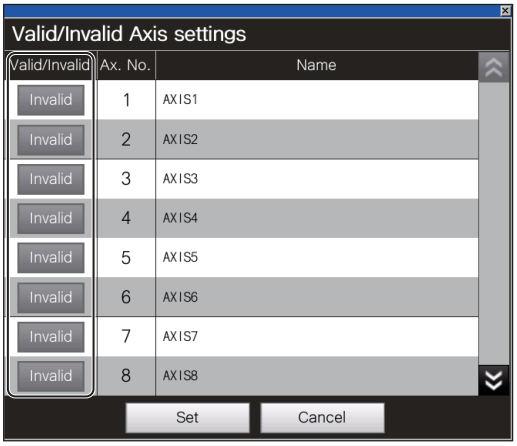
Setting valid and invalid axes

In the [Valid/Invalid Axis Settings] window (W-32501), select an axis to be monitored.

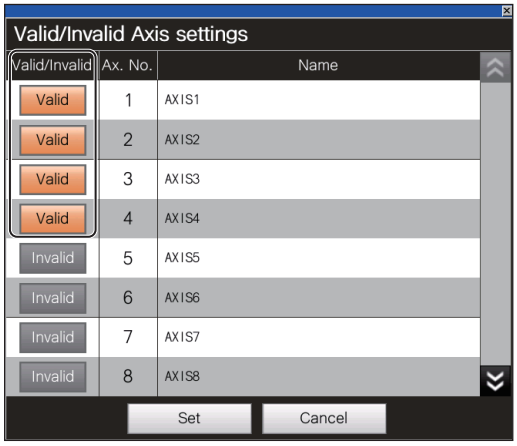
The settings of all axes are set to [Invalid] at the first startup of the GOT.

Set [Valid] for target axes used in your system.

[Valid/Invalid Axis Settings] window (W-32501) at the first startup



[Valid/Invalid Axis Settings] window (W-32501) in which axes are selected



Point

- The [Valid/Invalid Axis Settings] window (W-32501) appears if all axes are set to [Invalid] at the GOT startup.
- The valid and invalid settings will be retained if the GOT is turned off.

Setting threshold values (Machine diagnosis function and effective load ratio function)

■[Machine Diagnosis] screen (B-30600)

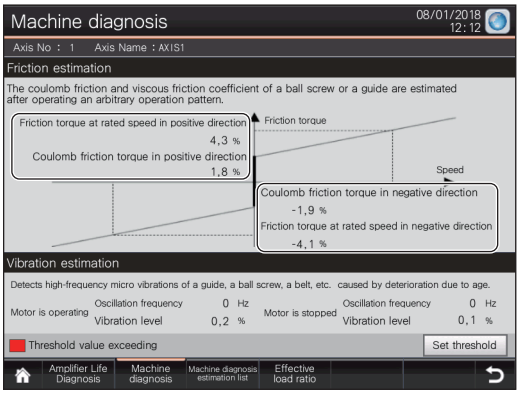
When the [Machine Diagnosis] screen (B-30600) appears for the first time, the [Machine Diag. Threshold Setting] window (W-30600) appears.

Specify threshold values for friction estimation.

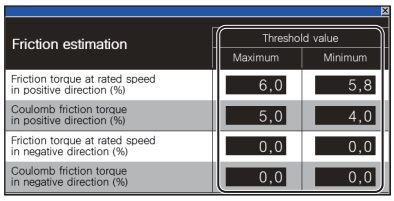
If threshold values are undetermined, refer to the following.

☞ Page 44 Setting standard values for the machine diagnosis function

[Machine Diagnosis] screen (B-30600)



[Machine Diag. Threshold Setting] window (W-30600)



Point

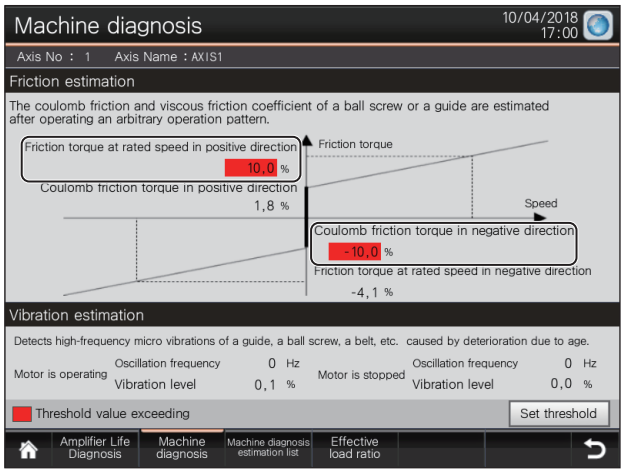
Uses for threshold values

If the estimated values are outside the threshold limits specified in the [Machine Diag. Threshold Setting] window (W-30600), the values are highlighted in red on the [Machine Diagnosis] screen (B-30600).

In this case, any abnormality may occur in the machine.

Check the equipment and machine, and take corrective actions as necessary.

