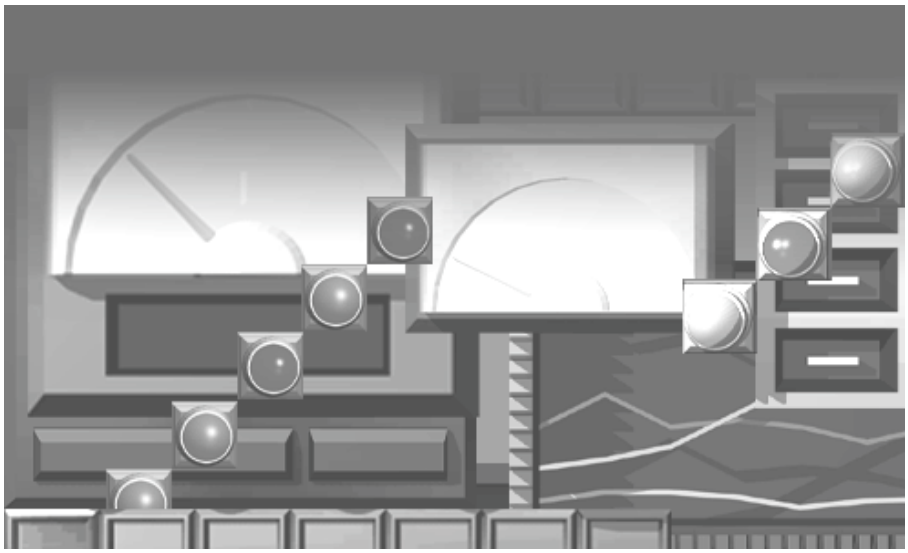
MITSUBISHI

GT Works Version5/GT Designer Version5

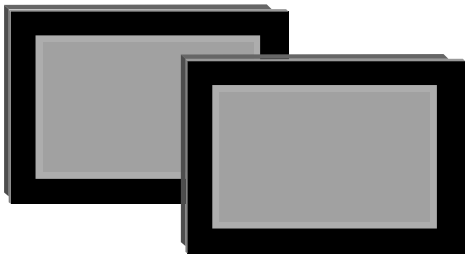
Reference Manual

MELSOFT



Graphic Operation Terminal

900 series



SW5D5C-GTWORKS-E
SW5D5C-GOTR-PACKE(V)

MELSOFT
Integrated Software

MITSUBISHI Graphic Operation Terminal

• SAFETY PRECAUTIONS •

(Always read these instructions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.
The instructions given in this manual are concerned with this product. For the safety instructions of the programmable controller system, please read the CPU module user's manual.
In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".

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

Note that the ⚠CAUTION level may lead to a serious consequence according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

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

[Test Operation Instructions]

⚠ DANGER

- Before performing test operation (bit device on/off, word device's present value changing, timer/counter's set value and present value changing, buffer memory's present value changing) for a user-created monitor screen, system monitoring, special module monitoring or ladder monitoring, read the manual carefully to fully understand how to operate the equipment.
  During test operation, never change the data of the devices which are used to perform significant operation for the system.
  False output or malfunction can cause an accident.

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Precautions for using this software (important)

1. Memory of the personal computer used
   Processing may be terminated by Microsoft® Windows® 95 operation system, Microsoft® Windows® 98 operation system, Microsoft® Windows NT® Workstation4.0 operation system, Microsoft® Windows® Millennium Edition Operating system, Microsoft® Windows® 2000 Professional Operating System on some personal computer models having main memory of not more than 32M bytes. Therefore, use them after increasing the main memory to 32M bytes or more.

2. Free space on the hard disk
   While this software is running, free space of at least 50M byte is required on the hard disk.
   Since free space of 50M byte is required by Windows® 95, Windows® 98, Windows NT® Workstation4.0, Windows® Me, Windows® 2000 Professional as the swap area, Windows® 95, Windows® 98, Windows NT® Workstation4.0, Windows® Me, Windows® 2000 Professional may forcibly terminate the program if that free space is used up while the drawing software is running. Produce a sufficient amount of free space on the hard disk before using the drawing software. If you have to use the drawing software with an amount of free space that is barely above the requirement, save project data as often as possible.
   When GT Simulator is used with GX Developer or GX Simulator, free space is required separately.
   Refer to the GX Developer or GX Simulator Operating Manual for the free space required for use of GX Developer or GX Simulator.

3. Using a spin box in a dialog box
   - Do not enter into a spin box a numerical value with a number of digits that drastically exceeds the maximum number of digits that can be entered into the spin box. Entering a number of digits that drastically exceeds the maximum allowable number of digits may cause a forcible termination of the program.
   - On the [Action] tab selectable from the [Touch key] dialog box, the spin box provided for selecting a key code does not display the key codes in the order of valid key codes when it displays the key codes for the special keys used by such functions as the alarm history display, data list display, and alarm list (user alarm) display. When you keep on clicking the button, therefore, the key codes will not be scrolled forward or backward in the order of the valid key codes. (Clicking the button when the spin box displays "FFEF", for example, will not display "FFB0" as the valid key code that comes next in the order.)
     To specify such a key code for a special key associated with an object, use the keyboard the type the key code into the spin box instead of making a selection from the spin box.

4. Operation on a table in a dialog box
   To select a line on a table when specifying a object display range, for example, click on any part of the line except the number display column. Clicking on the number display column on a line does not select the line. If you clicked on the number display column on a line, that line is displayed in reverse video; click on the number display column again to resume the display in normal video.

5. Instructions for displaying any line other than a continuous line (such as a dotted line) in boldface type
   When any line other than a continuous line is drawn in boldface type, the personal computer screen may not display the line type properly. However, it is displayed properly on the GOT and there are no problems in data.

6. Measures against the year 2000 (Y2K) problem
   The GOT reads and displays the clock information from the PLC. When the GOT is connected to the Mitsubishi PLC/Mitsubishi motion controller or is used with the A9GT-RS2T, continuous operation or restart of the GOT will present no problem since the PLC/motion controller/A9GT-RS2T itself will perform 1999-to-2000 roll-over operation and leap compensation properly. (No measures required) When connected to a third party PLC, however, the GOT reads and displays the clock data from the third party PLC. Therefore, contact the corresponding company for the clock data when the GOT is connected to the third party PLC.

7. About the messages displayed at start
   "Internal error: null pointer access"
   If the above error has appeared, change the setting in the following procedure.
   1) Click the "Start" button, point to the [Settings]-[Control Panel] menu, and click.
   2) Double-click the "Regional Settings" icon.
   3) As the [Regional Settings Property] dialog box appears, choose "English". If the above message appears with the setting of "English", choose the language other than English and restart the personal computer. After a start, choose "English" again and restart the personal computer.

   "Abnormal termination"
   If the above error has appeared, check whether the hard disk has the free capacity of 50MB or more.

8. Printing (file save) on the Windows® 2000
   If save a lot of screen images at a time when performing "Save file" of the print function on the Windows® 2000, the bitmap file may not be saved correctly. In such cases, separate the screen images for each and save it.

REVISIONS

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

Print Date	* Manual Number	Revision
Aug., 2000	SH (NA)-080117-A	First edition
Oct., 2000	SH (NA)-080117-B	Partial corrections Section 2.1.2 Partial additions Section 4.5.2, Section 2.2.3, Appendix7
Nov., 2000	SH (NA)-080117-C	Partial corrections Section 7.2.3 Partial additions Section 4.3.1, Section 4.3.2, Section 4.5.2, Section 4.5.3, Section 5.2.1, Section 5.2.2, Section 5.2.3, Section 5.3.3, Section 5.5, Section 5.6.1, Section 5.6.2, Section 5.8, Section 7.1.2 Additions Section 4.1.4, Section 4.1.5, Section 5.8.13, Section 5.8.14
Feb., 2001	SH (NA)-080117-D	Partial corrections Section 2.2.3, Section 4.1, Section 4.1.2, Section 4.3.1, Section 4.3.2, Section 4.5.2, Section 5.1.4, Section 5.2.2, Section 5.5, Section 5.7, Section 5.8.1, Section 5.8.5, Section 5.8.6, Section 5.8.7, Section 5.8.8, Section 5.8.9, Section 5.8.10, Section 5.9.1, Section 6.5.2, Appendix5, Appendix7 Partial additions Section 3.2, Section 4.1.4, Section 4.5.3, Section 6.5, Section 6.6, Section 6.7, Appendix4 Additions Section 4.1.7
May, 2001	SH (NA)-080117-E	Partial corrections Section 3.2, Section.4.1.1, Section.4.1.2, Section.4.1.7, Section.4.2.2, Section.4.3.1, Section.4.5.2, Section.4.5.3, Section.5.5.1, Section.5.2.1, Section.5.3.1, Section.5.3.3, Section.5.5, Section.5.6.1, Section.5.8.1, Section.5.8.2, Section.5.8.5, Section.5.8.12, Section.5.9.4, Section.6.5.2, Section.7.1.2, Appendix1, Appendix2, Appendix3, Appendix7
Jun., 2001	SH (NA)-080117-F	Partial corrections Section 4.3.2, Section 5.1.4, Section 5.8.9, Appendix7 Additions Section 5.9.5
Aug., 2001	SH (NA)-080117-G	Partial corrections Section 2.1.1, Section 2.1.2, Section 2.2.1, Section 2.2.2, Section 2.2.3, Section 3.2, Section 4.4.2, Section 4.5.2, Section 5.2.1, Section 5.4.6, Section 5.5, Section 5.8.4, Section 5.8.9, Section 5.9.2, Section 6.5.1, Appendix6, Appendix 7
May, 2002	SH (NA)-080117-H	Partial corrections Section 2.2.3, Section 3.2, Section 4.1, Section 4.1.2, Section 4.1.4, Section 4.1.5, Section 4.2.1, Section 4.2.2, Section 4.3.1, Section 4.3.2, Section 4.5.1, Section 4.5.2, Section 5.1.4, Section 5.2.1, Section 5.2.2, Section 5.3.3, Section 5.5, Section 5.8.13, Section 5.9.1, Section 5.9.2, Section 6.5.1, Section 6.5.2, Appendix4, Appendix8 Additions Appendix7

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

Print Date	* Manual Number	Revision
Jul., 2003	SH (NA)-080117-I	Partial corrections Section 2.2.3, Section 3.1, Section 4.4.2, Section 4.5.3, Section 5.1.4, Section 5.5, Section 5.9.1, Section 5.9.5, Section 7.2.2 Additions Chapter 1, Appendix 8
Jan., 2004	SH (NA)-080117-J	Partial corrections Section 4.3.2, Section 4.5.1
Jun., 2004	SH (NA)-080117-K	Partial corrections Manuals MODEL CODE change Changed from 13JF95 to 1DM186
Oct., 2004	SH (NA)-080117-L	Partial corrections Precautions for using this software (important), Section 4.3.2, Section 5.8.1, Section 7.1.2, Section 7.2.2, Section 7.2.3, Section 7.5.2
Jan., 2006	SH (NA)-080117-M	Partial corrections Section 4.5.2, Section 5.3.2, Section 5.4.1, Section 5.4.2, Section 5.4.5, Section 5.8.1, Section 5.8.12, Section 5.9.5, Section 7.2.2 Additions Section 3.7, Section 4.5.4

Japanese Manual Version SH-080112-N

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INTRODUCTION

Thank you for choosing the Mitsubishi Graphic Operation Terminal.
Before using the equipment, please read this manual carefully to use the equipment to its optimum.

CONTENTS

About Manuals

The following manuals are relevant to this product.
Refer to the following list and order the required manuals.

- Detailed manuals

Manual name	Manual number (Model code)
A985GOT/A975GOT/A970GOT/A960GOT User's Manual Explains the specifications, general system configuration, component devices, part names, option unit loading methods, installation and wiring methods, maintenance and inspection methods, and error codes of A985GOT/A975GOT/A970GOT/A960GOT unit. (Available as option)	SH-4005 (1DM099)
A950GOT/A951GOT/A953GOT/A956GOT User's Manual Explains the specifications, general system configuration, component devices, part names, option unit loading methods, installation and wiring methods, maintenance and inspection methods, and error codes of A950GOT/A951GOT/A953GOT/A956GOT unit. (Available as option)	SH-080018 (1DM103)

- Relevant Manual

For relevant manual, refer to the PDF manual stored within the drawing software.

Abbreviations and generic terms in this manual

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

Abbreviations, generic terms and special terms		Description
GOT	A985GOT-V	Generic term of A985GOT-TBA-V and A985GOT-TBD-V
	A985GOT	Generic term of A985GOT-TBA, A985GOT-TBD and A985GOT-TBA-EU
	A975GOT	Generic term of A975GOT-TBA-B, A975GOT-TBD-B, A975GOT-TBA, A975GOT-TBD and A975GOT-TBA-EU
	A970GOT	Generic term of A970GOT-TBA-B A970GOT-TBD-B, A970GOT-TBA, A970GOT-TBD, A970GOT-SBA, A970GOT-SBD, A970GOT-LBA, A970GOT-LBD, A970GOT-TBA-EU and A970GOT-SBA-EU
	A97*GOT	Generic term of A975GOT and A970GOT
	A960GOT	Generic term of A960GOT-EBA, A960GOT-EBD and A960GOT-EBA-EU
	A956GOT	Generic term of A956GOT-TBD, A956GOT-SBD, A956GOT-LBD, A956GOT-TBD-M3, A956GOT-SBD-M3 and A956GOT-LBD-M3
	A956WGOT	Generic term of A956WGOT-TBD
	A953GOT	Generic term of A953GOT-TBD, A953GOT-SBD, A953GOT-LBD, A953GOT-TBD-M3, A953GOT-SBD-M3 and A953GOT-LBD-M3
	A951GOT	Generic term of A951GOT-TBD, A951GOT-SBD, A951GOT-LBD, A951GOT-TBD-M3, A951GOT-SBD-M3 and A951GOT-LBD-M3
	A951GOT-Q	Generic term of A951GOT-QTBD, A951GOT-QSBD, A951GOT-QLBD, A951GOT-QTBD-M3, A951GOT-QSBD-M3 and A951GOT-QLBD-M3
	A950GOT	Generic term of A950GOT-TBD, A950GOT-SBD, A950GOT-LBD, A950GOT-TBD-M3, A950GOT-SBD-M3 and A950GOT-LBD-M3
	A950 handy GOT	Generic term of A950GOT-SBD-M3-H, A950GOT-SBD-M3-H, A953GOT-SBD-M3-H and A953GOT-LBD-M3-H
	A95*GOT	Generic term of A956GOT, A953GOT, A951GOT, A951GOT-Q, A950GOT and A950 handy GOT
	F940GOT	Generic term of F940GOT-SWD-E, F940GOT-LWD-E, ET-940BH(-L) and ET-940PH(-L)
	F930GOT	Generic term of F930GOT-BWD-E, F930GOT-BBD-K-E
	F920GOT	Abbreviation of F920GOT-BBD5-K-E
	F940 handy GOT	Generic term of F940GOT-SBD-H, F940GOT-LBD-H, F943GOT-SBD-H, F943GOT-LBD-H, F940GOT-SBD-RH, F940GOT-LBD-RH, F943GOT-SBD-RH and F943GOT-LBD-RH
	F940WGOT	Abbreviation of F940WGOT-TWD
	GOT-A900 series	Generic term of A985GOT-V, A985GOT, A975GOT, A970GOT, A960GOT, A95*GOT and GT SoftGOT
	GOT-F900 series	Generic term of F940GOT, F930GOT, F920GOT, F940 handyGOT and F940WGOT
Communication board	Bus connection board	Generic term of A9GT-QBUSS, A9GT-QBUS2S, A9GT-BUSS and A9GT-BUS2S
	Serial communication board	Generic term of A9GT-RS4, A9GT-RS2 and A9GT-RS2T
Communication unit	Bus connection unit	Generic term of A9GT-QBUS2SU, A9GT-BUS2SU, A9GT-BUS2SU, A7GT-BUSS and A7GT-BUS2S
	Data link unit	Generic term of A7GT-J71AP23, A7GT-J71AR23 and A7GT-J71AT23B
	Network unit	Generic term of A7GT-J71LP23 and A7GT-J71BR13
	CC-Link communication unit	Generic term of A8GT-J61BT13 and A8GT-J61BT15
Option	Protection sheet	Abbreviation of A9GT-80PSC, A9GT-70PSC, A9GT-60PSC and A9GT-50PSC type transparent protection sheets
	Backlight	Abbreviation of A9GT-80LTT, A9GT-70LTTB, A9GT-70LTT, A9GT-70LTS and A9GT-50LT type backlights
	Debug stand	Abbreviation of A9GT-80STAND, A9GT-70STAND and A9GT-50STAND type debug stand
	PC card (memory card)	Abbreviation of PC card with PCMCIA Ver.2.1
	Flash PC card	Generic term of A9GTMEM-10MF, A9GTMEM-20MF and A9GTMEM-40MF
	Compact flash PC card	Compact flash PC card compliant with Compact FlashTM
	Memory board	Abbreviation of A9GT-FNB, A9GT-FNB1M, A9GT-FNB2M, A9GT-FNB4M, A9GT-FNB8M, A9GT-QFNB, A9GT-QFNB4M, A9GT-QFNB8M type option function memory board
	Attachment	Generic term of A77GT-96ATT/A85GT-95ATT/A87GT-96ATT/A87GT-97ATT attachments
	Ten-key Panel	Abbreviation of A8GT-TK ten-key Panel
	A7GT-CNB	Abbreviation of A7GT-CNB bus connector conversion box
	A9GT-QCNB	Abbreviation of A9GT-QCNB bus connector conversion box
Option unit	External I/O unit	Abbreviation of A9GT-70KBF and A8GT-50KBF type external I/O interface unit
	Printer interface unit	Abbreviation of A9GT-50PRF type printer interface unit
	Memory card interface unit	Abbreviation of A1SD59J-MIF memory card interface unit
	Video input interface unit	Abbreviation of A9GT-80V4 type Video input interface unit
	RGB input interface unit	Abbreviation of A9GT-80R1 type RGB input interface unit
	Video/RGB mixed input interface unit	Abbreviation of A9GT-80V4R1 type Video/RGB mixed input interface unit
Software	GT Works Version 5	Abbreviation of SW5D5C-GTWORKS-E software package
	GT Designer Version 5	Generic term of SW5D5C-GOTR-PACKE software package and SW5D5C-GOTR-PACKEV software package
	GT Designer	Abbreviation of image creation software GT Designer for GOT900
	GT Simulator	Abbreviation of GT Simulator screen simulator GOT900

Abbreviations, generic terms and special terms		Description
Software	GT Converter	Abbreviation of data conversion software GT Converter for GOT900
	GT Debugger	Abbreviation of debugging software GT Debugger
	GT Manager	Abbreviation of GT Manager data editing software for GOT900
	GT SoftGOT	Abbreviation of GT SoftGOT monitoring software
	GX Developer	Generic term of SW□D5C-GPPW-E/SW□D5F-GPPW-E software packages
	GX Simulator	Generic term of SW□D5C-LLT-E ladder logic test tool function software packages (SW5D5C-LLT-E or later)
CPU	QCPU (Q Mode)	Generic term of Q00JCPU, Q00CPU, Q01CPU, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU and Q25PHCPU CPU units
	QCPU (A Mode)	Generic term of Q02CPU-A, Q02HCPU-A and Q06HCPU-A CPU units
	QCPU	Generic term of QCPU (Q Mode) and QCPU (A Mode)
	QnACPU (Large Type)	Generic term of Q2ACPU, Q2ACPU-S1, Q3ACPU, Q4ACPU and Q4ARCPU CPU units
	QnACPU (Small Type)	Generic term of Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU and Q2ASHCPU-S1 CPU units
	QnACPU	Generic term of QnACPU (Large Type) and QnACPU (Small Type)
	AnUCPU	Generic term of A2UCPU, A2UCPU-S1, A3UCPU and A4UCPU CPU units
	AnACPU	Generic term of A2ACPU, A2ACPU-S1 and A3ACPU CPU units
	AnNCPU	Generic term of A1NCPU, A2NCPU, A2NCPU-S1 and A3NCPU CPU units
	ACPU (Large Type)	Generic term of AnUCPU, AnACPU and AnNCPU CPU units
	A2US(H)CPU	Generic term of A2USCPU, A2USCPU-S1 and A2USHCPU-S1 CPU units
	AnS(H)CPU	Generic term of A1SCPU, A1SHCPU, A2SCPU and A2SHCPU CPU units
	A1SJ(H)CPU	Generic term of A1SJCPU-S3 and A1SJHCPU CPU units
	ACPU (Small Type)	Generic term of A2US(H)CPU, AnS(H)CPU and A1SJ(H)CPU CPU units
	ACPU	Generic term of ACPU (Large Type), ACPU (Small Type) and A1FXCPU CPU units
	FXCPU	Generic term of FX0 series, FX0N series, FX0S series, FX1 series, FX1N series, FX1S series, FX2 series , FX2C series, FX2N series, FX1NS series, FX2NC series, FX(2N)-10GM/20GM series CPU unit
	Motion controller CPU	Generic term of A273UCPU, A273UHCPU, A273UHCPU-S3, A171SCPU-S3, A171SHCPU, A172SHCPU, Q172CPU, Q173CPU CPU unit
	FA controller	Generic term of LM610, LM7600, LM8000 CPU unit
	Inverter	Generic term of FREQROL series (A500 Series, E500 Series, F500 Series)
Peripheral connection unit	G4	Abbreviation of AJ65BT-G4-S3
Ethernet unit	E71	Generic term of AJ71E71-S3, A1SJ71E71-B2-S3, A1SJ71E71-B5-S3, AJ71E71N-B2, AJ71E71N-B5T, A1SJ71E71N-B2 and A1SJ71E71N-B5T
	QE71	Generic term of AJ71QE71, A1SJ71QE71-B2, AJ71QE71-B5, A1SJ71QE71-B5, AJ71QE71N-B2, AJ71QE71N-B5T, A1SJ71QE71N-B2 and A1SJ71QE71N-B5T
	Q series-compatible E71	Generic term of QJ71E71, QJ71E71-B2 and QJ71E71-100
Other PLC	Omron PLC	Generic term of C200HS, C200H, C200Hα series(C200HX, C200HG, C200HE), CQM1, C1000H,C2000H,CV500, CV1000, CV2000, CVM1-CPU11, CVM1-CPU21, CS1, CJ1 CPU unit
	Yasukawa PLC	Generic term of GL60S, GL60H, GL70H, GL120, GL130, CP-9200SH, CP-9300MS, MP-920, MP-930, MP-940, CP-9200(H) and PROGIC-8 CPU unit
	SLC500 Series	Generic term of SLC500-20, SLC500-30, SLC500-40, SLC5/01 SLC5/02, SLC5/03, SLC5/04 SLC5/05
	MicroLogix1000 Series	Generic term of 1761-L10BWA, 1761-L10BWB, 1761-L16AWA, 1761-L16BWA, 1761-L16BWB, 1761-L16BBB, 1761-L32AWA, 1761-L32BWA, 1761-L32BWB, 1761-L32BBB, 1761-L32AAA, 1761-L20AWA-5A, 1761-L20BWA-5A, 1761-L20BWB-5A
	MicroLogix1500 Series	Abbreviation of 1764-LSP
	Allen-Bradley PLC	Generic term of SLC 500 Series, MicroLogix1000 Series, MicroLogix1200 Series, MicroLogix1500 Series
	Sharp PLC	Generic term of JW-21CU, JW-22CU, JW-31CUH, JW-32CUH, JW-33CUH, JW-50CUH, JW-70CUH, JW-100CUH CPU unit
	PROSEC T Series	Generic term of T2 (PU224 type), T2E, T2N, T3, T3H CPU unit
	PROSEC V Series	Abbreviation of Model3000 (S3) CPU unit
	Toshiba PLC	Generic term of PROSEC T Series and PROSEC V Series
	SIEMENS PLC	Generic term of SIMATIC S7-200 Series, SIMATIC S7-300 Series and SIMATIC S7-400 Series CPU unit
	Large type H series	Generic term of H-302(CPU2-03H), H-702(CPU2-07H), H-1002(CPU2-10H), H-2002(CPU2-20H), H-4010(CPU3-40H),.J-300(CPU-03Ha), H-700(CPU-07Ha), H-2000(CPU-20Ha)
	H200 to 252 Series	Generic term of H-200(CPU-02H, CPE-02H), H-250(CPU21-02H), H-252(CPU22-02H), H-252B(CPU22-02HB), H-252C(CPU22-02HC, CPE22-02HC)
	H Series board type	Generic term of H-20DR, H-28DR, H-40DR, H-64DR, H-20DT, H-28DT, H-40DT, H-64DT, HL-40DR, HL-64DR
	EH-150 Series	Generic term of EH-CPU104, EH-CPU208, EH-CPU308, EH-CPU316
	HITACHI PLC (HIDIC H Series)	Generic term of large type H series,H-200 to 252 Series H Series board type, EH-150 Series
	Matsushita Electric Works PLC	Generic term of FP0-C16CT, FP0-C32CT, FP1-C24C, FP1-C40C, FP2, FP2SH, FP2-CCU, FP3, FP5, FP10(S), FP10SH, FP-M(C20TC) and FP-M(C32TC)
Others	Memory	abbreviation of memory (flash memory) in the GOT
	OS	Abbreviation of GOT system software
	Object	Setting data for dynamic image
	Personal Computer	Personal computer where the corresponding software package is installed
	Servo amplifier	Generic term of MR-J2S-□A, MR-J2S-□CP and MR-J2M A series

* In this manual, the following products are called by new names.

Old Name	New Name	Remarks
GPPW	GX Developer	Generic term of SW□D5C-GPPW-E/SW□D5F-GPPW-E software packages

CHAPTER1 OVERVIEW

This manual describes the system configuration, screen makeup, basic dialog box operation methods, specifications, help using methods, functions and others of the following products used with the GOT900 series.

- SW5D5C-GTWORKS-E software package
- SW5D5C-GOTR-PACKE software package
- SW5D5C-GOTR-PACKEV software package*

*Exclusive updating products which can be utilized by those who use the previous products.

In this manual, the above products are abbreviated to the following.
SW5D5C-GTWORKS-E .....GT Works Version5
SW5D5C-GOTR-PACKE/SW5D5C-GOTR-PACKEV.....GT Designer Version5

POINT

- This manual describes only the basic operation methods, specifications and functions.
  Refer to the help of the corresponding software package for information on setting details and operation methods (e.g. figure drawing for monitor screen creation, object function setting operation, data transfer to the GOT).
  Refer to Chapter 5 for how to use help.
- GT Works Version5 and GT Designer Version5 do not support the functions added to GT Designer2.
  When it is desired to use the functions added to GT Designer2, consider using GT Designer2.

MEMO

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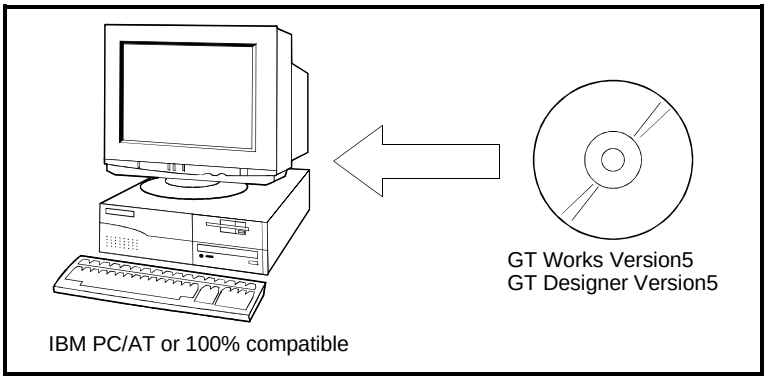
CHAPTER2 SYSTEM CONFIGURATION

2.1 System Configuration of Monitoring Screen

2.1.1 System configuration



2.1.2 Operation environment

Item	Description
Body	Pentium® 133MHz or higher (Pentium II® 266MHz or higher recommended) Personal computer on which Microsoft® Windows® 95 operating system, Microsoft® Windows® 98 operating system, Microsoft® WindowsNT® Workstation 4.0 operating system operates, Microsoft® Windows® Millennium Edition Operating System or Microsoft® Windows® 2000 Professional Operating System.
Disk drive	CD-ROM drive is mandatory.
Main memory	32 Mbyte (64 Mbyte or more is recommended.)
Hard disk space	At the time of complete installation When installed : 80M bytes or more When operating : 50M bytes or more
CRT	Compatible with Windows® 95, Windows® 98, WindowsNT® 4.0, Windows® Me, Windows® 2000 Professional
Display colors	256 colors
Resolution	Resolution of 800 × 600 dots or more
Mouse, keyboard, printer, CD-ROM drive	Compatible with Microsoft® Windows® 95, Windows® 98, WindowsNT® 4.0, Windows® Me, Windows® 2000 Professional

POINT

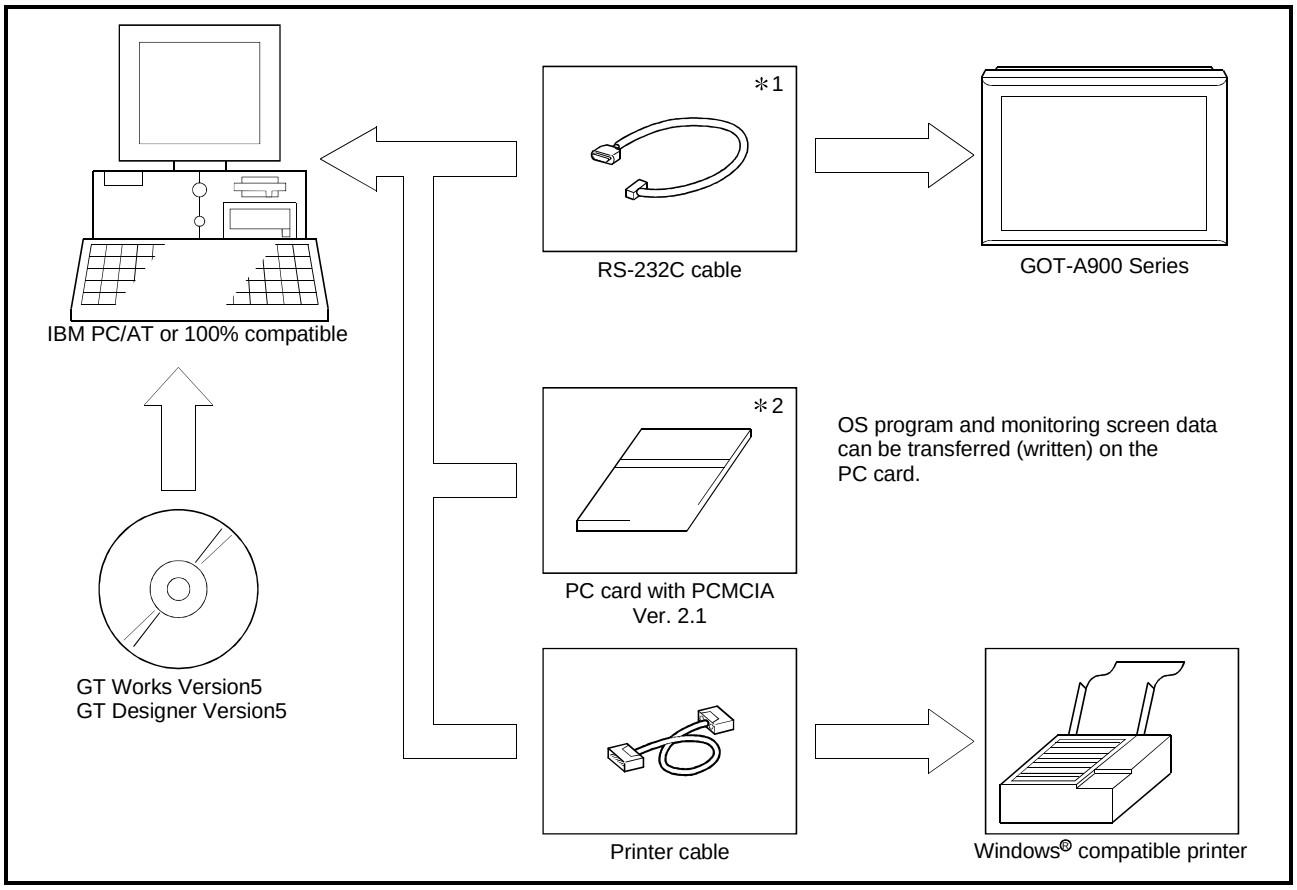
Depending on the language of your Operating System, this software may not start. In such a case, start this software after setting the Regional Settings within Control Panel of Windows® 95, Windows® 98, WindowsNT® 4.0 to "English".

2 - 1

2.2 System Configuration of Data Transfer and Document Creation

2.2.1 System configuration

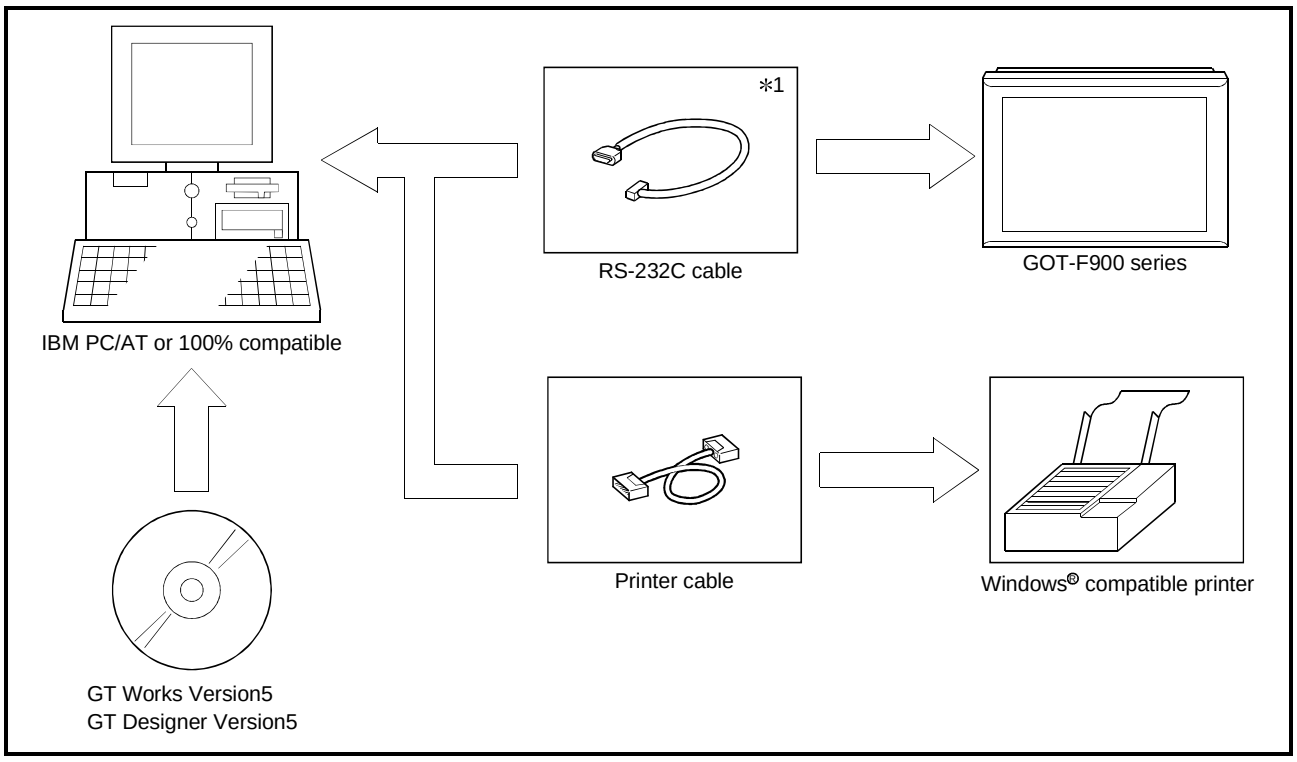
(1) When the GOT-A900 is used



∗1: Refer to Item 2.2.2 for wiring diagram of RS-232C.

∗2: Refer to Item 2.2.3 for available PC cards.

(2) When the GOT-F900 series is used



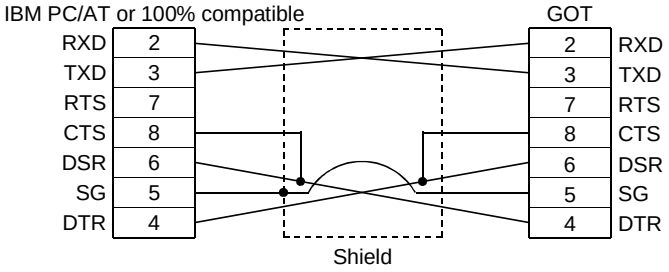
∗1: Refer to Item 2.2.2 for wiring diagram of RS-232C.

2.2.2 Compatible RS-232C cable

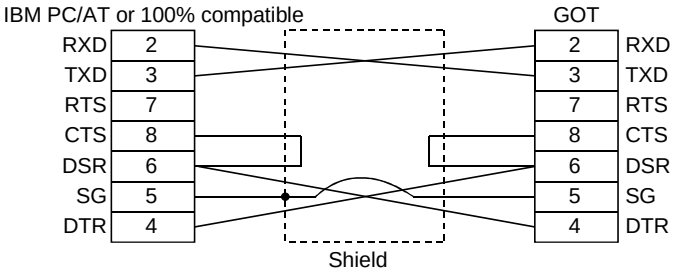
The cable in the wiring diagram below or the cable type below is required.

POINT
When the cable is self-made for the GOT-A900 series/GOT-F900 series, either of the following wiring diagrams (1) and (2) may be used. However, if the F940GOT/F930GOT is connected to the A series CPU or the FX series CPU with RS422 to use the PLC CPU and the GOT with the FX-2PIF at the same time, use the F2-232CAB-1 connection cable.

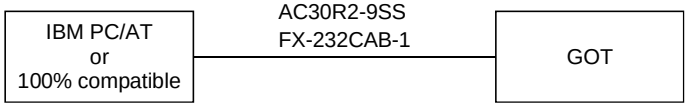
(1) Wiring diagram of AC30R2-9SS



(2) Wiring diagram of FX-232CAB-1



*Use the screw-in type connector (inch) for the GOT side.



Manufacturer	Type
Mitsubishi Electric	AC30R2-9SS (9pin-9pin) FX-232CAB-1 (9pin-9pin)

If the following cable is used, 9-25 pin converter is required.

Manufacturer	Type
Mitsubishi Electric	AC30R2-9P (9pin-25pin) F2-232CAB-1 (9pin-25pin)

2.2.3 Compatible PC card (Only when the GOT-A900 series is used)

(1) About compatible PC card types

For the PC cards available for the GOT, refer to the User's Manual supplied with the GOT unit.

(2) About PC card formatting

Use the PC card after formatting.
It may be formatted in either of the following ways.

(a) Using the personal computer (SRAM type, flash PC card)

Format the PC card on the personal computer that satisfies the following conditions.

1) The PCMCIA card slot is provided.
2) Windows® 95, Windows® 98, Windows® Me or Windows® 2000 has been installed.
(Note that Windows NT® 4.0 cannot format the PC card.)

POINT

- The PC card used with the GOT should be formatted in either of the following systems.
  - SRAM type PC card : FAT16
  - Flash PC card : FAT16, FAT32
- To make the SRAM type PC card recognized by Windows® 95 or Windows® 98, config.sys must be added to the description.
  For details, enter "SRAM" and keyword in Help of Windows® 95 or Windows® 98, and refer to the contents.

(b) Using the self-diagnostics (memory card check) of the utility menu

This method is valid for the SRAM type PC card only.
This method is fewer in the number of object files that may be saved than the method using the personal computer.
For details of the utility menu, refer to the GOT-A900 Series Operating Manual (GT Works Version5/GT Designer Version5 Compatible Extended • Option Functions).

(3) About the number of files that may be saved

There are the following upper limits to the number of object files that may be saved according to the memory capacity of the PC card.

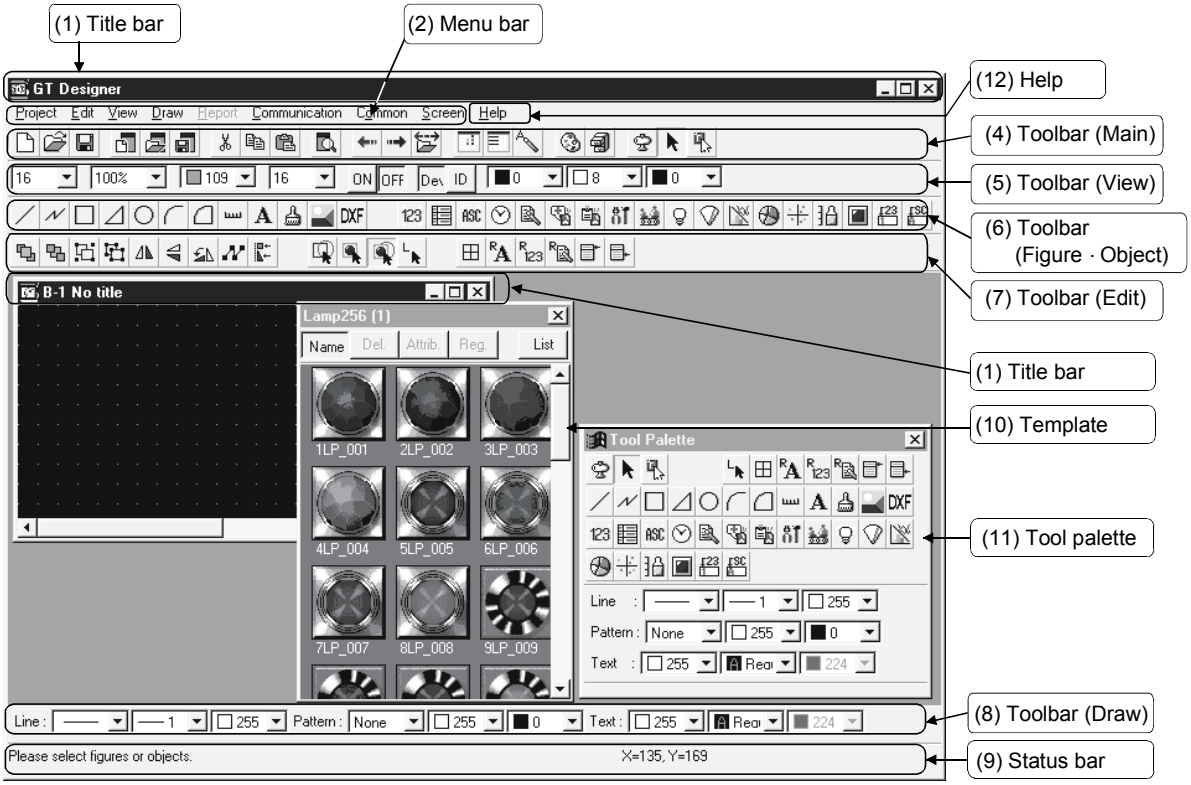
Memory Capacity of PC Card	Number of Files	
	Total of recipe, alarm history and report files	Total of all files ＊1
1M	Max. 128 files	Max. 2025 files (512 bytes/file)
2M		Max. 4075 files (512 bytes/file)
4M	Max. 256 files	Max. 2041 files (2048 bytes/file)
16M (A9GTMEM-10MF)	Max. 512 files	Max. 2541 files (4096 bytes/file)
32M (A9GTMEM-20MF)		Max. 9740 files (2048 bytes/file)
48M (A9GTMEM-40MF)		Max. 19497 files (2048 bytes/file)

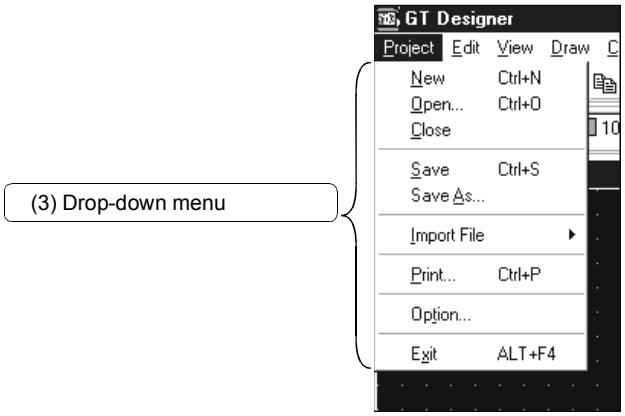
＊1: Indicates the maximum number of files that can be stored when the file size is as indicated in the parentheses.
For example, when data of 3072 bytes is written to the above 4M PC card, the data occupies two files and are stored there since the data exceeds the parenthesized value (2048).
As a result, the remaining number of files where data can be written is 2039.

CHAPTER3 SCREEN CONFIGURATION OF GT DESIGNER

3.1 Screen Configuration and Various Tools

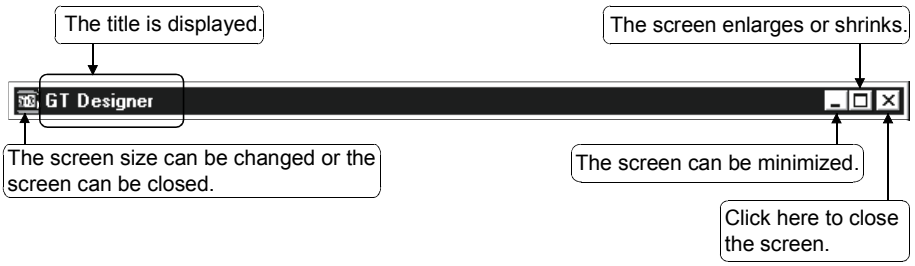
This section describes screen configuration and various tools.





(1) Title bar

The screen title is displayed.
Move the cursor to the title bar. You can drag the screen to the desired position.
The GT Designer has the application window title bar and the screen title bar.