[Machine Diagnosis] screen (B-30600) when the estimated values are outside the threshold limits



■[Machine Diag. Estimation (Fric)] screen (B-30700)

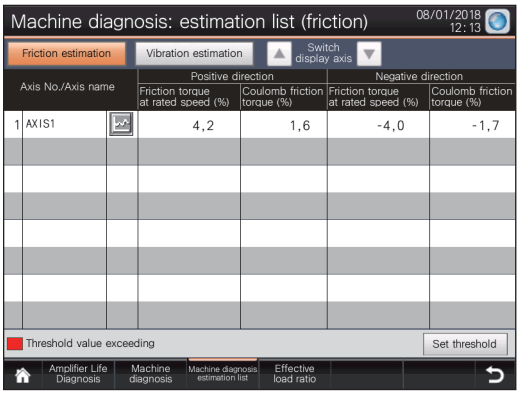
When the [Machine Diag. Estimation (Fric)] screen (B-30700) appears for the first time, the [Machine Diag. Threshold (Fric)1] window (W-30702) appears.

Specify threshold values for friction estimation.

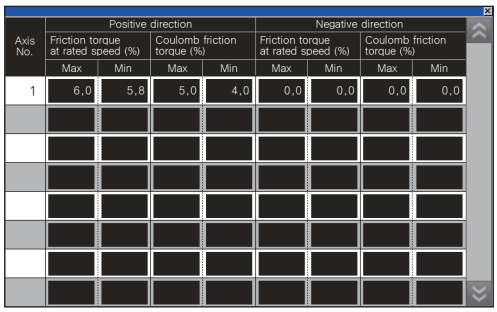
If threshold values are undetermined, refer to the following.

☞ Page 44 Setting standard values for the machine diagnosis function

[Machine Diag. Estimation (Fric)] screen (B-30700)



[Machine Diag. Threshold (Fric)1] window (W-30702)



Point

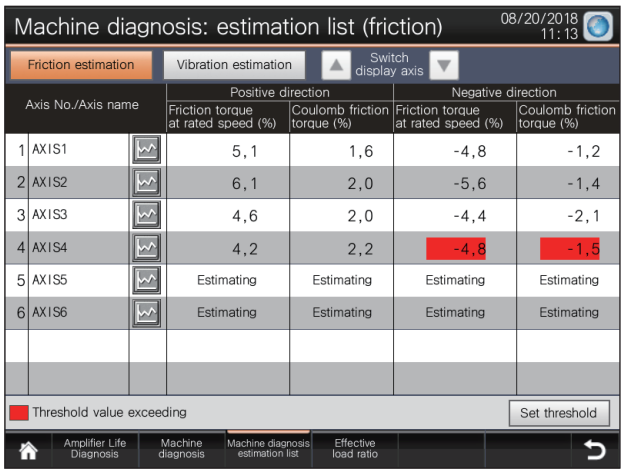
Uses for threshold values

If the estimated values are outside the threshold limits specified in the [Machine Diag. Threshold (Fric)1] window (W-30702), the values are highlighted in red on the [Machine Diag. Estimation (Fric)] screen (B-30700).

In this case, any abnormality may occur in the machine.

Check the equipment and machine, and take corrective actions as necessary.

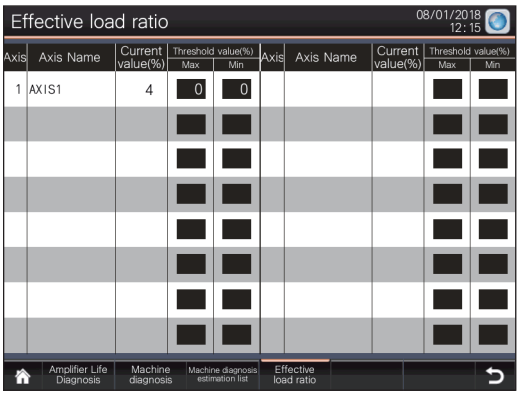
[Machine Diag .Estimation (Fric)] screen (B-30700) when the estimated values are outside the threshold limits



■[Effective Load Ratio] screen (B-30900)

Specify threshold values for effective load ratios.

[Effective Load Ratio] screen (B-30900)



Point

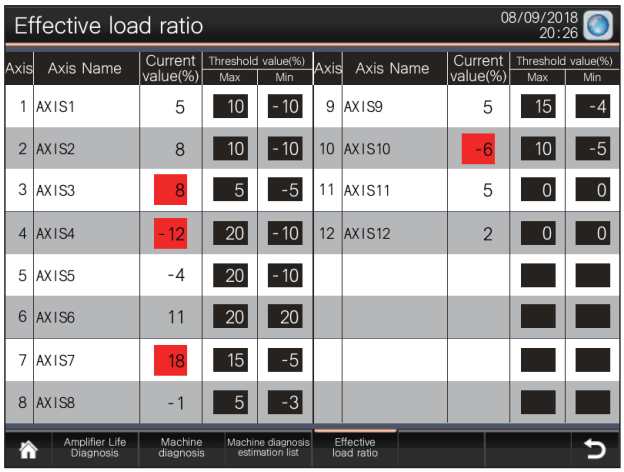
Uses for threshold values

If the current effective load ratios are outside the threshold limits, the ratios are highlighted in red.

In this case, any abnormality may occur in the machine.

Check the equipment and machine, and take corrective actions as necessary.

[Effective Load Ratio] screen (B-30900) when the current ratios are outside the threshold limits



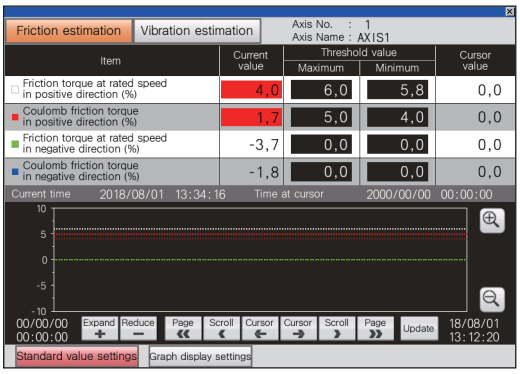
Setting standard values for the machine diagnosis function

When the [Machine Diag. Graph (Friction)] window (W-30704) appears for the first time, the [Machine Diag. Standard Val. Set] window (W-30706) appears.

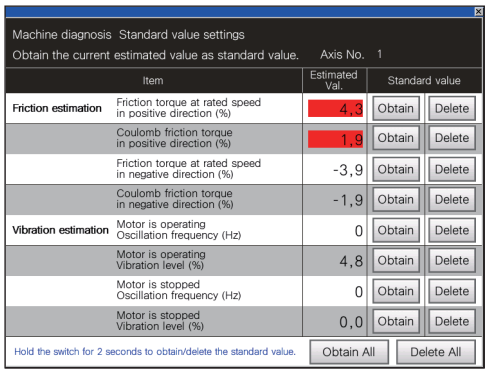
Hold down the [Obtain] button for two seconds to obtain the value currently estimated as a standard value.

To obtain the estimated values for all items as standard values in one go, hold down the [Obtain All] button for two seconds.

[Machine Diag. Graph (Friction)] window (W-30704)



[Machine Diag.Standard Val.Set] window (W-30706)



Point

Uses for standard values

Instead of specifying threshold values, obtain the values estimated at the installation of equipment as standard values in the [Machine Diag. Standard Val. Set] window (W-30706).

Using the graph in the [Machine Diag. Graph (Friction)] window (W-30704), take the differences between the standard values and newly estimated values.

Analyze the differences and wear or deterioration of the machine parts to determine the threshold values.

MEMO

Revisions

The manual number is given on the bottom left of the back cover.

Revision date	* Manual number	Revisions
October 2018	SH(NA)-082072ENG-A	First edition: Compatible with GT Works3 Version 1.205P
November 2018	SH(NA)-082072ENG-B	Partial corrections
April 2019	SH(NA)-082072ENG-C	Partial corrections
July 2019	SH(NA)-082072ENG-D	Partial corrections
October 2020	SH(NA)-082072ENG-E	Partial corrections
April 2022	SH(NA)-082072ENG-F	Partial corrections
April 2023	SH(NA)-082072ENG-G	Partial corrections
October 2023	SH(NA)-082072ENG-H	Added a GS25 model (GS2512-WXTBD).

Warranty

Please check 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.

(1) Gratis Warranty Term

The gratis warranty term of the product shall be for thirty-six (36) months 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 forty-two (42) months.
The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

(2) Gratis Warranty Range

(a) The customer shall be responsible for the primary failure diagnosis unless otherwise specified.
If requested by the customer, Mitsubishi Electric Corporation or its representative firm may carry out the primary failure diagnosis at the customer’s expense.
The primary failure diagnosis will, however, be free of charge should the cause of failure be attributable to Mitsubishi Electric Corporation.

(b) 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.

(c) Even within the gratis warranty term, repairs shall be charged in the following cases.
- Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
- Failure caused by unapproved modifications, etc., to the product by the user.
- 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.
- Failure that could have been avoided if consumable parts designated in the instruction manual had been correctly serviced or replaced.
- Replacing consumable parts such as a battery, backlight, and fuse.
- 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.
- Failure caused by reasons that could not be predicted by scientific technology standards at the time of shipment from Mitsubishi.
- 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) Mitsubishi shall not accept a request for product supply (including spare parts) 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 to:

(1) Damages caused by any cause found not to be the responsibility of Mitsubishi.

(2) Loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products.

(3) Special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products.

(4) 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 shall be excluded from the graphic operation terminal applications.
In addition, applications in which human life or property could be greatly affected, such as in aircraft, medical, railway applications, incineration and fuel devices, manned transportation equipment, recreation and amusement devices, safety devices, shall also be excluded from the graphic operation terminal.
Even for the above applications, however, Mitsubishi Electric Corporation may consider the possibility of an application, provided that the customer notifies Mitsubishi Electric Corporation of the intention, the application is clearly defined and any special quality is not required, after the user consults the local Mitsubishi representative.

Intellectual Property Rights

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The screens (screenshots) are used in accordance with the Microsoft Corporation guideline.

SH(NA)-082072ENG-H(2310)MEE
MODEL: GT-ADD-SV-R-STA-E
MODEL CODE: -

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