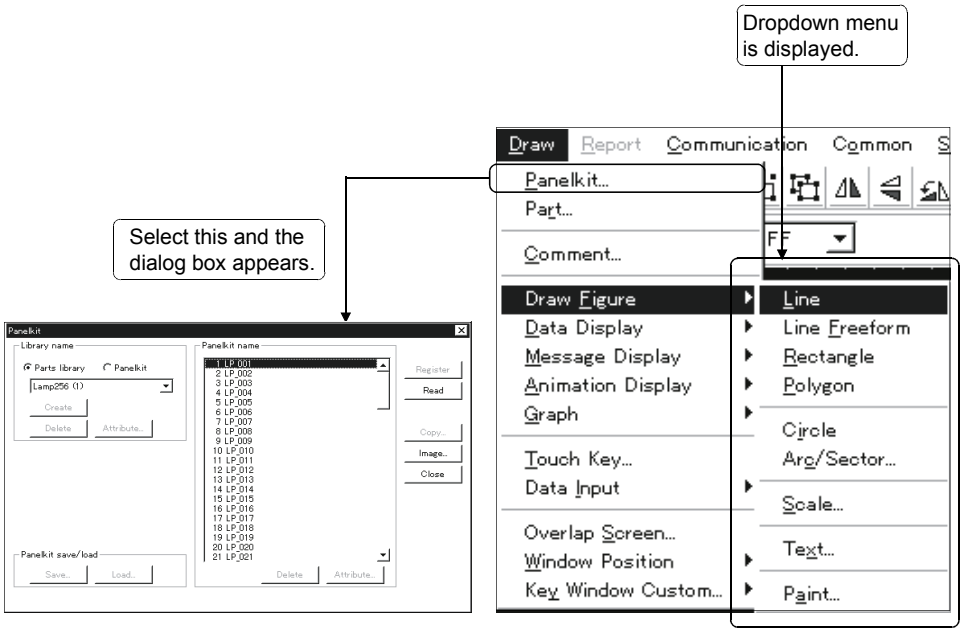


(2) Menu bar

Menu names that can be used on the GT Designer are displayed.
Select a menu and a dropdown menu appears. Then, various functions can be selected from this menu.

(3) Dropdown menu

Function names that can be used on the GT Designer are displayed.
If " ▶ " is displayed at the right end of the dropdown menu, subsequent dropdown menu of the function is displayed.
If "..." is displayed on the function name, move the cursor to the function and click it. The set dialog box appears.



3 - 2

(4) Toolbar (Main)

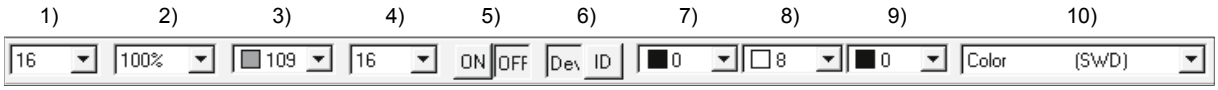
This is where the basic items assigned on the menu bar appear as buttons. Move the cursor onto any tool button and click it to perform the corresponding function.

Names of tool buttons

1) New project
2) Open project
3) Save project
4) New screen
5) Load screen
6) Save screen
7) Cut
8) Copy
9) Paste
10) Preview
11) Switching edit screen
12) Open and display closed screen (for switching edit screen)
13) Object list screen display
14) Device list screen display
15) Comment edit
16) Tool palette display
17) Template display
18) Panelkit display
19) Figure and object editing cursor
20) Template placing cursor

(5) Toolbar (View)

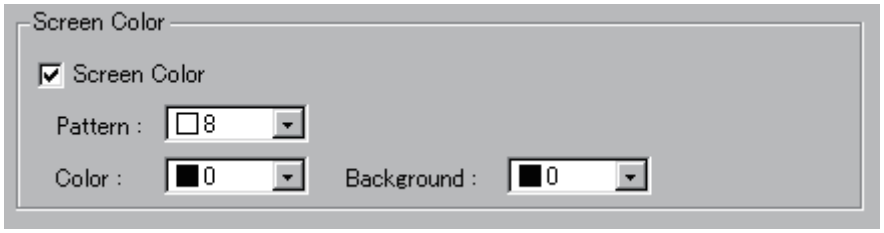
This is where the items (moving distance, pattern, etc.) assigned on the menu bar appear as buttons.
Moving the cursor onto "▼" and clicking it opens the drop-down menu of the corresponding item.
Move the cursor to the attribute you want to change and click it to perform the corresponding function.



1) Setting cursor moving distance
2) Enlarging screen
3) Setting grid color
4) Grid distance
5) Switching ON/OFF object functions
6) Setting screen display data (object ID, device)
7) Setting screen color
8) Setting screen pattern
9) Setting screen background
10) Switching screen-drawn target (GOT-F900 series only)

POINT

When a pattern is set to the background of the screen using "Pattern (8))", the set pattern is not deleted completely if "Pattern (8))" is set to "No" again.
The outer frame of the screen is displayed in the color set to Color (7)).
(The outer frame is not displayed when Color (7)) is set to Black (0).)
When it is desired to delete the pattern settings, display the [Screen Auxiliary Setting] dialog box of the screen where the pattern has been set, and remove the checkmark in the "Sheet color" checkbox.

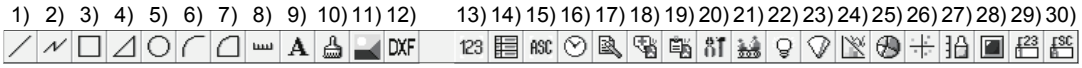


Screen Auxiliary Setting Dialog Box

The details of the "Screen Auxiliary Setting" dialog box settings and operation information can be browsed by choosing the following Help items.
(1) Choose [Help] - [Object setting].
(2) Choose "Operations after making screen" → "Defining the input processing specifications for each screen" in the Help contents.

(6) Toolbar (Figure • Object)

This is where the figure/object setting items laid out in the tool palette appear as buttons.
Move the cursor onto any tool button and click it to perform the corresponding function.



Names of tool buttons

1) Line
2) Line freedom
3) Rectangle
4) Polygon
5) Circle
6) Arc
7) Sector
8) Scale
9) Text
10) Paint
11) Insert BMP format file
12) Insert DXF format file
13) Numerical display function
14) Data list display function
15) ASCII display function
16) Clock display function
17) Comment display function
18) Alarm history display function
19) Alarm list display function
20) Part display function
21) Part movement display function
22) Lamp display function
23) Panel meter display function
24) Line/trend/bar graph display function
25) Statistics graph display function
26) Scatter chart display function
27) Level display function
28) Touch key function
29) Numerical input function
30) ASCII input function

(7) Toolbar (Edit)

This is where the figure editing items assigned on the menu bar appear as buttons.

Move the cursor onto any tool button and click it to perform the corresponding function.

Names of tool buttons

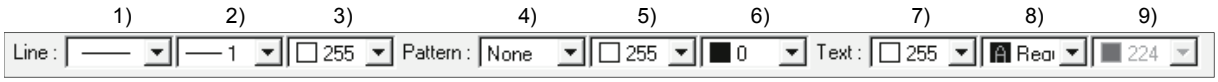
1) Bring to front
2) Send to back
3) Grouping
4) Canceling grouping
5) Horizontal flip
6) Vertical flip
7) 90° counterclockwise
8) Edit vertex
9) Align
10) Selection target (figure)
11) Selection target (object)
12) Selection target (figure+object)
13) Selection target (report line)
14) Report figure (line)
15) Report figure (text)
16) Report print object (numerical)
17) Report print object (comment)
18) Setting report header line
19) Setting report repeat line

(8) Toolbar (Draw)

This is where the items (line style, pattern, text style, etc.) laid out in the tool palette appear as lists.

Moving the cursor "▼" onto any button and clicking it opens the drop-down menu of the corresponding item.

Move the cursor to the attribute you want to change and click it to perform the corresponding function.



1) Set/change of line style
2) Set/change of line width
3) Set/change of line color
4) Set/change of painting pattern
5) Set/change of painting color
6) Set/change of painting background color
7) Set/change of character color
8) Set/change of character decoration
9) Set/change of character shade color

(9) Status bar

This is where the current operation status and cursor coordinates are displayed.

(10) Template

This is provided to register and read the panelkit and parts easily.

Refer to Section 3.4 for details.

(11) Tool palette

This is where the buttons for setting figures, objects and so on are displayed.
Refer to Section 3.5 for details.

(12) Help

This is where how to operate GT Designer, how to create/edit the GOT screen data, and other information are shown.
Refer to Section 3.6 for details.

3.2 Menu Configuration

This section describes the command list allocated on the menu bar and explains the details.

(1) GT Designer

- Project
  - New ····· New project data is created.
  - Open ····· Existing file is read.
  - Close ····· Editing file is closed.
  - Save ····· Editing file is saved with project data.
  - Save as ····· Editing file is saved as different name and editing continues.
  - Import File
    - Project ····· Other project data is used for the project data in editing.
    - Bitmap ····· BMP format figure data is pasted on the screen.
    - Dxf ····· DXF format figure data is pasted on the screen.
    - GPP Comment ····· GX Developer device comment file to be read into the GT Designer is specified.
  - Print ····· Setting data and screen image is output to printer and files.
  - Option ····· Operation, display and communication environments are set.
  - Exit ····· GT Designer is ended.
- Edit
  - Undo ····· The last operation for the data is cancelled and the previous data is maintained.
  - Cut ····· Figures and objects are cut and stored in the clipboard.
  - Copy ····· Selected figures, characters and objects are stored in the clipboard.
  - Paste ····· Figures and objects stored in the clipboard are pasted.
  - Consecutive Copy ····· Selected figures and objects are copied and pasted on the multiple editing screen.
  - Delete ····· Selected figures and objects are deleted.
  - Edit Vertex ····· Length of continuous line or lines designated by polygon is changed.
  - Object of Selection
    - Figure ····· Only figures are edited.
    - Object ····· Only objects are edited.
    - Figure and Object ····· Figures and objects are edited.
    - Report line ····· Report lines are edited.
  - Select All ····· All figures and objects are selected.
  - Group
    - Group ····· Selected figures and objects are grouped.
    - Switch group ····· Grouping of selected objects as a single object.
    - Ungroup ····· Grouping of selected figures and objects is canceled.
  - Rotate/Flip
    - Flip Vertical ····· Selected figures are flipped vertically.
    - Flip Horizontal ····· Selected figures are flipped horizontally.
    - Rotate Left ····· Selected figures are rotated to the left by 90°.
  - Align ····· Selected figures and objects are aligned.
  - Stacking Order
    - Bring to Front ····· Selected figures and objects are brought to front.
    - Send to Back ····· Selected figures and objects are sent to back.
  - Attribute ····· Attributes of selected figures and objects are changed.
  - Replace Devics ····· The set monitoring devices are replaced with other devices.
  - Replace Overlap Screen ····· Overlap screen numbers are batch-changed.
- View
  - Preview ····· Screen details are displayed in monitoring image.
  - ON Image ····· Screen details are displayed in ON.
  - Redisplay ····· Editing screen is re-displayed.
  - Color Setting ····· 16 colors that are displayed on the color list are selected.
  - Device List
    - Screen ····· Displays the device list used for each screen.
    - Project ····· Displays the device list used for each project.
  - Object List ····· Object list set in the screen is displayed.
  - Overlap Screen ····· Overlap screens are displayed hierarchically.
  - Option ····· Operation, display and communication environments are set.

- Draw
  - Panelkit ····· Reads, registers and deletes the panel kit.
  - Part ····· Registers the part for the part display function and the part movement function.
  - Comment ····· Registers the comment for the comment display function, the alarm list display function and the alarm history display function.
  - Draw Figure
    - Line ····· Draws linear line.
    - Line Freeform ····· Draws a continuous linear line.
    - Rectangle ····· Draws a rectangle.
    - Polygon ····· Draws a polygon.
    - Circle ····· Draws a circle.
    - Arc/Sector ····· Draws an arc/sector.
    - Scale ····· Draws graduation.
    - Text ····· Inputs characters.
    - Paint ····· Paints a polygon or a closed area with selected pattern.
  - Data Display
    - Numerical Display ····· Sets the numerical display function.
    - Data List ····· Sets the data list display function.
    - Ascii Display ····· Sets the ASCII display function.
    - Clock ····· Sets the clock display function.
  - Message Display
    - Comment ····· Sets the comment display function.
    - Alarm History ····· Sets the alarm history display function.
    - Alarm List ····· Sets the alarm list display function.
  - Animation Display
    - Part Display ····· Sets the part display function.
    - Part Movement ····· Sets the part movement function.
    - Part Move Route ····· Sets the part movement route.
    - Lamp ····· Sets the lamp display function.
    - Panelmeter ····· Sets the panel meter function.
  - Graph
    - Trend/Line/Bar ····· Sets the trend graph display function, the line graph display function and the bar graph display function.
    - Statistics ····· Sets the statistical graph function.
    - Scatter chart ····· Sets the scatter chart display function.
    - Level ····· Sets the level function.
  - Touch Key ····· Sets the touch key function.
  - Data Input
    - Numerical Input ····· Sets the numerical input function.
    - Ascii Input ····· Sets the ASCII input function.
  - Overlap Screen ····· Sets the overlap screen function.
  - Window Position
    - Overlap Window 1 ····· Sets the window screen position for overlap window 1.
    - Overlap Window 2 ····· Sets the window screen position for overlap window 2.
    - Superimpose Window ····· Sets the window screen position for superimpose window.
    - Key Window ····· Sets the key window position.
  - Key Window Custom
    - Input Value Area ····· Sets the input value display area in the key window.
    - Input Range Area ····· Sets the input range display area in the key window.
- Report
  - Common ····· Makes settings for the whole report function.
  - Parameter ····· Sets the parameters of each report screen.
  - Print Object
    - Number ····· Sets the value to be printed.
    - Comment ····· Sets the comment to be printed.
  - Line ····· Draws the rules (rectangle).
  - Text ····· Enters characters.
  - Header/Continue ····· Specifies the header and repeated lines.

- Communication
  - Download (to GOT)
    - Monitor Data ····· Downloads the created monitoring screen data to the GOT or the PC card.
    - Special Function/ Motion/Servo amplifier Monitor Data ····· Downloads the special Function monitoring data/Motion Monitor data/ Servo amplifier data to the GOT or the PC card.
  - Upload (from GOT) ····· Uploads the monitoring data stored in the GOT.
  - Install
    - OS ····· Installs the OS on the GOT or the PC card.
    - ROM_BIOS ····· Installs the ROM_BIOS on the GOT or the PC card.
  - Memory ····· Displays or clears the memory.
  - Data Check ····· Checks the number of monitoring data.
  - Option ····· Operation, display and communication environments are set.
- Common
  - Title
    - Screen ····· Sets the titles and details for each base screen, window screen and report screen.
    - Project ····· Registers the title and the ID number of the project data.
  - Switching Screen ····· Sets the base/window screen switching device.
  - Switching Station No. ····· Sets the station No. switching device.
  - Ethernet ····· Sets the monitor destination for Ethernet connection.
  - Gateway
    - Server ····· Sets the server function.
    - Client ····· Sets the client function.
    - Mail ····· Sets the mail send function.
    - FTP Server ····· Sets the FTP server function.
  - Password ····· Sets the security function (password, etc.).
  - Hardcopy ····· Sets the hard copy function.
  - Operation Panel ····· Sets the operation panel function.
  - Barcode ····· Sets the bar code function.
  - Sampling ····· Sets the sampling function.
  - System Information ····· Sets the device to check the GOT operation status on the PLC CPU.
  - Time action ····· Sets the time action function.
  - Observe Status ····· Sets the status monitoring function.
  - Alarm History ····· Sets the alarm history function in common with projects.
  - Floating Alarm ····· Sets the alarm flow Alarm.
  - Recipe ····· Sets the recipe function in common with projects.
  - Print Format ····· Sets the print format used on the alarm history display function.
  - Sound ····· Sets the voice file (WAV format).
  - GOT/PC Type ····· Sets the GOT type for the created screen data and the PC type for connection.
  - Script
    - Project script setting ····· Make project-based script setting.
    - Screen script setting ····· Make screen-based script setting.
  - Key Window Screen No. ····· Sets the screen used as a key window.
  - Auxiliary Setting
    - Screen ····· Performs auxiliary setting for each screen.
    - Project ····· Performs auxiliary setting for each project.
    - Update Script data ····· Updates the script data read to GT Designer to the latest script data.
- Screen
  - New Screen ····· New screen is created.
  - Load ····· Designated screen is opened.
  - Clear ····· Designated screen is closed.
  - Clear and Load ····· Editing screen is closed and another screen is opened.
  - Store ····· Editing screen is saved and editing continues.
  - Store As ····· Editing screen No. is changed.
  - Screen Utilize/Delete ····· Screen data is utilized/deleted in the editing project.
  - Change Size ····· Editing screen size is changed.
  - Cascade ····· The current screens are displayed in cascade.
  - Tile ····· The current screens are displayed in tile.
- Help
  - Update ····· Help which allows you to browse the updated additional function list.
  - Firstly ····· Fist operation help learned in the step of GT Designer.
  - Figure ····· Operation help for drawing figures.
  - Object ····· Operation help for setting objects.
  - Transfer/Print ····· Operation help for data transmission and printing.
  - About ····· Version of installed GT Designer is displayed.

(2) GT Converter

- Project
  - Open ····· Designates the monitor screen data for GOT800 to be converted.
  - Option
    - Conversion setting ····· Set conversion options for converting Digital's package data into GOT900 series data.
    - Folder of GT Designer ····· Designates the folder having the execution file of the GT Designer to be started.
  - Execute GT Designer ····· Starts the GT Designer.
  - Exit ····· Ends the data GT Converter.
- Start Conversion ····· Executes the conversion of the monitor screen data for GOT900.
- Screen
  - Log display ····· Displays the result of conversion to the monitor screen data for GOT900.
- Help
  - Help topics ····· Operation help for the GT Converter.
  - About ····· Displays the software version of the installed GT Converter.

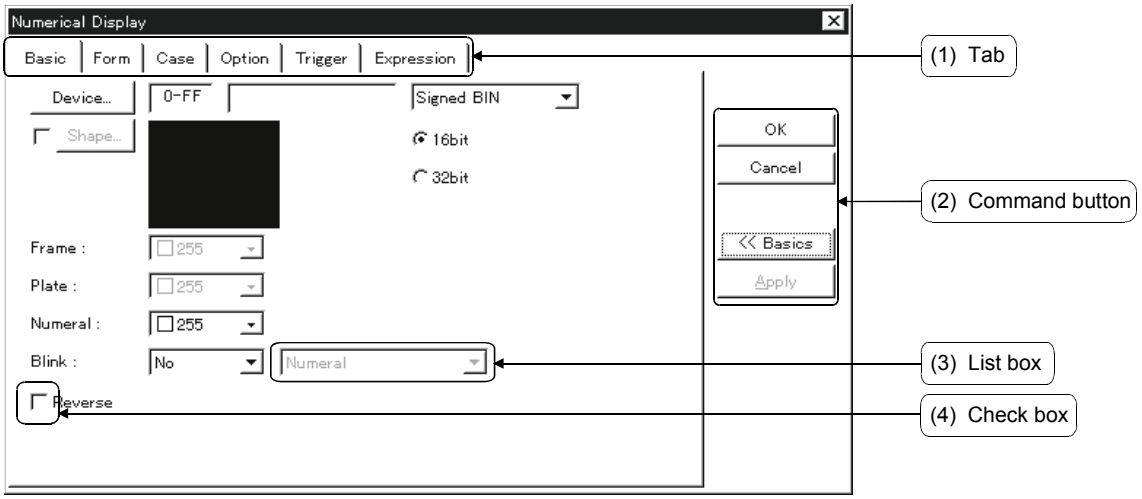
(3) GT Debugger

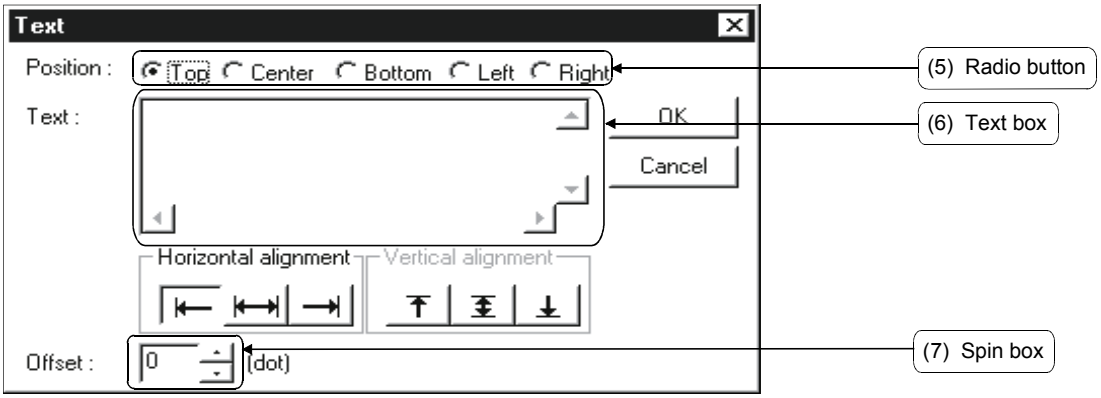
- File
  - Open ····· Opens the debugging file.
  - Close ····· Closes the debugging file.
  - Save ····· Saves the debugging file.
  - Save As ····· Saves the current debugging file and editing continues.
  - Exit ····· Ends the GT Debugger.
- Communication
  - Start ····· Starts communication with the GOT.
  - End ····· Ends communication with the GOT.
- Setting
  - Registration Device ····· Registers device for debugging.
  - Delete Device ····· Deletes registered device from device registration.
  - Option ····· Sets the communication port and the communication speed.
- Help
  - Reference topics ····· Operation help for GT Debugger.
  - About ····· Displays software version of installed GT Debugger.

(4) GT Manager

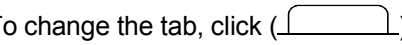
- Project
  - Execute ····· Starts GT Designer.
  - Renumber ····· Changes the drawing data screen number.
  - Delete ····· Deletes the drawing data.
  - Exit ····· Ends the GT Manager.
- Edit
  - Cut ····· Cuts the selected drawing data and stores in the clipboard.
  - Copy ····· Copies the selected drawing data and stores in the clipboard.
  - Paste ····· Pastes the drawing data stored in the clipboard.
- Help
  - Reference topics ····· Operation help of GT Manager.
  - About ····· Displays software version of installed GT Manager.

3.3 Basic Operation of Dialog Box





(1) Tab

To change the tab, click () where the setting item is displayed.

(2) Command button

OK or Cancel is available for the command button. Click the appropriate button for execution.

(3) List box

Click ▼ to display the list for selection and click the desired item.

(4) Check box

To execute the item, click ☐ to put ✓ mark.

(5) Radio button

Click ○ for the desired item.

(6) Text box

Input characters from the keyboard.

(7) Spin box

There are two cases; one is direct input of the value and the other is changing the value by clicking ▲ ▼. To input the value directly, click the spin box and input the value from the keyboard.

To change the value by clicking ▲ ▼, click ▲ and the value increases. Click ▼ and the value decreases.

3.4 Operation of Template

POINT

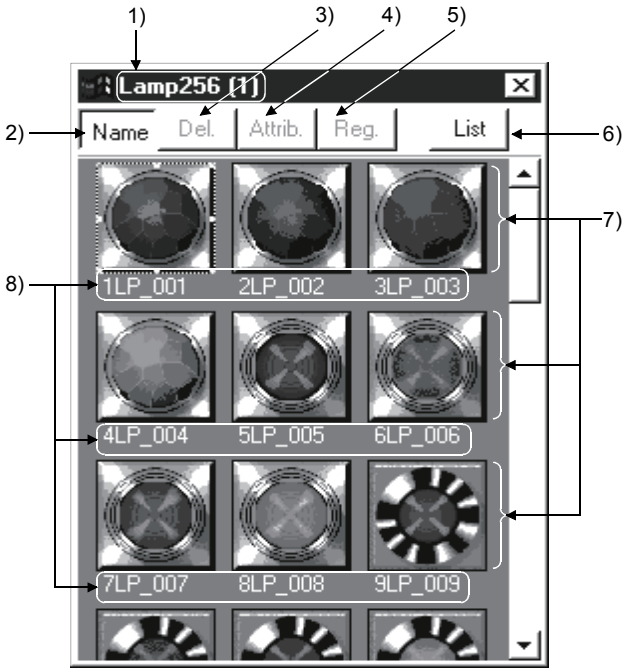
In the template function, Mitsubishi Electric Corp. owns the copyright for design of all parts, including 256 color BMP parts provided with the GT Designer.
Use of these parts is strictly prohibited for the purpose other than the GOT.

In the template function, figures or objects can be easily registered or pasted on the screen as parts (panelkit, parts).
A template has parts display area and tree display area.

(1) Parts/tree display area

(a) Parts display area

This displays parts (panelkit, parts) in the library registered in each folder (parts library, panelkit, parts).



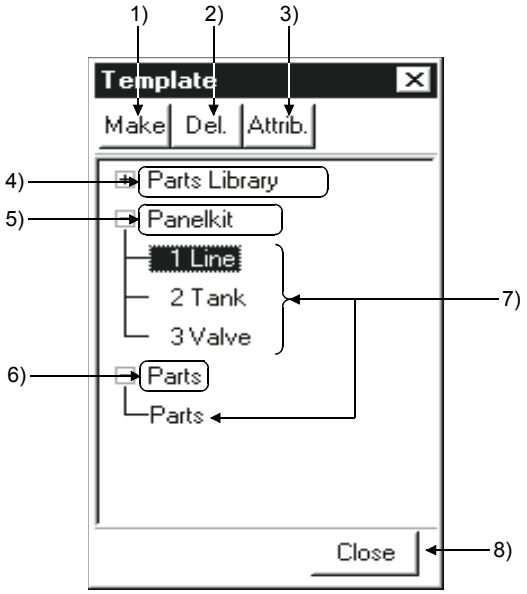
1) Displays the library name.
2) Click this to display or not display the panelkit name and the parts name.
3) Click this to delete the selected panelkit or parts.
4) Click this to change the registered number and the name of the selected panelkit or parts.
5) Select the figure or the object on the screen, and click it. It is then registered in the library as a panelkit or part.
6) Click this and the tree display area of the template appears.
7) Panelkit or parts are displayed.
8) Panelkit name or parts names are displayed.

POINTS

- Panelkit in the part library folder cannot be deleted and their attributes cannot be changed.
- Panelkit cannot be registered in the part library folder.

(b) Tree display area

The library where the panelkit or parts on the parts display area is registered is displayed.

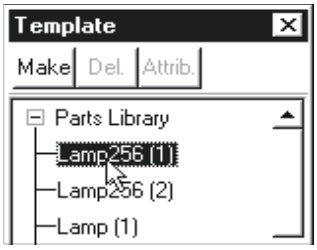


1) Click this to create the library of the panelkit folder.
   Up to 50 libraries can be created.
2) Click this to delete the library of the selected panelkit folder.
3) Click this to change the registered number and the name of the selected panelkit folder library.
4) Parts (not changed by user) provided by the GT Designer are registered.
   Some parts in the parts library folder show objects and others show figures only. Reading and pasting of these parts allow easy setting of lamp figure or switch figure.
5) Figures and objects drawn by a user can be registered as panelkit.
6) A figure registered by a user can be registered as a part.
   Parts registered in this step are used in the parts display function and the parts movement function.
7) Displays the library.
8) Click this to close the tree display area.

POINT
Only the panelkit folder library is used for creation, deletion and change of attribute.

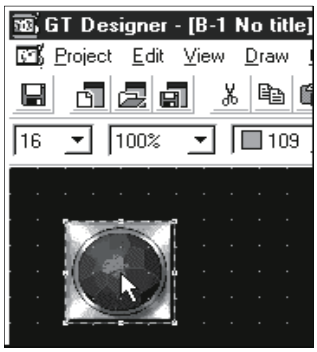
3 - 14

(2) Pasting method of parts



1) Bring up the tree display area and double click the name where the panelkit or parts for pasting is registered.

2) Click the desired panelkit or part on the parts display area.



3) Move the cursor to the position of pasting and click the mouse. The part is then pasted.

4) Perform either of the following operations:

<Continue pasting>

1) Hold down the [Ctrl] key and press the [C] key (Ctrl + C).
2) Holding down the [Ctrl] key and pressing the [V] key pastes the part (Ctrl + V). Drag and move it to the pasting position.
   You can continue pasting by repeating the operations in step 2) and later.

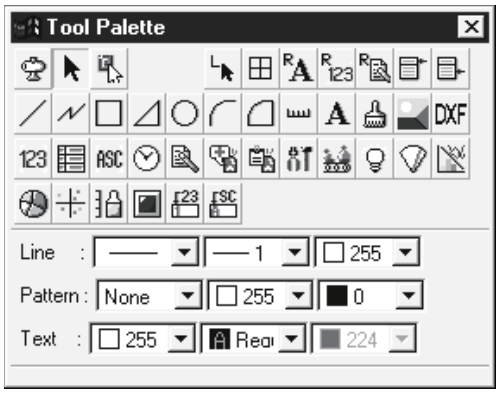
<Change the attribute>

Right-click and click the [Attribute] menu.

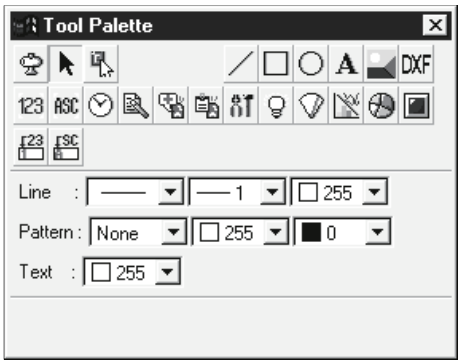
3.5 Operation of Tool Palette

Click each button to draw figures or to set objects.
Line attributes or figure painting pattern can be selected from the list box.

(Tool palette for GOT-A900 series)



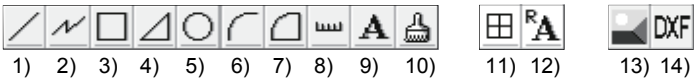
(Tool palette for GOT-F900 series)



(1) Cursor button

1) Panelkit
2) Cursor for editing figure and object
3) Cursor for placing template
4) Cursor for editing report range

(2) Figure drawing button

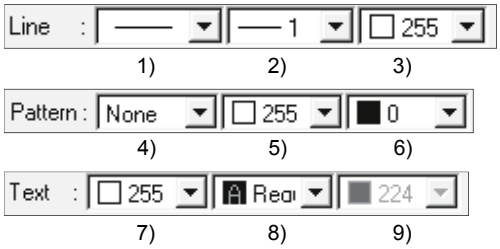


1) Line
2) Line Freeform
3) Rectangle
4) Polygon
5) Circle
6) Arc
7) Sector
8) Scale
9) Text
10) Paint
11) Report figure (line)
12) Report figure (text)
13) Insert BMP format file
14) Insert DXF format file

(3) Object setting button

1) Numerical display function
2) Data list display function
3) ASCII display function
4) Clock display function
5) Comment display function
6) Alarm history display function
7) Alarm list display function
8) Part display function
9) Part movement display function
10) Lamp display function
11) Panelmeter display function
12) Trend/Line/Bar graph display function
13) Statistics graph display function
14) Scatter chart display function
15) Level display function
16) Touch key function
17) Numerical input function
18) ASCII input function
19) Print object (numerical) function
20) Print object (comment) function
21) Setting report header line
22) Setting report repeat line

(4) Attribute setting list box



1) Set/change of line style
2) Set/change of line width
3) Set/change of line color
4) Set/change of painting pattern
5) Set/change of painting color
6) Set/change of painting background color
7) Set/change of character color
8) Set/change of character decoration
9) Set/change of character shade color

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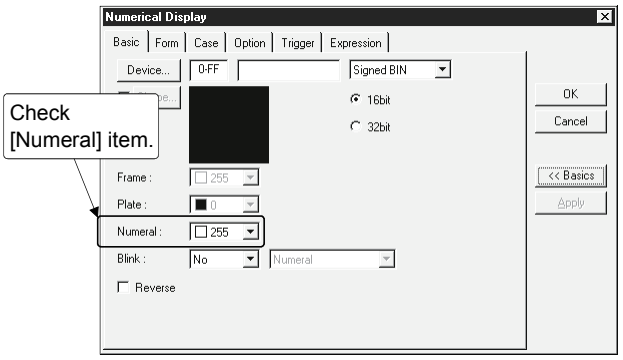
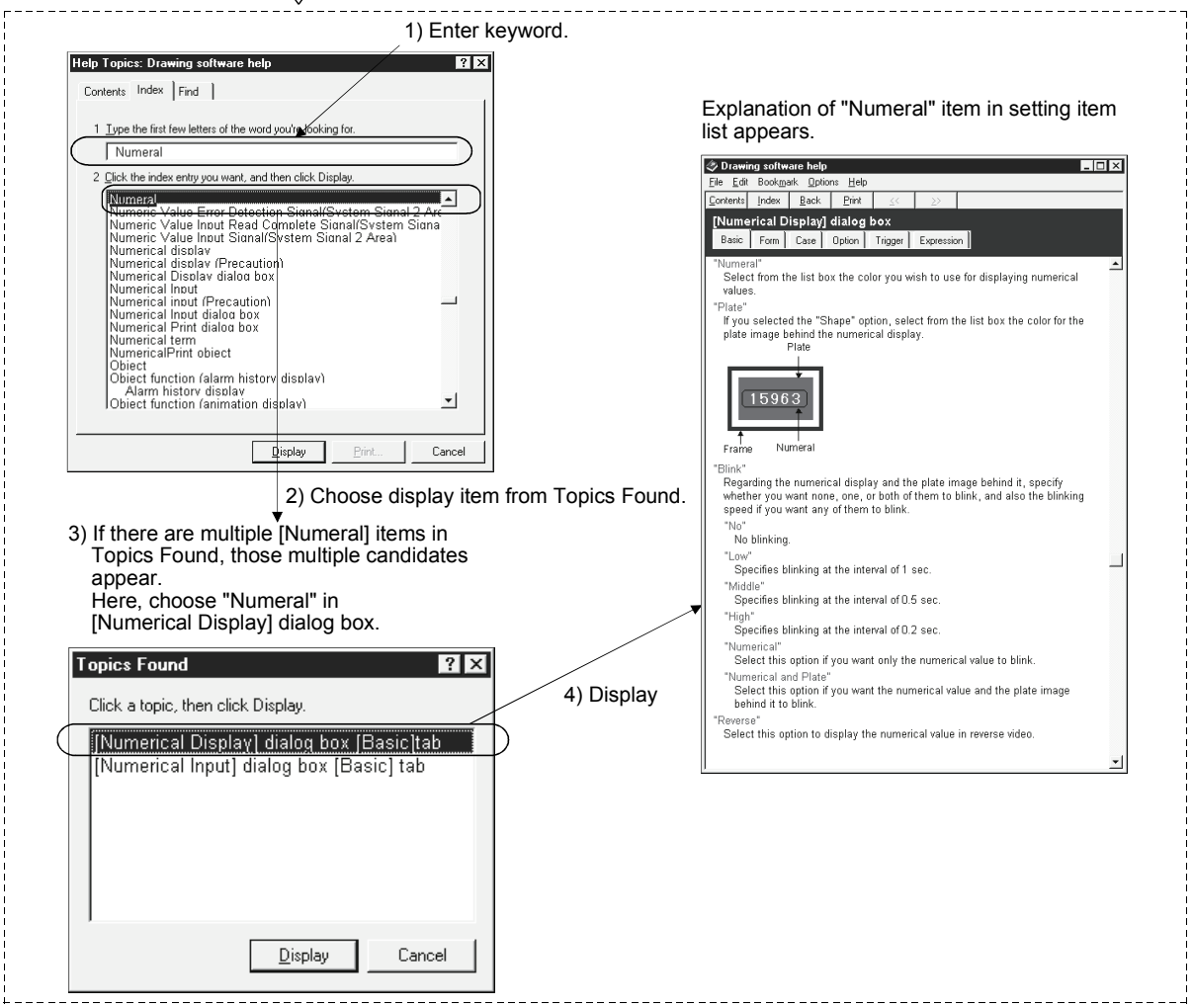
3.6 How to Use Help

Help is installed together with the corresponding software of GT Designer Version5. Help includes not only how to operate the corresponding software but also GOT screen data creating/editing methods and other information.

Example: When checking the [Numeral] item of the Numerical Display dialog box (Basic tab setting)

<GT Designer setting dialog box>





3.6.1 Help menu makeup

The help menu is made up as described below.

(1) GT Designer help

Update.....Lists the additional functions made available by updating GT Designer to Version5.
Firstly.....Describes the screen and project operations and common setting items.
Figure .....Describes figure drawing and editing operations.
Object .....Describes object setting and editing operations.
Transfer/Print .....Describes information required for data transfer and download/upload operations.
About .....Describes the version information of GT Designer.

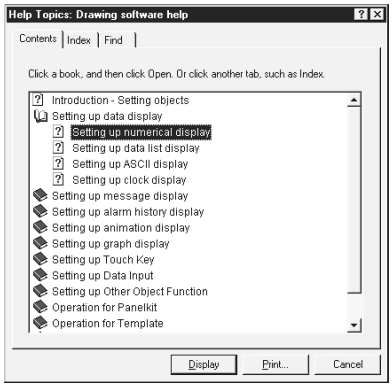
(2) GT Converter/GT Debugger/GT Manager help

Reference topics .....Describes operations for GT Converter/GT Debugger/GT Manager.
About .....Describes the version information of GT Converter/GT Debugger/GT Manager.

3.6.2 Printing the help screen

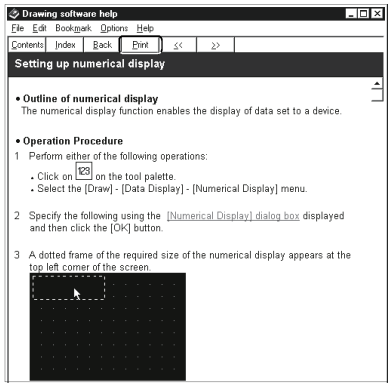
(1) Printing from the contents

Click or of the item to be printed to make selection, and click the Print button.



(2) Printing the current topic

Click the Print button.



3.7 Contents of Help

Some items are changed or added in Help as described below.
Check the details below before using GT Designer.

(1) Change of described contents

The described contents of the recipe function and hard copy function are changed as shown below.

Function	Before change	After change
Recipe function	When multiple recipe functions have been set and the operation of the recipe function having the specified file register name is being performed (access to the CPU file register is being made), the operation of another recipe function is not started if its trigger device turns on/off.	The restriction shown left is not applied.
Hard copy function	Be sure to turn on bit devices specified as start and abort triggers for 2 seconds or more.	Be sure to turn on/off bit devices specified as start and abort triggers for the period set at Trigger Watch Cycle or more.

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(2) Addition of description

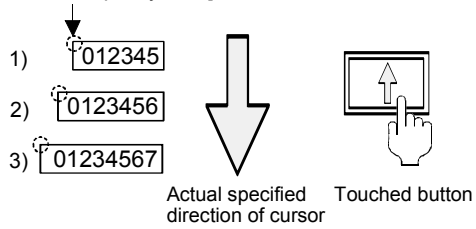
The following descriptions regarding the cursor move setting in [Auxiliary Setting] are added.

(a) When the cursor is not moved as designed

The following diagram shows the example of which the cursor is moved to the opposite position with the cursor direction of the touched arrow key. When changing the setting of [Position to specify area] from [Top-Left] to [Bottom-Right], the cursor is enabled to move the same cursor direction as the direction of the touched arrow key.

(Before setting change)

[Position to specify area]

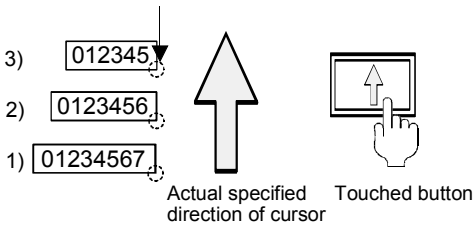


The cursor is moved in the order, 3) → 2) → 1).

As the top-left parts of three objects are not on the same x-coordinate, the cursor is moved to the closest object on the left when operating to move the cursor to top direction.

(After setting change)

[Position to specify area]



The cursor is moved in the order, 1) → 2) → 3).

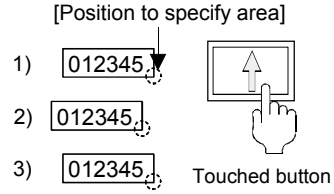
As the bottom-right parts of three objects are on the same x-coordinate, the cursor is moved to the same direction as the arrow key when changing [Position to specify area] from [Top-Left] to [Bottom-Right].

(b) When the cursor is not moved as designed even if changing the setting of above (a)

Readjust the arrangement of the objects as follows.

(Before setting change)

[Position to specify area]

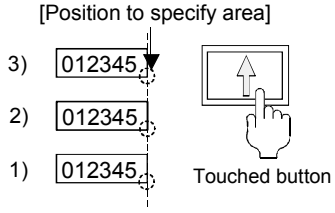


The cursor is moved in the order, 1) → 3) → 2).

As the [Position to specify area] is not on the same x-coordinate, the cursor is moved in the order, 1) → 3) → 3).

(After setting change)

[Position to specify area]



The cursor is moved in the order, 1) → 2) → 3).

Arrange the objects so that the [Position to specify area] may be on the same x-coordinate. (When moving the cursor from side to side, arrange the objects so that the [Position to specify area] may be on the same y-coordinate.)

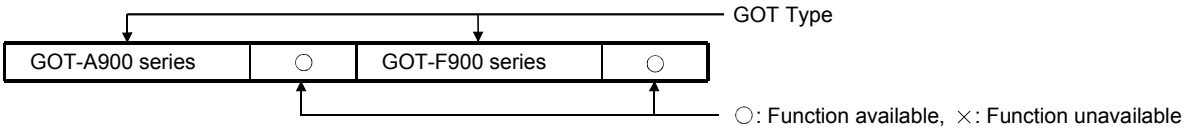
(c) When the cursor is not moved as designed even if readjust the arrangement of the objects

Directly touch the object to input.

CHAPTER4 SPECIFICATION

(1) Table at top right of each section

The table at top right of each section indicates the following meanings.

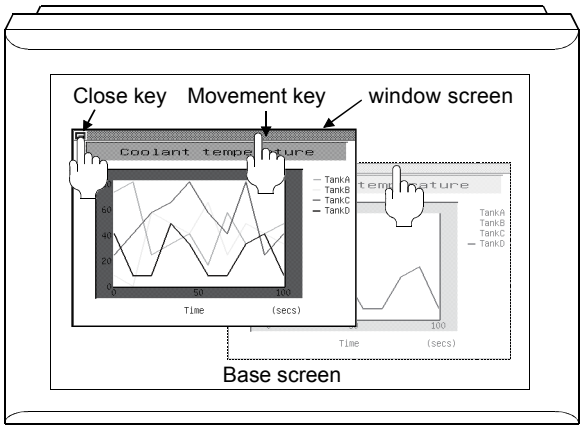


4.1 Types and Number of Screens Created

GOT-A900 series	○	GOT-F900 series	○

When the GOT-A900 series is used, the base screen, window screen (two display methods: overlap window and superimpose window) and report screen are created.
When the GOT-F900 series is used, the base screen and key window screen (display method: overlap window) can be created.

Touch the close key of the overlap window screen and the overlap window closes.

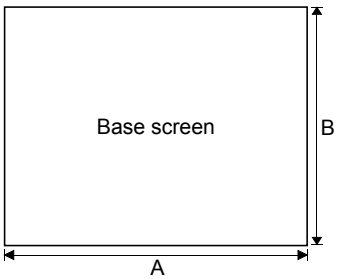


To move the overlap window screen, touch the movement key and then touch the desired position for movement.

4.1.1 Base screen

GOT-A900 series	○	GOT-F900 series	○

This screen is the basic display of the GOT. Each screen operates as an individual screen.



GOT Type	A (Dots)	B (Dots)	Max. Number of Screens	Registerable Screen Number
GT SoftGOT	1280	1024	4096	1 to 32767
GT SoftGOT	1024	768		
A985GOT/ GT SoftGOT	800	600		
A97＊GOT/ GT SoftGOT	640	480		
A960GOT		400		
A956WGOT	480	234		
A95＊GOT	320	240		
F940WGOT	480	234	500	1 to 500
F940GOT	320	240		
F930GOT	240	80		
F920GOT	128	64		

4.1.2 Window screen

GOT-A900 series	○	GOT-F900 series	○

POINT

The GOT-F900 series (except the F920GOT) allows only the key window to be created.

There are 2 window screens; the overlap window that pops up on the base screen, and the superimpose window that compose contents.
Up to 1024 window screens can be created. (Screen numbers can be registered from 1 to 32767.)

(1) Setting range of screen size

GOT Type	Base Screen (Horizontal × vertical dots)	Window Screen (Horizontal × vertical dots)	
		Maximum	Minimum
GT SoftGOT	1280×1024/1024×768	800×480＊	94×81
A985GOT/GT SoftGOT	800×600		
A97＊GOT/GT SoftGOT	640×480	640×400＊	
A960GOT	640×400		
A956WGOT	480×234	480×234＊	
A95＊GOT	320×240	320×240＊	
F940WGOT	480×234	480×234＊	
F940GOT	320×240	320×240＊	
F930GOT	240×80	240×80＊	
F920GOT	128×64	—	—

＊For the overlap window, the above values indicate the maximum setting range applicable when the close and move keys are hidden.
When the close and move keys are displayed, the maximum setting range is as follows.
When using GT SoftGOT/A985GOT: Maximum width 798 × length 463 dots
When using A97＊/960GOT: Maximum width 638 × length 383 dots
When using A956WGOT: Maximum width 478 × length 217 dots
When using A95＊GOT: Maximum width 318 × length 223 dots
When using F940WGOT, F940GOT and F930GOT: Functions as a key window.

Setting range for the width : Minimum 94 dots - Maximum 800 dots
Setting range for the length : Minimum 81 dots - Maximum 480 dots

POINT

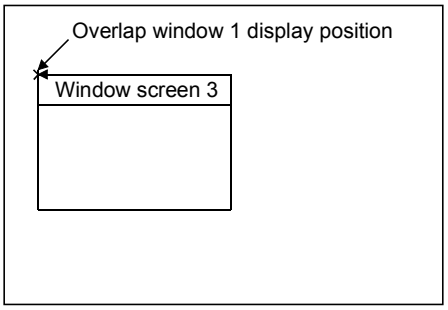
The initial value of the window screen size is set as follows:
- When using model other than A95＊GOT: Width 318 × Length 176 dots
- When using A95＊GOT/A956WGOT: Width 190 × Length 126 dots

(2) Display method of window screen

A window screen with the value stored in the window switching device is displayed at the designated display position.
(Set the display position by directly specifying it. Alternatively, it may be specified by the value of the specified device. (Overlap window only))

The window screen is closed when you touch the close button (overlap window only) or the window switching device turns to "0".

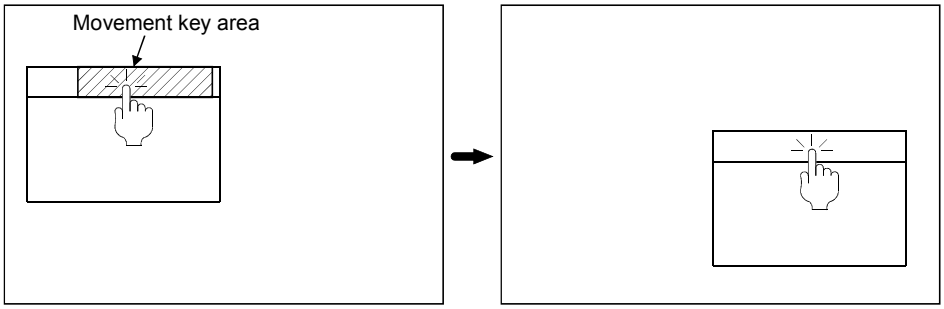
(Ex.) Overlap window 1
Screen switching device = 3



Overlap window is displayed at the left top of the window position.

(3) Movement of window screen (Overlap window only)

Touch the movement bar on the window screen to go into the movement mode.
Touch the movement bar again at the desired position for movement.



Touch the movement key area of the window screen.

The window screen moves to the desired position where touched.

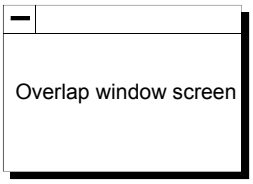
(4) Overlap window

(a) Display type of overlap window

The overlap window has a close (close screen) and a move bar (move screen) bar to perform manual window operation.

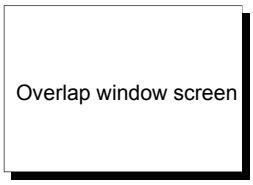
You can make setting to display or hide these close key and move bar.

<Close and move keys displayed>



Screen can be moved or closed manually.

<Close and move keys hidden>

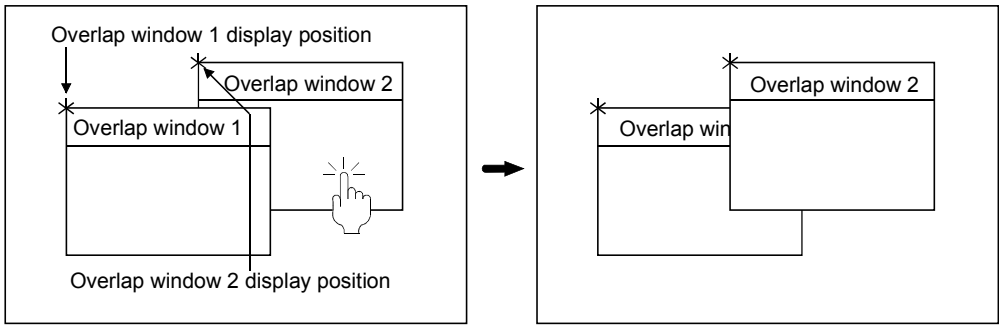


Screen cannot be moved. Set screen switching device value to close.

(b) When overlap windows are overlaid

Two overlap windows can be displayed together.

When two windows are overlaid, touch the lower hidden window to bring it up.



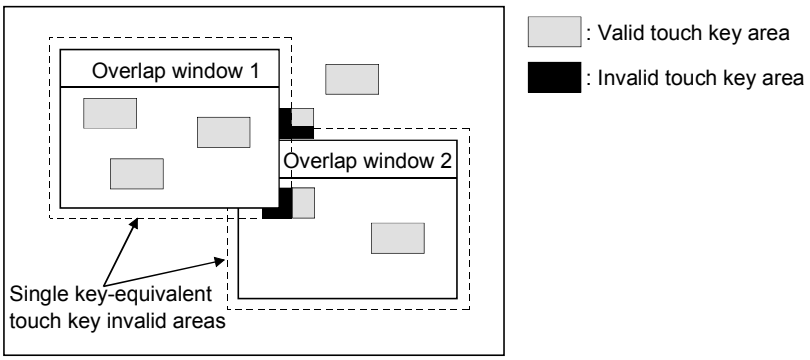
Touch the lower hidden window screen.

The lower window comes up.

(c) Relationships between overlap windows and touch keys

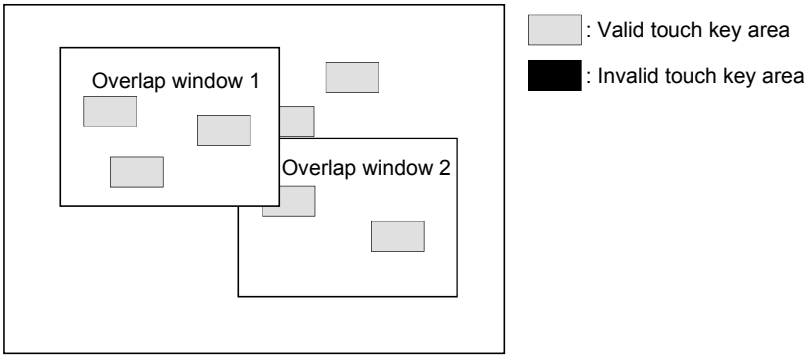
Touch keys are invalid around overlap windows in the area equivalent to one key (16 dots).

Therefore, note that touch keys hidden under the overlap windows are invalid if pressed.



The surrounding single key (16 dots)-equivalent touch key invalid areas may be eliminated only when the following conditions are satisfied.

- The close and move keys are set to be hidden.
- The window size is set to a multiple of 16 dots.

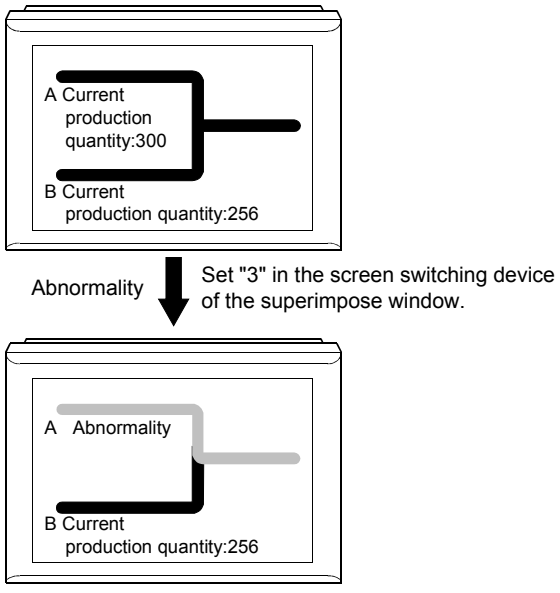


(5) Superimpose window

Retrieve one window screen on the base screen for composition. It can be used as part of the base screen.
While the superimpose window is displayed, changing the window screen number can change the part of the base screen dynamically.

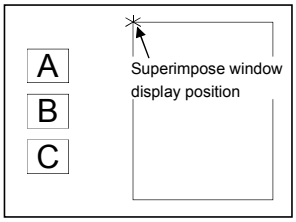
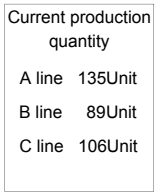
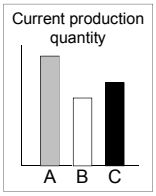
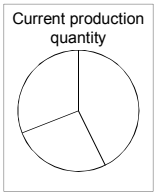
(Ex. 1) Add color to line A where abnormality has occurred.

Operation for abnormality in line A	Store 3 in the screen switching device
Figure of window screen number 3	

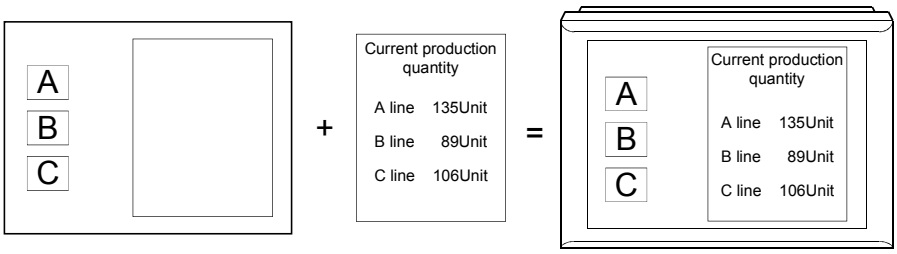


POINT
Note that the touch key underneath the overlap window does not function properly.

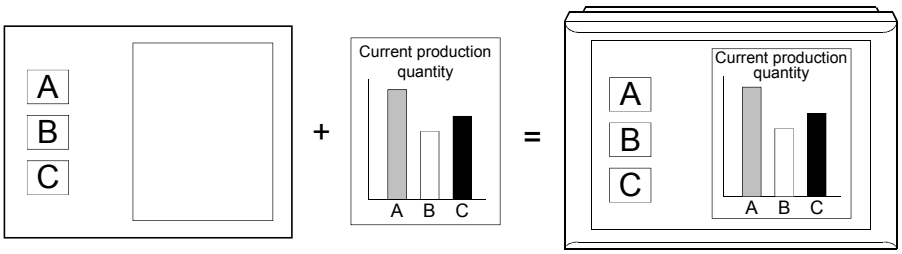
(Ex. 2) Switch the display method of manufacturing quantity with buttons.

<table>
<tr><td rowspan="3">Operation of each button</td><td>Button A</td><td colspan="3">Display the window screen of screen number 1</td></tr>
<tr><td>Button B</td><td colspan="3">Display the window screen of screen number 5</td></tr>
<tr><td>Button C</td><td colspan="3">Display the window screen of screen number 10</td></tr>
<tr><td colspan="2">Main screen</td><td colspan="3"> 
</td></tr>
<tr><td colspan="2">Window screen</td><td>Numerical display</td><td>Graph display</td><td>Statistical display</td></tr>
<tr><td colspan="2">Window screen number</td><td>1</td><td>5</td><td>10</td></tr>
<tr><td colspan="2">Screen</td><td> 
</td><td> 
</td><td> 
</td></tr>
</table>

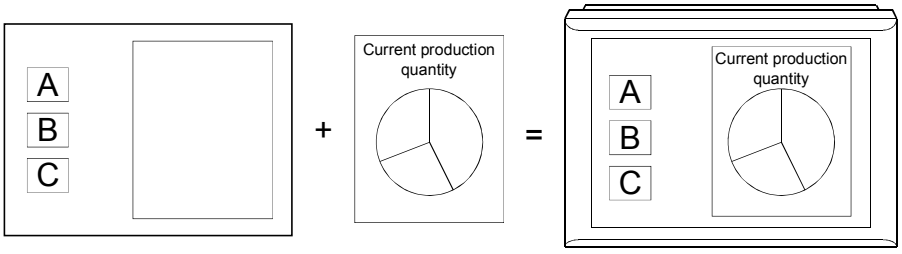
1) Touch button A to display window screen 1.



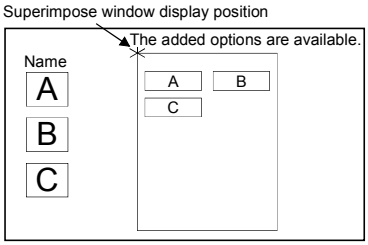
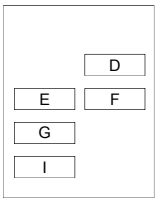
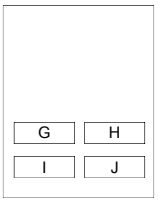
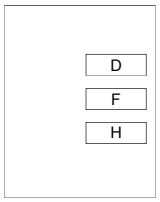
2) Touch button B to display window screen 5.



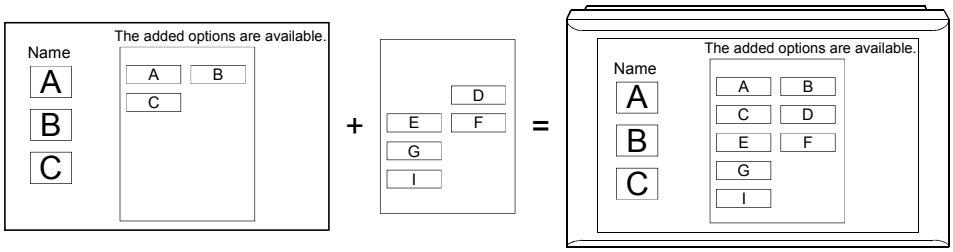
3) Touch button C to display window screen 10.



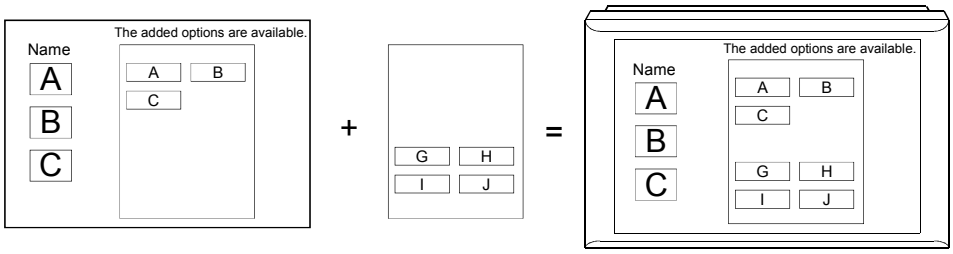
(Ex. 3) Switch the display/non-display of buttons for additional product option parts.

Operation of each button	Button A	Display the window screen of screen number 3		
	Button B	Display the window screen of screen number 7		
	Button C	Display the window screen of screen number 10		
Main screen				
Window screen		Options of product A	Options of product B	Options of product C
Window screen number		3	7	10
Screen				

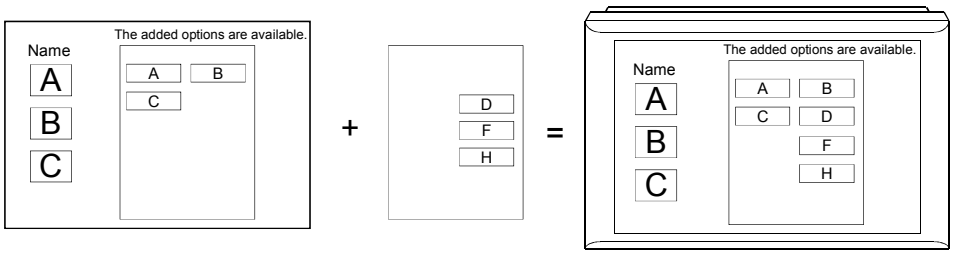
1) Touch button A to display window screen 3.



2) Touch button B to display window screen 7.



3) Touch button C to display window screen 10.



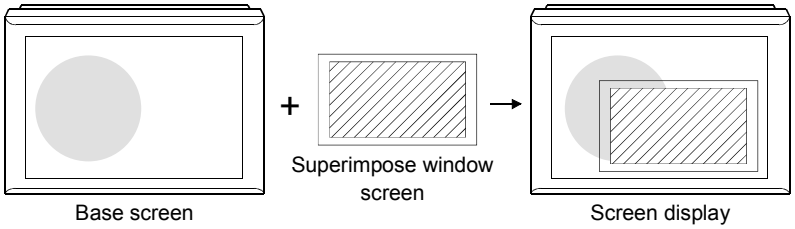
(6) Precautions for display of the superimpose window screen

If the superimpose window screen overlaps the base screen, be careful for the following points:

(a) Contents of each screen overlaps

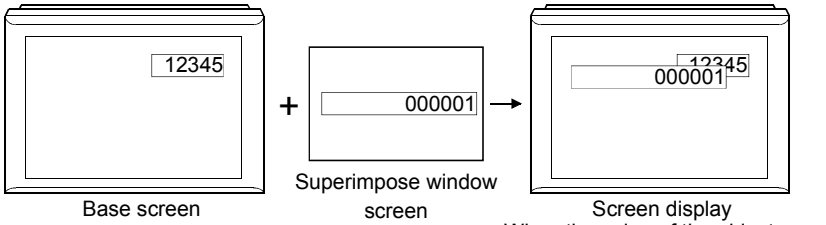
1) Figure data

Figures of superimpose window screen are brought to front.



2) Object data

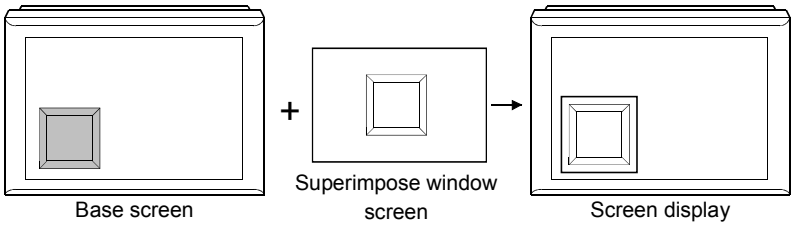
The object with changed values out of objects in the base screen and the Superimpose Window screen is brought to front.



When the value of the object changes, the object with changed value is brought to front.

3) Touch key

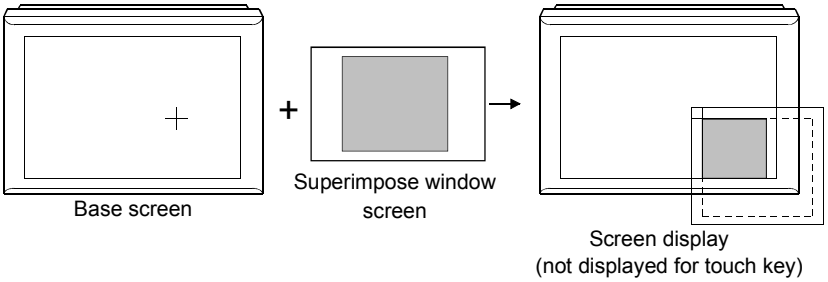
The touch key of the superimpose window screen is brought to front.
If the touch keys overlap, both touch key functions of the base screen and the superimpose window screen become effective when touched.



POINT
If the touch keys of the superimpose window screen and the base screen overlap and the touch keys are briefly touched, only the touch key of the superimpose window screen may function.

(b) If the superimpose window screen is displayed out of the base screen

With the reference point "+" at the upper left for the superimpose window screen, the limited area can be displayed on the base screen.



(c) If only one object that can be displayed in one screen overlaps

If only one object, such as data list or alarm list, that can be displayed in one screen overlaps, the objects can be displayed for the number of screens. However, the functions are limited and the display may not be correct.

4.1.3 About the report screen

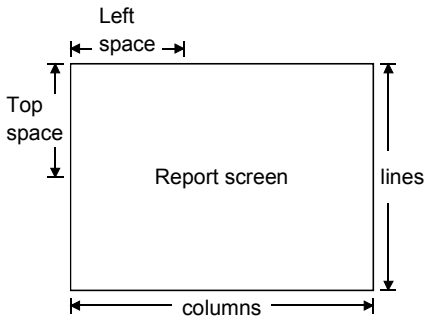
GOT-A900 series	○	GOT-F900 series	×

POINT

The A950 handy GOT / GOT-F900 series has no report screens.

The report screen is used to set the format and layout of data printed by a printer with the report function of the GOT.
Hence, only the functions usable with the report function may be set on this screen.
For details of the report function, refer to Section 6.7.

(1) Screen size setting range



Item		Setting Range
Format	lines	1 to 127
	columns	1 to 255
Margins	Top space	0 to 30
	Left space	0 to 254
Number of screens		1 to 8

(2) Setting for each printer

The screen size (print format settings) of the report screen must be changed according to the printable area of the printer.
You can use the following expressions to find the settings.
For more information on the print format settings, refer to the GT Designer Help.

- To find the maximum setting of the columns + left space (width)
  (Printable area width of printer [mm]) ÷ 25.4 × 15

  Example) Printable area width of printer is "204mm"
  204 ÷ 25.4 × 15 = 120.47…
  Hence, set the columns + left space to within 120 in the GOT print format setting.

- To find the maximum setting of the lines + top space (height)
  (Printable area height of printer [mm]) ÷ 4.23

  Example) Printable area height of printer is "280mm"
  280 ÷ 4.23 = 66.19…
  Hence, set the lines + top space to within 66 in the GOT print format setting.

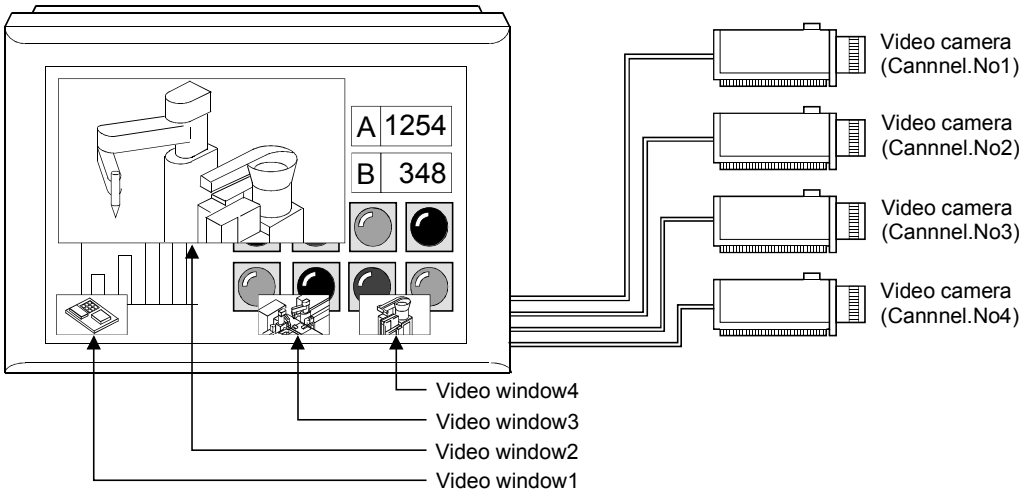
POINT

The printable area of the printer changes with the printer used.
For details of the specifications, refer to the instruction manual of the printer used.

4.1.4 Video window

GOT-A900 series	○	GOT-F900 series	×

A video window displays a picture taken with a video camera.
The video window has two different modes: the full mode in which a picture taken with a video camera is displayed as-is; and the clip mode in which part of a picture taken with a video camera is displayed.
Since video windows are independent of other screens, the base screen can be switched with the video windows open.
This section explains video windows.
Refer to Section 4.1.6 for video window settings.



POINT

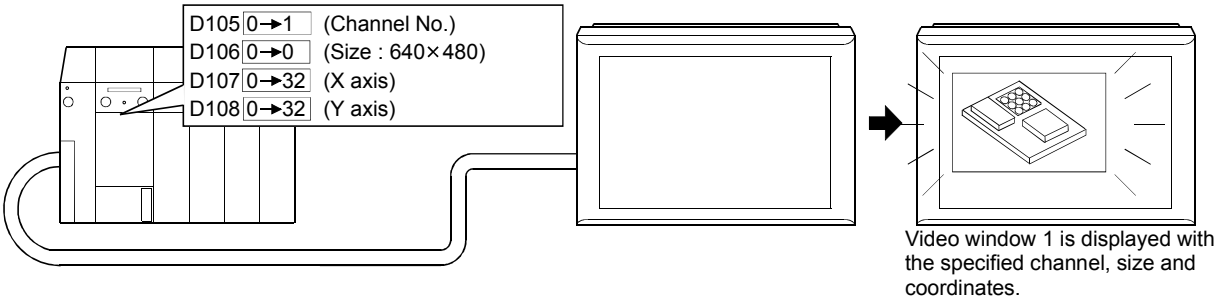
- Video windows may be used only when the A9GT-80V4/A9GT-80V4R1 is fitted to the A985GOT-V.
- No objects can be placed in a video window.
- The video signal format (NTSC/PAL) specified on the GOT side should be the same as the format of the video signal input from a video camera.
  If the video signal formats are different, a video picture may not be displayed properly.
  Refer to Section 4.1.6 for the way to choose the video signal format.
- A video picture is not displayed if a video signal is not input to the specified channel due to cable disconnection, camera power-off or the like.

(1) How to display the video window

(a) When the data of the device set as the "Channel No." turns to any of 1 to 4, the corresponding video window appears in the then states (Channel No., Size, Coordinates (X axis, Y axis)) of the monitored devices set on GT Designer.

(Example) When the picture of channel No. 1 is displayed in video window 1

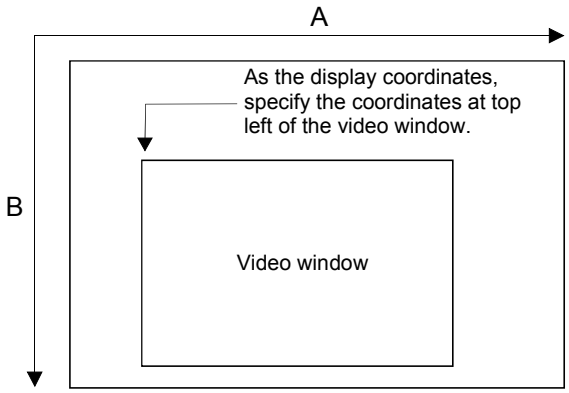
- Channel No.: D105
- X axis: D107
- Size: D106
- Y axis: D108



POINT
There is no close button for a video window. Use the device (reset the channel No. to 0) to close the video window.

(2) Video window display position

You can specify a video window display position within the following range.
A video window appears at the specified coordinates.
The video window can be placed on the base screen or in overlap window 1.



Type	A [dots]	B [dots]
Base screen	0 to 784	0 to 584
Overlap window 1	0 to 784	0 to 464

POINT

- Set the display coordinates as multiples of 16 (dots).
  If you set the coordinates which are not multiples of 16, they are automatically changed to multiples of 16.
- If the video window displayed on the base screen overflow the GOT screen, it is automatically placed within the GOT screen.
- If the video window displayed in overlap window 1 overflows the window screen, its video picture does not appear.
- The following indication and windows are displayed in front of video windows.
  Floating alarm function, key window, comment window, overlap windows (1, 2), test window
  (The priorities of the overlap windows (1, 2) and test window can be changed by making setting.)

(3) How to move video windows

There is no move button for a video window.
To move a video window, change the device values used to set the coordinates (X axis, Y axis).
In case more then two video windows are moved frequently, there might be no response to move by the overlap window touch.

(4) When placing video window in overlap window

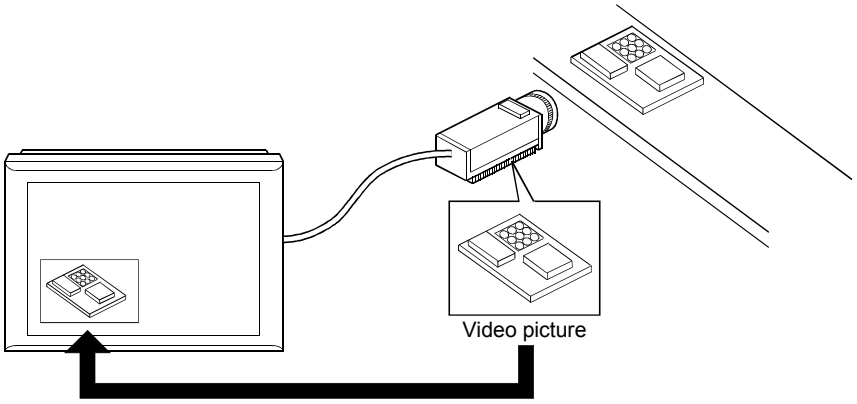
(a) A video window may be placed only in the overlap window 1.
(b) All windows displayed in front of the overlap window 1 are shown in front of the video window.
(c) The video window placed in the overlap window 1 is transparency -processed automatically.
(Refer to (8) for the transparency processing.)
(d) When the screen specified to place the video window is changed from the base screen to the overlap window 1 while the video window is being displayed, the video window is closed once and then opened in the overlap window 1.

(5) Full mode

In the full mode, the picture taken with a video camera is displayed on the GOT as-is.

When the full mode is used, up to four video windows can be displayed simultaneously.

A single video window can display pictures by changing one channel number to another.



(a) Resolution (effective pixels) and size

In the full mode, a video window can be displayed at the resolution of 720×480 dots or 640×480 dots, and its size can be changed in three steps (100%, 50%, 25%) at each resolution.

Size	Resolution	
	At 720×480 dots	At 640×480 dots
At 100%	720×480 dots	640×480 dots
At 50%	360×240 dots	320×240 dots
At 25%	180×120 dots	160×120 dots

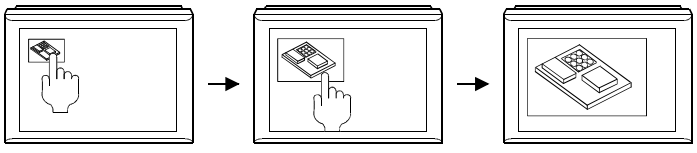
*1 Set the same resolution to four channels.

(b) Size change

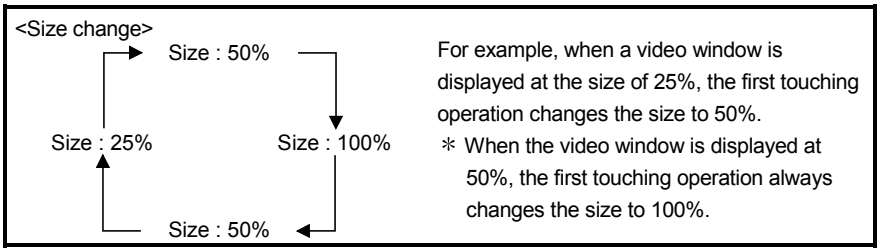
The video window size can be changed in the following procedure.

1) Touch the video window.

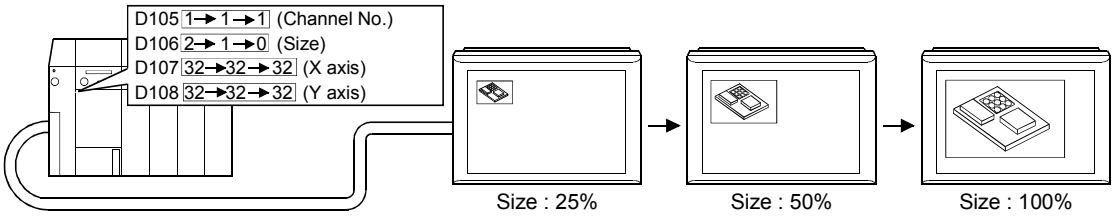
(You can disable size change through touching operation by turning b4 of “Video/RGB Common” device on. (See Section 4.6.1, item (2).))



Touching operation changes the video window size as described below.



2) Change the value of the device where the size has been set.

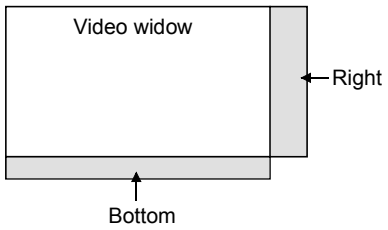


(c) When multiple video windows are displayed

1) When opened, the video window appears in the forefront.
2) When the coordinates and/or size of the video window is changed, a new video window appears in the forefront.
3) When video windows are overlapping, touching the lower video window shows it in the forefront.
4) When you attempt to display the picture of the same channel in multiple video windows, it appears only in the last specified video window and the other windows are displayed blue.

(d) Touch key disable areas around the video window

The displayed video windows of specific sizes have touch key disable areas as indicated below.

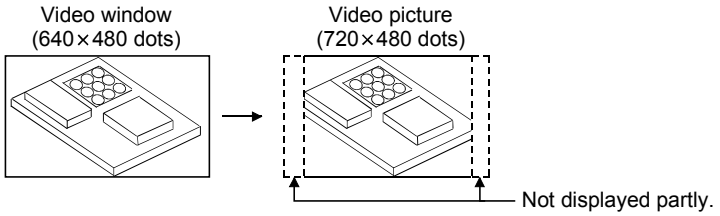


Size	Resolution	
	At 720×480 dots	At 640×480 dots
At 100%	720×480 dots (No disable areas)	640×480 dots (No disable areas)
At 50%	360×240 dots	320×240 dots (No disable areas)
At 25%	180×120 dots (Disable area: 12 dots at right, 8 dots at bottom)	160×120 dots (Disable area: 8 dots at bottom)

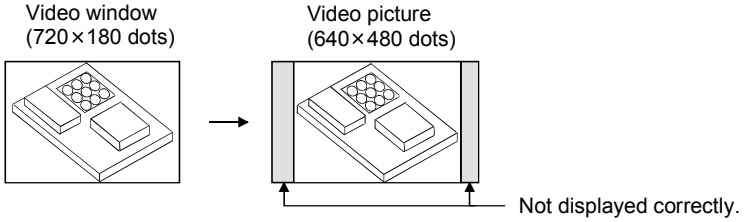
POINT

- When touching operation is performed to return the size to that at the video window opening time, the display position also returns to the position at the video window opening time.
- The resolution of the video picture input from a video camera should be the same as that of the video window displayed on the GOT.
  The following cases will be happened due to different resolutions.

(Example 1)
Video picture resolution: 720×480 dots
Video window resolution: 640×480 dots



(Example 2)
Video picture resolution: 640×480 dots
Video window resolution: 720×480 dots

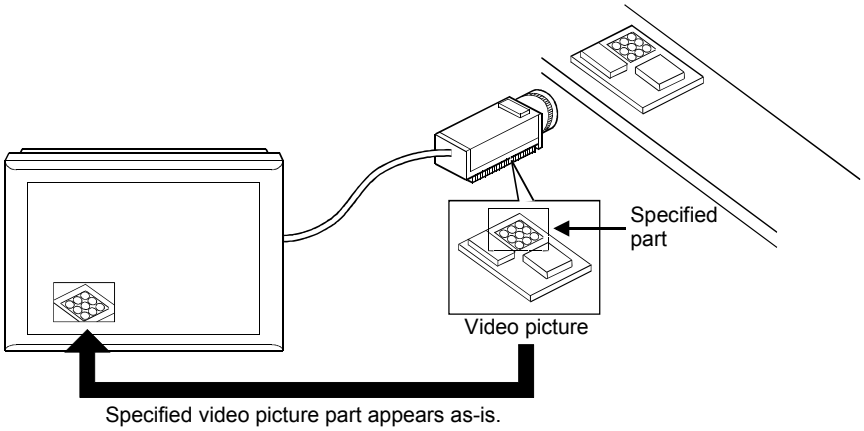


Refer to Section 4.1.6 for the way to select the video window resolution.

4 - 16

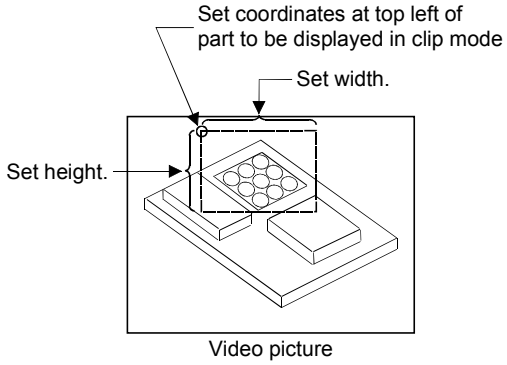
(6) Clip mode

In the clip mode, the specified part (clip area) of the picture taken with a video camera is displayed on the GOT in full size.
The display area of the video window can be decreased without the displayed picture being reduced.
In the clip mode, you can use only video window 1 and cannot use video windows 2 to 4.



(a) Clip area selection

As a clip area, specify the coordinates at top left of the part you want to display from the video picture and set the height (64 to 720 dots) and width (64 to 480 dots).



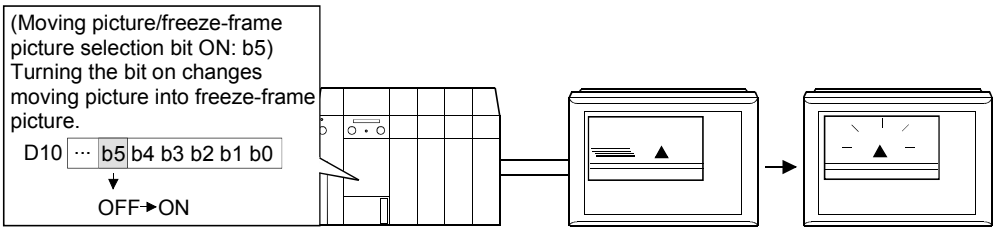
POINT

- In the clip mode, video windows 2 to 4 are closed and cannot be opened.
- In the clip mode, the displayed video window will not operate if touched.
- When video windows 2 to 4 are open, changing the full mode to the clip mode forces them to be closed.
- When the clip mode is returned to the full mode, video windows 2 to 4 are displayed in accordance with the specified channel numbers, coordinates and sizes valid at that point.

(7) Freeze-frame picture

The video picture displayed in the full or clip mode can be changed to a freeze-frame picture.

When two or more video windows are displayed in the full mode, all of them are changed to freeze-frame pictures.



POINT

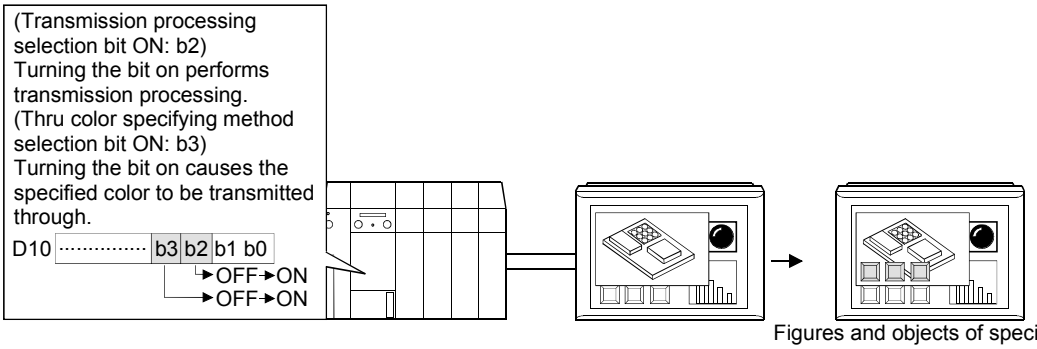
- While the screen is still, touching operation for a video window and switching from the PLC are invalid.
  Hence, note that the following operations are disabled while the screen is still.
  Window channel changing, size changing, display position changing, closing and opening of video window
- If the picture of the video window placed in the overlap window is changed to a freeze-frame picture, moving the overlap window causes the video picture to be hidden.

(8) Transparency processing

You can specify the through color to display the objects and figures located under a video window.

You can choose either of "Other than specified color is transmitted through" and "Specified color is transmitted through".

When two or more video windows are displayed, all windows are transmission-processed.



Figures and objects of specified color can be transmitted through.

Through color specifying method selection bit: b3	Through Color	Display
OFF (Other than specified color is transmitted through)	0 (black)	Figures and objects of colors other than black are displayed on the video window.
ON (Specified color is transmitted through)	0 (black)	Black figures and objects are displayed on the video window.

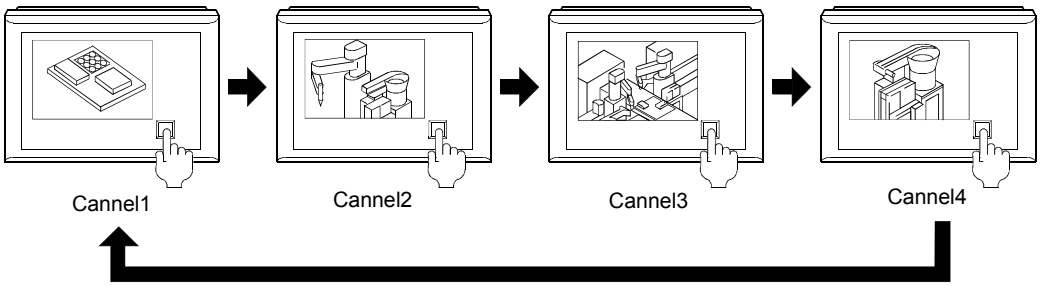
POINT

- The touch keys and numerical/ASCII input function under video windows are made usable by performing transparency processing.
- When placing a video window in the overlap window 1, transparency processing is performed automatically if the transmission processing selection bit (b2) is OFF.

(9) Examples of using video windows

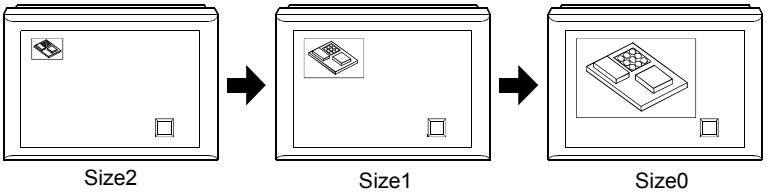
(a) Examples of using full mode

1) A single video window is used to display channels 1 to 4, and a touch key is used to switch between the channels.



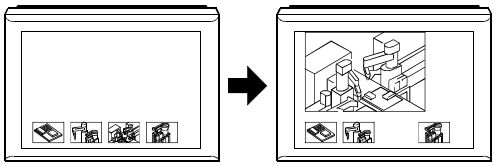
Device	Setting	Device	Setting	Device	Setting
D100	Set video input signal. (NTSC or PAL)	D106	Change from 1 to 2 to 3 to 4, then again from 1 ... (Channel No.)	D108	32 (X axis)
		D107	0 (Size)	D109	32 (Y axis)

2) While channel 1 is being displayed, change the video window size.



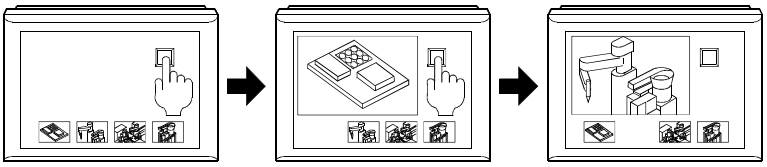
Device	Setting	Device	Setting	Device	Setting
D100	Set video input signal. (NTSC or PAL)	D106	1 (Channel No.)	D108	32 (X axis)
		D107	2→1→0 (Size)	D109	64 (Y axis)

3) While channels 1 to 4 are being displayed in four video windows, change the size of video window 3.



Device	Setting	Device	Setting	Device	Setting
D100	Set video input signal. (NTSC or PAL)	D106	1 (Channel No.)	D114	3 (Channel No.)
		D107	2 (Size)	D115	2→0 (Size)
		D108	32 (X axis)	D116	384→32 (X axis)
		D109	480 (Y axis)	D117	480→0 (Y axis)
		D110	2 (Channel No.)	D118	4 (Channel No.)
		D111	2 (Size)	D119	2 (Size)
		D112	208 (X axis)	D120	560 (X axis)
		D113	480 (Y axis)	D121	480 (Y axis)

4) While channels 1 to 4 are being displayed in four video windows, change the video window sizes using the touch key function and script function.

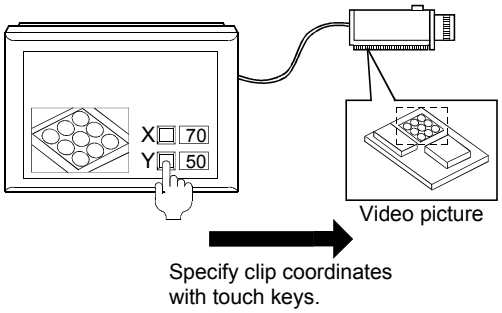


Device	Setting	Device	Setting	Device	Setting
D100	Set video input signal. (NTSC or PAL)	D106	1 (Channel No.)	D114	3 (Channel No.)
		D107	2→0→2 (Size)	D115	2 (Size)
		D108	32 (X axis)	D116	384 (X axis)
		D109	480→0→480 (Y axis)	D117	480 (Y axis)
		D110	2 (Channel No.)	D118	4 (Channel No.)
		D111	2→0 (Size)	D119	2 (Size)
		D112	208→32 (X axis)	D120	560 (X axis)
		D113	480→0 (Y axis)	D121	480 (Y axis)

Create a script which repeats the following every time the touch key is pressed.
1) Window 1: Small to large
2) Window 1: Large to small
Window 2: Small to large
3) Window 2: Large to small
Window 3: Small to large

(b) Examples of using clip mode

1) Using touch keys, change the clip coordinates of a video picture.



Device	Setting	Device	Setting
D100	Clip mode selection	D105	1 (Channel No.)
D101	70→75→80 (X axis to be clipped)	D106	0 (Size)
D102	50→55→60 (Y axis to be clipped)	D107	112 (X axis)
D103	256 (Clip width)	D108	112 (Y axis)
D104	256 (Clip height)	—	—

4.1.5 RGB screen

GOT-A900 series	○	GOT-F900 series	×

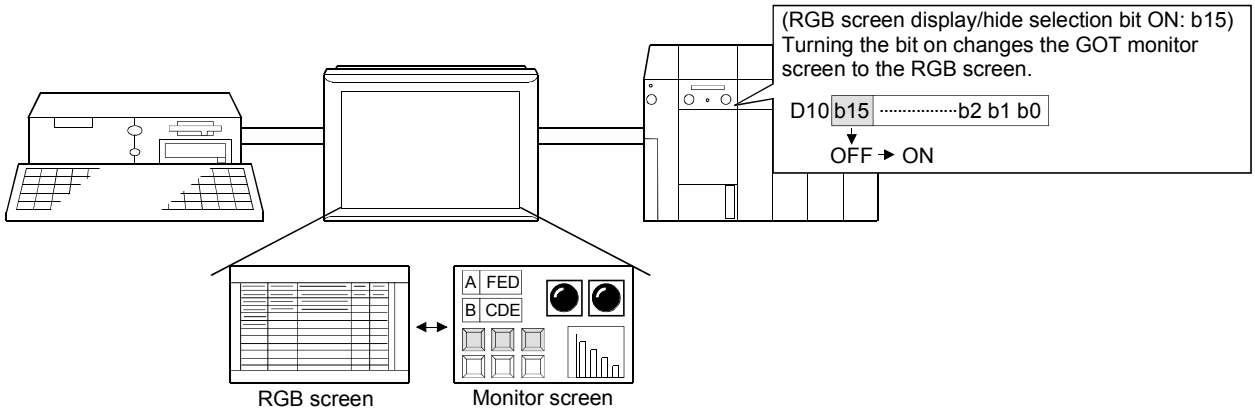
The picture of a personal computer can be displayed on the GOT.
An RGB screen allows SVGA (800×600 dots) or VGA (640×480 dots) to be selected.
This section explains the RGB screen functions.
Refer to Section 4.1.6 for RGB screen settings.

POINT

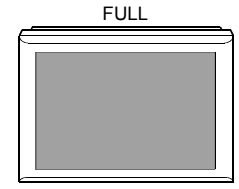
An RGB screen is usable only when the A9GT-80R1/A9GT-80V4R1 is fitted to the A985GOT-V.

(1) How to display RGB screen

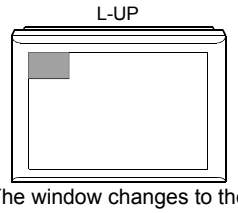
(a) An RGB screen is switched from/to the GOT monitor screen depending on whether the monitored RGB screen display/hide selection bit (bit device in word device) set on GT Designer is on or off.



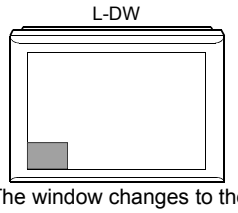
(b) You can touch the RGB screen to return to the monitor screen.
This function can be selected from among the following six different operations.



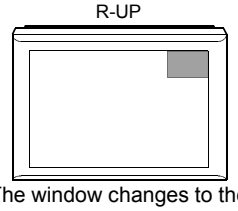
Touching any place in the window switches it to the monitor screen.



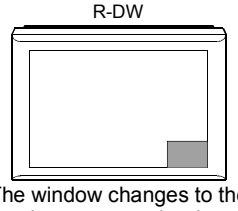
The window changes to the monitor screen only when you touch its top left.



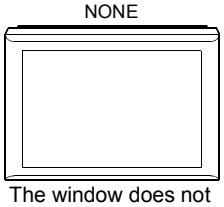
The window changes to the monitor screen only when you touch its bottom left.



The window changes to the monitor screen only when you touch its top right.



The window changes to the monitor screen only when you touch its bottom right.



The window does not change to the monitor screen if you touch it.

1) Instructions for touching the RGB screen to change it to the GOT monitor screen

When you have touched the RGB screen to change it to the GOT monitor screen, the RGB screen display/hide selection bit does not turn off.
Hence, you cannot change the GOT monitor screen to the RGB screen again since the RGB screen display/hide selection bit is on.
When you have touched the RGB screen to change it to the GOT monitor screen, turn off the RGB screen display/hide selection bit.

Using the script function allows you to turn off the RGB screen display/hide selection bit when you have touched the RGB screen to change it to the GOT monitor screen.
The following is the script function setting example to turn off the RGB screen display/hide selection bit.

Setting Item	Settings
Set the Switching screen	Video/RGB Common Device: D100 (Selection of RGB screen display or hide bit: D100.b15)
Set the System information	Write Device: Set 15 points starting from D33.
Set the Script Function	Type: Project Script
	Trigger Type: Ordinary
	Data Format: Signed BIN 16/32bit

	Script description:
	if(([b:D100.b15]==ON) //When the RGB screen display/hide selection bit is on and
	&&([w:D35]==-1)){ // -1 (RGB screen) is in Base screen number storage area of System information
	[b:TMP0000.b0]=ON ; //The RGB screen displaying flag is turned on
	}
	else{
	if([b:TMP0000.b0]==ON){ //When the RGB screen is changed to the monitor screen
	[b:D100.b15]=OFF ; //the RGB screen display/hide selection bit is turned off
	[b:TMP0000.b0]=OFF ; //the RGB screen displaying flag is turned off
	}
	}

POINT

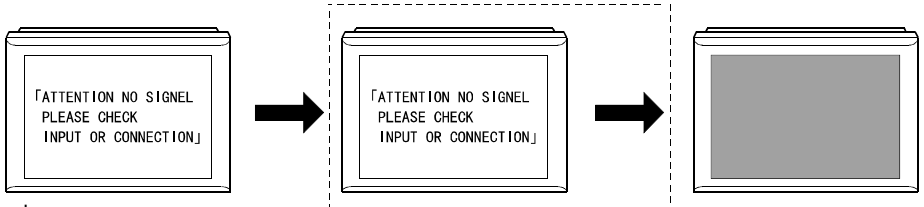
- When VGA (640×480 dots) is used, the margins are displayed black since the resolution differs from that of the A985GOT-V (800×600 dots).
- When offline (e.g. when monitor screen data is downloaded from GT Designer), the GOT shows a screen.
  If the RGB screen display controlling bit is on when the GOT is switched from offline to online, the monitor screen is displayed once and the RGB screen is then displayed.
- Each object operates while the RGB screen is being displayed.
- While the RGB screen is being displayed, the RGB screen cannot be printed or a BMP file cannot be saved on a PC card if you use the hardcopy function.

(2) Screen save for RGB screen

To use the screen save function while the RGB screen is being displayed, the display power-saving function of the personal computer must be active.
If it is inactive, the screen save function set on the GOT is invalid.

Screen save for an RGB screen is performed in the following sequence.

(Only when human sensor setting is made)



The above message appears after detection of display power-saving status of personal computer.

The display (message) remains unchanged after elapse of human sensor off delay time set on GOT side.

After elapse of screen save time set on GOT side, GOT enters screen save status.

POINT

- When the GOT monitor screen is being displayed, screen save operates independently of whether the display power-saving function of the personal computer is active or not.
  For details of the GOT screen save function, refer to the GOT-A900 series operating manual (GT Works Version 5/GT Designer Version 5 compatible Extended • Option Functions Manual).
- If the RGB signal is not input to the GOT due to cable disconnection or the like, the screen displayed is the same as in the power saving status of the personal computer display.

4.1.6 Video window/RGB screen settings

The video window/RGB screen operates in accordance with the monitored devices set on GT Designer.
The following table indicates the contents of the devices set on GT Designer.

(1) Contents of devices set on GT Designer

Item	Description	Setting Details
Video/RGB Common＊1	—	Device used to control the operation of a video or RGB screen. (Refer to (2) for device contents.)
Thru Color	0 (Black) to 255 (White)	Specify the color for transparency processing.
Clip	X axis	Specify the X axis where a video picture will be clipped in the clip mode.
	Y axis	Specify the Y axis where a video picture will be clipped in the clip mode.
	Width	Specify the width of the clipped picture.
	Height	Specify the height of the clipped picture.
Video Window 1＊2	Channel No.	Specify the channel number to be displayed in video window 1. (0 to 4)
	Size＊3	Specify the size of the video window. (0: 100% display, 1: 50% display, 2: 25% display)
	X axis	Specify the X axis of the video window to be displayed on the base screen or in overlap window 1.
	Y axis	Specify the Y axis of the video window to be displayed on the base screen or in overlap window 1.

＊1 When an RGB screen is displayed, the devices other than "Video/RGB Common" cannot be set.

＊2 Set video windows 2 to 4 to set multiple video windows.(Settings are the same as those of video window 1.)

＊3 When the display size is changed by PLC CPU, the set device value will be altered.
When the display size is changed by touching the video window, the set device value will not be altered.When the size on the display is changed by the video window touch, the device will not be altered.

(2) Contents of "Video/RGB Common" device

The device specified as "Video/RGB Common" stores the following data. Turning on/off the corresponding bit device controls the operation of the video/RGB screen.

Bit Position	Description	Bit Status	Remarks
b0	Selection of full or clip mode	ON : Clip mode is selected. OFF : Full mode is selected.	Valid when video window is open. Can be changed while video window is being displayed.
b1	Selection of video window placement screen	ON : Overlap window 1 is selected. OFF : Base screen is selected.	Transparency processing is performed automatically when the b1 is ON
b2	Selection of transparency processing	ON : Transparency processing is performed. OFF : Transparency processing is not performed.	
b3	Selection of thru color specifying method	ON : Specified color is transmitted through. OFF : Other than specified color is transmitted through.	Valid when b1 and b2 are on.
b4	Selection of whether size is changed or not when video window is touched	ON : Size is not changed. OFF : Size is changed.	Valid when Valid when video window is open. Can be changed while video window is being displayed.
b5	Selection of moving or freeze-frame picture ＊2＊3＊4	ON : Freeze-frame picture is selected. OFF : Moving picture is selected.	ON : Valid only while video window is being displayed as moving picture. OFF : Valid only while video window is being displayed as freeze-frame picture.
b6	Selection of video window display priority	ON : Video windows are displayed in front of overlap and test windows. OFF : Video windows are displayed at rear of overlap and test windows.	Valid when Valid when video window is open. Can be changed while video window is being displayed.
b7	Reserved	—	
b8	Selection of video input signal (format)	ON : Input in PAL system. OFF : Input in NTSC system.	Valid when video window is opened first after power-on of GOT. Cannot be changed thereafter.
b9	Selection of video picture resolution	ON : 720×480 dots are selected. OFF : 640×480 dots are selected.	Valid when video window is opened first after power-on of GOT. Cannot be changed thereafter.
b10 to b14	Reserved	—	
b15	Selection of RGB screen display or hide ＊5	ON : RGB screen is displayed. OFF : GOT monitor screen is displayed.	ON : Valid only when GOT monitor screen is displayed. OFF : Valid only when RGB screen is displayed.

＊1 With the exception of b15, selection is made for all video windows.

＊2 The following operations cannot be performed when the bit is on.
Open a video window. (The video window cannot be opened when it is not being displayed.)
Close the video window.
Change the display position of the video window.

＊3 In case the power supply of GOT is turned on while the bit is ON, the video window is not shown.
In order to show the video window, the power supply of GOT should be turned on while the bit is off.

＊4 In case the other bit is turned on simultaneously, it is with no effect.(the b5 takes priority.)

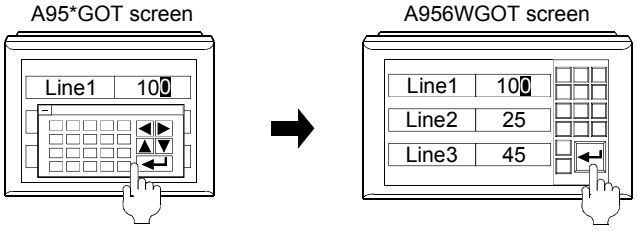
＊5 When any of the utility function, system monitor function, ladder monitor function, special module monitor function, network monitor function and list editor function screens is displayed on the GOT, it does not change to the RGB window if the bit turns on.
It changes to the RGB screen after the corresponding function is terminated.

4.1.7 Wide display screen

GOT-A900 series	○	GOT-F900 series	×

The wide size GOT has a wide screen (landscape monitor) to provide a wide display. When drawing, refer to the following drawing method and precautions for the wide screen.

(1) Drawing method effective for wide screen



Input object:
Appears only when necessary.

Input object:
Always appears.

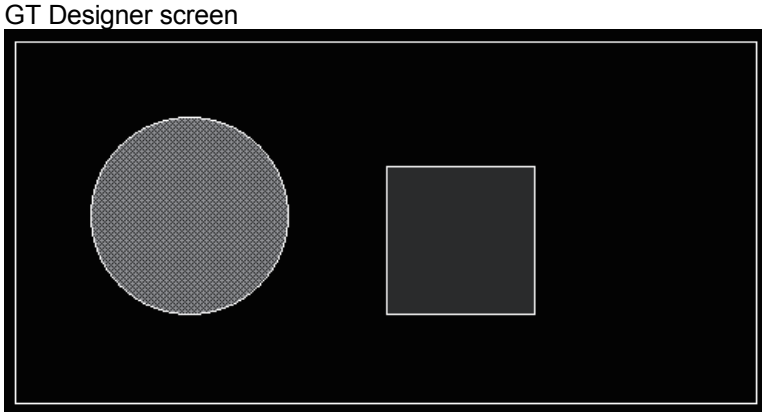
POINT

Though A95*GOT screen data can be used unchanged on the A956WGOT, note that the data in the 6 dots at the bottom of the A95*GOT screen are not displayed.

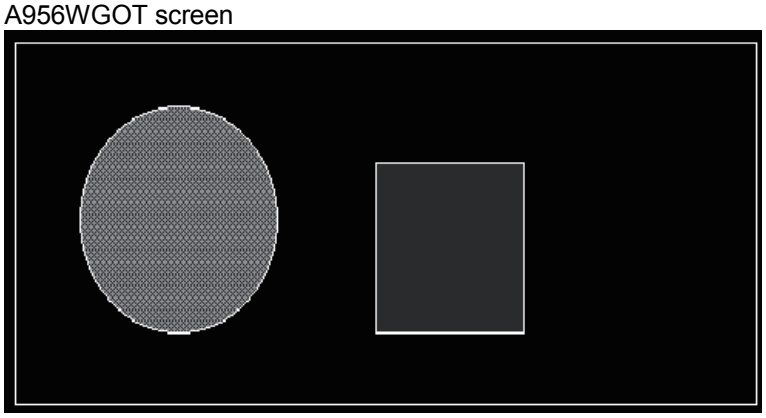
(2) Precautions for drawing method on wide display

1) Because of the difference between the vertical and horizontal dot intervals on a wide display, the actual screen display provided is 1.15 times greater vertically than the drawing screen of GT Designer.
You can confirm the actual screen display using the preview display function of GT Designer.

GT Designer screen



A956WGOT screen

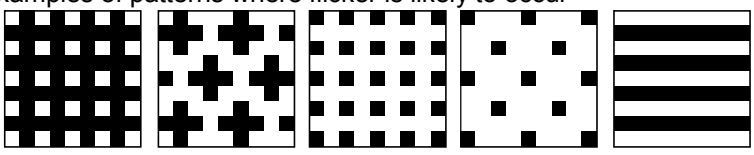


2) If you run the monitor A956WGOT, the screen may flicker depending on the type of object/shape fill pattern used when creating images.
This is due to the specifications of the LCD panel and not a malfunction.
Be sure to check the combination of type of pattern and color on the machine before using.

(a) Examples of patterns where flicker is likely to occur

As in the following pattern examples, a pattern of lines, points or the like whose colors change line-by-line (horizontal pattern) particularly tends to cause a screen to flicker.
(A basic figure or the like that uses a horizontal pattern may also flicker.)
Also a figure or the like that is clear in light and shade is likely to flicker.
(When "Background: black", "Foreground: white", and others are selected.)

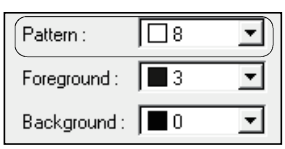
<Examples of patterns where flicker is likely to occur>



(b) How to prevent flicker

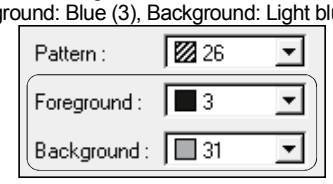
• Flicker is reduced by selecting a solid color pattern.

(Example1) Select a solid color pattern for "Pattern"
Pattern: A solid color pattern (8)



• When using a horizontal pattern or the like, flicker is reduced by selecting similar colors for foreground and background.

(Example2) Select similar colors for "Foreground" and "Background"
Foreground: Blue (3), Background: Light blue (31)



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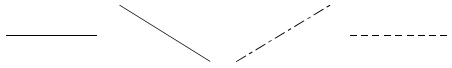
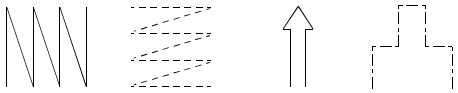
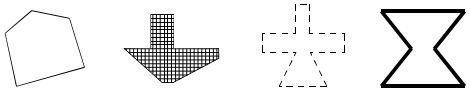
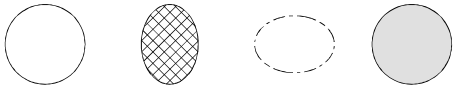
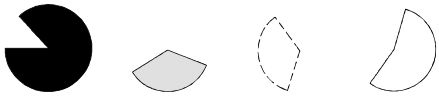
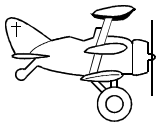
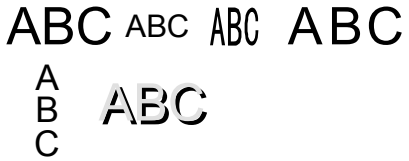
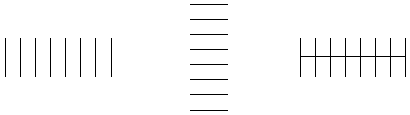
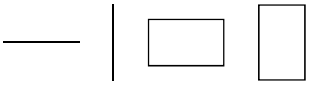
4.2 Drawing Figures and Number of Attributes

GOT-A900 series	○	GOT-F900 series	○

4.2.1 Types of drawing figures

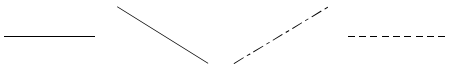
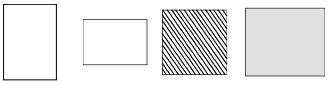
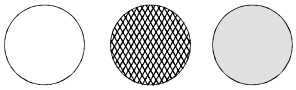
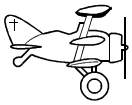
Figures and character types are as follows:

(1) When the GOT-A900 series is used

Figures	Example of drawing	Attributes for selection
Line		Line style, line width, line color
Line Freedom		
Rectangle		Line style, line width, line color, painting pattern, painting color, painting background
Polygon		
Circle (ellipse)		
Arc (ellipse arc)		Line style, line width, line color
Sector		Line style, line width, line color, painting pattern, painting color, painting background
Painting of enclosed area		Painting pattern, painting color, painting background
Figure data in bitmap / DXF format		–
Text		Style*, text color, solid color, size, vertical, direction, alignment, high quality font (high quality font only for multiple of 2, 4, 6 and 8 of length to width magnification)
Scale		Number of graduation, direction, centerline, line style, line width, line color
Report figure (line)		–
Report figure(text)	ABC	

*When "Raised" is selected for "Character decoration", the display provided on the GT Designer screen is the same as when "Shadow" is selected, but the correct display is provided on the GOT.
"Raised" is "Character decoration" as if "Boldface" ad "Shadow" are combined.
Uninfluenced by the character size, the shadow part of "Raised" is always 1 dot large.
The shadow part of "Shadow" changes in proportion to the character size.
(Example: The shadow is 2 dots large when the character size is 2x2.)

(2) When the GOT-F900 series is used

Figures	Example of drawing	Attributes for selection
Line		Line style, line color
Rectangle		Line style, painting pattern, painting color
Circle		
Figure data in bitmap / DXF format		———
Text	ABC ABC ABC ABC	Text color, size, alignment

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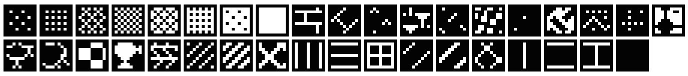
4.2.2 Attribute type for selection

Attribute types for drawing are as follows:

(1) When the GOT-A900 series is used

Attribute	Example of drawing	
Line style	Full line———, Broken line - - - - - - - - -, Dotted line ··················, Alternate long and short dash line - - - - - - - - - - -, Alternate long and two short dash line - - - - - - - - - - -	
Line width	1 dot ———, 2 dot ———, 3 dot ———, 4 dot ———, 5 dot ———, 7 dot ———	
Display color	256 colors	
	Display on GOT	Displayed in selected colors when the GOT used is compatible with 256 color display.
		Displayed in reduced 16 colors when the GOT used is compatible with 16 color display.
		Displayed in reduced 8 colors when the GOT used is compatible with 8 color display.
		All colors other than black are displayed in the same color (orange / white) when the GOT used has a monochrome display.
Painting pattern		
Painting color, painting background	256 colors	
	Display on GOT	Displayed in selected colors when the GOT used is compatible with 256 color display.
		Displayed in reduced 16 colors when the GOT used is compatible with 16 color display.
		Displayed in reduced 8 colors when the GOT used is compatible with 8 color display.
		All colors other than black are displayed in the same color (orange / white) when the GOT used has a monochrome display.

POINT

- Colors that can be displayed on each GOT

  When the GOT used can display 16 or less colors, the following colors can be Displayed.

GOT Display Colors	Displayable Colors
16-color display	255,0,3,224,227,28,31,252,109,182,2,160,162,20,22,180
8-color display	255,0,3,224,227,28,31,252
Monochrome display	All colors other than black are displayed as the same color (orange/white).

The GOT display can be confirmed on the preview screen of GT Designer.
For the preview screen, refer to the help function of GT Designer.

(2) When the GOT-F900 series is used

Attribute	Example of drawing	
Line style	Full line ————, Broken line - - - - - - - - - -, Dotted line ·····, Alternate long and short dash line - - - - - - - - - - - -, Alternate long and two short dash line - - - - - - - - - - - -	
Line width	1 dot ————	
Display color	256 colors	
	Display on GOT	F940WGOT-TWD-E (Color liquid crystal) Displayed in reduced 256 colors.
		F940GOT-SWD-E(Color liquid crystal) Displayed in reduced 8 colors.
		F940GOT-LWD-E(Monochrome liquid crystal) All colors other than black are displayed in the same color (white).
		F930GOT-BWD-E, F920GOT-BB5-K-E (Blue liquid crystal) All colors other than black are displayed in the same color (white), and black is displayed in blue.
Painting pattern		
Painting color	256 colors	
	Display on GOT	F940WGOT-TWD-E (Color liquid crystal) Displayed in reduced 256 colors.
		F940GOT-SWD-E(Color liquid crystal) Displayed in reduced 8 colors.
		F940GOT-LWD-E(Monochrome liquid crystal) All colors other than black are displayed in the same color (white).
		F930GOT-BWD-E, F920GOT-BB5-K-E (Blue liquid crystal) All colors other than black are displayed in the same color (white), and black is displayed in blue.

4.2.3 Figures in bitmap file format

(1) When the GOT-A900 series is used

Figures in bitmap file format displayed on the GOT-A900 series are 3 types; 256 colors, 16 colors and black-and-white.
There are some colors that cannot be displayed on some GOT types and they are displayed in reduced colors.

(Ex.)

- 256 color bitmap is displayed in reduced colors on the 16 color/black-and-white GOT-A900 series.
- 16 color bitmap is displayed in reduced colors on the black-and-white GOT-A900 series.

(2) When the GOT-F900 series is used

Figures in bitmap file format displayed on the GOT-F900 series are 3 types; 256 colors, 16 colors and black-and-white.
There are some colors that cannot be displayed on some GOT types and they are displayed in reduced colors.

(Ex.)

- 256 color bitmap is displayed in reduced colors on the 8 color/black-and-white/ white-and-blue GOT-F900 series.
- 16 color bitmap is displayed in reduced colors on the 8 color/black-and-white/ white-and-blue GOT-F900 series.

4.2.4 Character size by magnification

(1) When the GOT-A900 series is used

Length × Width (dot)

Length magnification / Width magnification	× 0.5	× 1	× 2	× 3	× 4	× 5	× 6	× 7	× 8
× 0.5	8 × 8	8 × 16	8 × 32	8 × 48	8 × 64	8 × 80	8 × 96	8 × 112	8 × 128
× 1	16 × 8	16 × 16	16 × 32	16 × 48	16 × 64	16 × 80	16 × 96	16 × 112	16 × 128
× 2	32 × 8	32 × 16	32 × 32	32 × 48	32 × 64	32 × 80	32 × 96	32 × 112	32 × 128
× 3	48 × 8	48 × 16	48 × 32	48 × 48	48 × 64	48 × 80	48 × 96	48 × 112	48 × 128
× 4	64 × 8	64 × 16	64 × 32	64 × 48	64 × 64	64 × 80	64 × 96	64 × 112	64 × 128
× 5	80 × 8	80 × 16	80 × 32	80 × 48	80 × 64	80 × 80	80 × 96	80 × 112	80 × 128
× 6	96 × 8	96 × 16	96 × 32	96 × 48	96 × 64	96 × 80	96 × 96	96 × 112	96 × 128
× 7	112 × 8	112 × 16	112 × 32	112 × 48	112 × 64	112 × 80	112 × 96	112 × 112	112 × 128
× 8	128 × 8	128 × 16	128 × 32	128 × 48	128 × 64	128 × 80	128 × 96	128 × 112	128 × 128

REMARKS

- Set the character magnification for both length and width to the multiple of 2, 4, 6 and 8 if high quality font is used.
- If a part with high quality font is displayed with the part display/part movement display function on the screen which is not using high quality font, the part is not displayed in high quality font.
  When any of characters on the screen are changed to high quality font, the part is displayed in high quality font.

(2) When the GOT-F900 series is used

Length × Width (dot)

Length magnification / Width magnification	× 1	× 2	× 3	× 4
× 0.5	8 × 16	8 × 32	8 × 48	8 × 64
× 1	16 × 16	16 × 32	16 × 48	16 × 64
× 2	32 × 16	32 × 32	32 × 48	32 × 64
× 3	48 × 16	48 × 32	48 × 48	48 × 64
× 4	64 × 16	64 × 32	64 × 48	64 × 64

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4.2.5 Data capacity of each figure

GOT-A900 series	○	GOT-F900 series	○

Memory capacity of figures and characters for drawing is as follows.
The following memory capacity applies to figures regardless of attribute types and sizes.

(1) When the GOT-A900 series is used

Figure	Memory capacity (byte)
Line	20
Line Freedom	16 + 4 × n n is the number of vertexes.
Rectangle	24
Polygon	16 + 4 × n n is the number of vertexes. (Start and end points are counted as one of vertexes.)
Circle (ellipse)	24
Arc (ellipse arc)	32
Sector	36
Painting of enclosed area	16
Figure data in bitmap file format	20 + data capacity of bitmap file
Text	28 + 2 (n + 1) n is the number of characters (memory capacity in the left regardless of 2 byte/1 byte character)
High quality font	128 × n n is the number of characters.
Scale	24
Report figure (line)	64 for rules of 32 × 32 dots
Report figure (text)	16 + 4 × (number of characters ÷ 2)

(2) When the GOT-F900 series is used

Figure	Memory capacity (byte)
Line	20
Rectangle	24
Circle	24
Figure data in bitmap file format	20 + data capacity of bitmap file
Text	34 + n n is the number of characters

4.3 Types and Specifications of Available Object Functions

4.3.1 Types of and restrictions on object functions for setting

GOT-A900 series	○	GOT-F900 series	○

This section explains the object function types.
Restrictions on the object functions are marked "∗".
Refer to Chapter5 for details of the object functions.

○: Allowed for setting, ×: Not allowed for setting

Function	GOT-A900 series		GOT-F900 series	Details	Refer To
	A9∗ ∗GOT	GT SoftGOT			
Numerical display	○	○	○	Function that displays the data stored in the word device in a numerical value. The display color and attributes can be changed according to the monitor device value or specified device status (ON/OFF, device value).	Section 5.1.1
Data list display	○	○	×	Function that displays the status of multiple word devices in numerical values on the table. Designation of one row out of 5 rows maximum as a sort key allows sorting of display according to the set priority.	Section 5.1.2
ASCII display	○	○	○	Function that displays character strings, acknowledging data stored continuously in the word device as character code (ASCII code).	Section 5.1.3
Clock display	○	○	○	Function that displays the clock data of the PLC CPU. (When GT SoftGOT is used, the clock data of the personal computer appears. When the GOT-F900 series is used, the clock data of the GOT appears.) This can be displayed in the form of time/date.	Section 5.1.4
Comment display	○	○	○	Function that displays comments in relation to the bit device ON/OFF and the designated range of the word device. Comment can be displayed in multiple lines for the display area.	Section 5.2.1
Alarm history display	∗7 ○	○	○	Function that displays the time and the comment of ON status and being in the designated range in relation to the comment of the ON status of the designated bit device and the designated range of the word device.	Section 5.2.2
Alarm list display(system alarm)	○	○	×	Function that displays a warning for error on PLC CPU, data link/network and GOT.	Section 5.2.3
Alarm list display(user alarm)	○	○	○	Function that displays comment of the ON bit device in the order of priority in relation to the comments of multiple bit devices.	Section 5.2.3
Part display	○	○	○	Function that displays the specified part/screen or the part/screen associated with the ON/OFF of the bit device or the value of the word device. (The function to display a part on the base screen is available for the GOT-A900 only.) It can also displays the figure in BMP/DXF file format as a part.	Section 5.3.1
Part movement display	○	○	×	Function that displays the movement/locus of the part figure associated with the bit device ON/OFF, word device value or specified device status (ON/OFF, device value) in the specified movement method.	Section 5.3.2
Lamp display	○	○	○	Function that changes the lamp illumination color according to the monitor device value or specified device status (ON/OFF, device value).	Section 5.3.3
Panel meter display	○	○	○	Function that displays the value of the word device on the meter with the ratio for the upper/lower limits. When the value of the monitoring devices reaches a certain value, the color of the meter panel can be changed.	Section 5.3.4
Trend graph display	○	○	∗5 ○	Function that collects the data stored in the word device at the designated timing and displays it on the trend graph. When the graph is displayed to the screen range, the screen scrolls for further display.	Section 5.4.1

Function	GOT-A900 series		GOT-F900 series	Details	Refer To
	A9＊＊GOT	GT SoftGOT			
Line graph display	○	○	＊5 ○	Function that collects the data of multiple word devices in a batch and displays the line graph.	Section 5.4.2
Bar graph display	○	○	○	Function that displays the data stored in multiple word devices with a bar graph.	Section 5.4.3
Statistical graph display	○	○	＊5 ○	Function that collects the data of multiple word devices and displays the percentage of each word device data in graph.	Section 5.4.4
Scatter chart display	○	○	×	Function that gathers the data stored in the word devices associated with the X and Y axes and displays them as a scatter chart.	Section 5.4.5
Level display	○	○	×	Function that displays the word device value in level with the ratio for upper/lower limits.	Section 5.4.6
Touch key	○	○	＊5 ○	Function that performs bit device ON/OFF, word device value changing, screen switching, etc. according to the touch keys touched.	Section 5.5
Numerical input	○	○	○	Function that inputs the desired value into the designated word device.	Section 5.6.1
ASCII input	○	○	○	Function that inputs the desired ASCII code into the designated word device.	Section 5.6.2
Hardcopy	＊1, ＊5, ＊10 ○	○	＊3, ＊5 ○	The hardcopy function enables you to capture and print out a GOT monitor screen, and save to a PC card using BMP/JPEG-type data file by setting a bit device to ON/OFF or by touching the touch key set in the Touch key (Extended) settings	Section 5.8.1
Barcode	＊1 ○	×	＊2, ＊5 ○	Function that writes the data from the bar code reader into the PLC CPU.	Section 5.8.8
System information	○	○	○	Function that checks the GOT operation status with the PLC CPU.	Section 5.8.2
Observe Status	○	○	○	Function that writes data to the PLC CPU when the specified condition is enabled (ON/OFF of specified bit device, word device value range designation).	Section 5.8.3
Floating Alarm display	○	○	○	Function that displays the comments of the ON bit device in the order of occurrence from right to left on the base screen in relation to the comments of multiple bit devices.	Section 5.8.4
Recipe	＊7 ○	○	○	Function that sets the device as a monitoring device, writes the designated data into the device, saves the designated device range into the memory card, and writes it into the PLC CPU.	Section 5.8.5
Sound	＊4, ＊7 ○	○	×	Function that reproduces the voice file in WAV format and provides a touch sound on the touch key or sounds in status monitoring function.	Section 5.8.6
Test	＊2 ○	×	×	Function that displays the test window during display of the monitoring screen to change the device value.	Section 5.8.7
Overlap screen	○	○	○	Function that retrieves other screen on the current screen for overlap display. The retrieved screen is displayed in green frames.	Section 5.9.1
Operation panel	＊7 ○	×	×	Function that allows operation from outside the GOT using an operation panel connected.	Section 5.8.9
Report	＊1, ＊7, ＊8 ○	○	×	Function that gathers and prints numerical data stored in the word devices or the buffer memory of a special function module, or to print numerical data and comments associated with bit device ON/OFF.	Section 5.7
Time action	＊9 ○	○	＊3, ＊5 ○	Function that performs operation, such as device write, at the specified time of the day of the week.	Section 5.8.10
Sampling	×	×	○	Function that collects data in the specified cycle or under the bit condition and displays them in a graph or the like.	Section 5.8.11
Script	○	○	×	Function that can control the GOT display with the GOT's original programs (scripts).	Section 5.8.12 Chapter 7

＊1: Unusable on the A950 handy GOT.

＊2: Unusable on the F940 handy GOT.

＊3: Unusable on the F930GOT.

＊4: Not used on the A95＊GOT/A956WGOT.

∗5: Unusable on the F920GOT.

∗6: When using any of the functions, you always need to install the corresponding extended OS in the GOT.

Function	Extended function OS
Report function	Extended function OS (report)
Hard copy function	Extended function OS (ESC printer/PCL printer)
Recipe function	Extended function OS (recipe)
Sound function	Extended function OS (sound)
Bar code function	Extended function OS (bar code)
Operation panel function	Extended function OS (external key input)

∗7: When using any of the following object functions, you need to fit necessary equipment for the corresponding function.

<table>
<tr><th colspan="2">Function name</th><th>A985GOT/A97∗GOT/
A960GOT</th><th>A956WGOT</th><th>A95∗GOT</th></tr>
<tr><td rowspan="2">Alarm history display function/ hard copy function</td><td>For PC card save</td><td>Unnecessary</td><td>When using SRAM card:
Memory card interface unit
When using compact flash PC card:
Option unit unnecessary</td><td>Memory card interface unit
(SRAM card only)</td></tr>
<tr><td>For history printing/ printout</td><td>Unnecessary</td><td colspan="2">Printer interface unit</td></tr>
<tr><td colspan="2" rowspan="2">Report function</td><td rowspan="2">Unnecessary</td><td rowspan="2">Unnecessary</td><td>Use the applicable model
(A95∗GOT-∗BD-M3/
A950 handy GOT).</td></tr>
<tr><td>Report printing</td><td>Unnecessary</td><td colspan="2">Printer interface unit</td></tr>
<tr><td colspan="2" rowspan="2">Recipe function</td><td rowspan="2">Memory board</td><td rowspan="2">Memory board</td><td>Use the applicable model
(A95∗GOT-∗BD-M3/
A950 handy GOT).</td></tr>
<tr><td>For PC card save</td><td>Unnecessary</td><td colspan="2">Printer interface unit</td></tr>
<tr><td colspan="2">Sound function</td><td>Memory board and external speaker</td><td>Unusable</td><td>Unusable</td></tr>
<tr><td colspan="2">Operation panel</td><td colspan="3">External I/O unit</td></tr>
</table>

Among the above units, either only one memory card interface unit or one printer interface unit may be fitted to the A95∗GOT/ A956WGOT.
When using the alarm history display function, therefore, note that PC card save and history printing cannot be functioned simultaneously.
(Enabled when the compact flash PC card is used with the A956WGOT.)

∗8: Logging report cannot be used with the A95*GOT/A956WGOT.
(Enabled when the compact flash PC card is used with the A956WGOT.)

∗9: When the target PLC CPU has no clock data, the time action function is unusable.
(Since GT SoftGOT uses the clock data of the personal computer, the time action function can be used if the target PLC CPU has no clock data.)

∗10: A95*GOT cannot do 256-color printing.

∗11: Can be used for setting the function switches of the F920GOT (with keypad), F930GOT (with keypad) and ET-940.

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4.3.2 Specifications of the object functions that may be set

GOT-A900 series	○	GOT-F900 series	○

The following indicate the main specifications of the functions.
In the following tables, the maximum setting points and used memory spaces assume that the setting items are all default values.
When data operation, display method and/or other settings are made to increase the following memory space, the number of points that can be set may decrease.

(1) When the GOT-A900 series is used

Function	Specifications																	
				Display/operation triggers							Monitor/write devices				Option functions			
	Max. setting points per screen	Used memory space (bytes)	Display attributes	Ordinary	Sampling	Range	Rise/Fall	During ON/OFF	Bit Trigger	ON/OFF Sampling	Bit device	Word device	Offset designation	Station number changing	Security	Expression	Others
Numerical Display	512	24	Shape, Frame, Plate, Numeral, Blink, Reverse	○	○	○	○	○	○	×	×	○	○	○	○	○	Display format/number of display digits Decimal : 1 to 13 Hexadecimal : 1 to 8 Octal : 1 to 6 Binary : 1 to 32 Real : 1 to 32
Data list display	1 (not allowed for window screen)	32 + 12 × (row + 1) 6 × devices	Shape, Frame, Plate, Title, Color, Rule, Reverse	○	○	○	○	○	○	×	×	○	○	○	○	×	Display format/number of display digits Decimal : 1 to 13 Hexadecimal : 1 to 8 Octal : 1 to 6 Binary : 1 to 32 Real : 1 to 32
ASCII display	256	8 + Text	Shape, Frame, Plate, Color, Blink, Reverse	○	○	○	○	○	○	×	×	○	○	○	○	×	Digits:1 to 80
Clock display	2	8	Shape, Frame, Plate, Color	○	×	×	×	×	×	×	×	×	×	×	○	×	Data format yy/mm/dd dd/mm/yy mm/dd/yy
Comment	—	16 + 4 × registered comments + (2 × total characters) (values in ( ) are converted to the multiple number of 4.)	Style, Color, Solid, Reverse, Blink, High quality font	×	×	×	×	×	×	×	×	×	×	×	×	×	• Max. number of comments registered: 32767 • Max. number of characters set to 1 comment: 512 characters (independently of character size)
Comment display	256	24	Shape, Frame, Size, Blink	○	○	○	○	○	○	×	○	○	○	○	○	○	Max. number of characters set to 1 comment: 512 characters (independently of character size)
Alarm history display	1 (not allowed for window screen)	80 + (2 × title characters + 4) × display items + 16 × devices	Shape, Frame, Plate, Title, Rule	×	×	×	×	×	×	×	○	○	×	×	○	×	Max. number of monitor points Bit Device: 3072 Word Device (16 Bit): 1024 (32 Bit): 512

Function	Specifications																	
				Display/operation triggers							Monitor/write devices				Option functions			
	Max. setting points per screen	Used memory space (bytes)	Display attributes	Ordinary	Sampling	Range	Rise/Fall	During ON/OFF	Bit Trigger	ON/OFF Sampling	Bit device	Word device	Offset designation	Station number changing	Security	Expression	Others
Alarm list display (System alarm)	1	184	Shape, Frame, Plate, Size	○	×	×	×	×	×	×	×	×	×	×	○	×	Max. number of display characters: 60 characters
Alarm list display (User alarm)	24 (Memory saving 16) ＊1	152 + devices × 24	Shape, Frame, Plate, Size	○	○	○	○	○	○	×	○	×	×	○ ＊3	○	×	Max. number of monitor points Consecutive bit device : 8192 points Random bit device : 512 points
Part Display	256	44	Display mode (Overwrite/XOR), Positioning (Top-left/Center), Color, Blink	○	○	○	○	○	○	×	○	○	○	○	○	○	Type Part/Mark/Base Screen/Window screen
Part Movement display	256	60	Movement Mode (Position/Line/Point), Display mode (Locus/Movement), Positioning (Top-left/Center), Color, Blink	○	○	○	○	○	○	×	○	○	○	○	○	○	Type Part/Mark
Lamp display	256	24	Shape (Basic figure/Free figure), High quality font, Frame, Lamp, Background, Pattern, Blink, Text, Style, Color, Solid, V × H	○	×	×	×	×	×	×	○	○	○	○	○	○	—
Panel meter display	256	40	Shape, Frame, Plate, Needle, Meter panel, Text, Size, Color, High quality font, Scale display, Scale points	○	×	×	×	×	×	×	×	○	○	○	○	○	Meter type 1/4 Circle (Top/Bottom/Left/Right/Right top/Left top/Left Bottom) 1/2 Circle (Top/Bottom/Left/Right) 3/4 Circle, Circle
Trend graph display	24 (Memory saving 16)	76 + devices × 2	Shape, Frame, Plate, Scale display, Scale points, Graph, Style, Width	×	○	×	○	×	×	○	×	○	○	○ ＊3	○	○	• Max. number of graphs : 8 • Max. number of points : 100
Line graph display	32 (Locus Mode: 1 per 1 Project)	76 + devices × 2	Shape, Frame, Plate, Scale display, Scale points, Graph, Style, Width	○	○	○	○	○	○	×	×	○	○	○ ＊4	○	○	• Max. number of graphs : 8 • Max. number of points : 500
Bar graph display	256	220	Shape, Frame, Plate, Graph, Pattern, Background	○	○	○	○	○	○	×	×	○	○	○	○	○	Max. number of graphs: 8

Function	Specifications																	
				Display/operation triggers							Monitor/write devices				Option functions			
	Max. setting points per screen	Used memory space (bytes)	Display attributes	Ordinary	Sampling	Range	Rise/Fall	During ON/OFF	Bit Trigger	ON/OFF Sampling	Bit device	Word device	Offset designation	Station number changing	Security	Expression	Others
Statistical graph display	32	444	Shape, Frame, Plate, No. of Partitions, Direciton, Scale display, Scale points, Graph, Pattern, Background	○	○	○	○	○	○	×	×	○	○	○	○	○	Graph: Rectangle graph/Circle graph
Scatter chart	24 (Memory saving 16) ＊1	128 + 4 × number of stored memories × (number of points + 1)	Shape, Frame, Graph frame, Plate, Display mode, Graph display form (type/size/color)	×	○	×	○	×	×	○	×	○	○ ＊3	○ ＊3	○	○	• Graph type: Sample/batch display • Number of points that may be saved into memory: 2000 points (For batch display, the above number of points is the total of the number of batch-displayed points the number of collection times) • Max. cumulative count (point device data format): 9999 (16 bit, BCD value) 65535 (other than above)
Level display	256	40	Boundary, Level, Pattern, Backgroud, Graph, Pattern	○	○	○	○	○	○	×	×	○	○	○	○	○	—
Touch key	256 (10) ＊1 ＊2	40	Shape, Frame, Switch, Pattern, Backgroud Style, Color, Solid, V ×H, Text, High quality font	○	×	○	×	○	○	×	○	○	○	○ ＊5	○	×	• Display trigger Key/Bit/Word • Action Key code/Bit/Word/ Extended/Base/Window/ Station No./Buzzer
Numerical Input	256	32	Shape, Frame, Plate, Numeral, Blink, Reverse	○	×	○	×	○	○	×	×	○	○	○	○	○	Format type/Format digits Decimal : 1 to 13 Hexadecimal : 1 to 8 Octal : 1 to 6 Binary : 1 to 32 Real : 1 to 32
ASCII input	256	8 + characters	Shape, Frame, Plate, Color, Blink, Reverse	○	×	○	×	○	○	×	×	○	○	○	○	×	Digits 1 to 80
Hardcopy	1	44	—	×	×	×	×	×	×	×	○	×	×	×	×	×	When stored onto PC card: Max. 9999 files
Barcode	32	—	—	×	×	×	×	×	×	×	×	○	×	○	×	×	—
System information	1	—	—	×	×	×	×	×	×	×	×	○	×	×	×	×	—

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Function	Specifications																			
	Max. setting points per screen	Used memory space (bytes)		Display attributes	Display/operation triggers							Monitor/write devices				Option functions		Others
					Ordinary	Sampling	Range	Rise/Fall	During ON/OFF	Bit Trigger	ON/OFF Sampling	Bit device	Word device	Offset designation	Station number changing	Security	Expression	
Observe Status	512/ Screen, 512/ Project in common	64 + 36 × (set number of conditions) + 16 × (number of indirect device and bit ALT device points in all conditions) + 16 × (total of write device points in all conditions) + 20 × (number of conditions with word ranges)		—	×	×	○	×	○	×	×	○	○	×	○	×	×	Max. number of points for write operation Bit momentary, bit RST, bit SET, bit ALT: 40 Data SET (16 bits): 20 Data SET (32 bits): 10
Recipe	—	When stored in the internal memory	8 + 4 × sum of devices in each recipe file + 108 × number of recipe file	—	×	×	×	○	×	×	×	○	○	×	○	×	×	• Max. recipe operation: 256 points • Max. number of points for write operation 16 bits: 8192 32 bits: 4096
		When stored in the PC card	149 × number of recipe files + 9 × sum of number of 16 bit devices in each recipe file + 14 × sum of 32 bit devices in each recipe file															
Sound	100	128		—	×	×	×	×	×	×	×	×	×	×	×	×	×	Max. number of sound files: 100
Test	—	—		—	×	×	×	×	×	×	×	×	×	×	×	×	×	—
Floating alarm display	1 (1Project)	80		Character size	×	×	×	×	○ *4	×	×	○	×	×	○	×	×	Max. number of monitor device points Consecutive bit devices: 512 points Random bit devices: 255 points
Overlap screen	2047	80 + Depending on object		—	×	×	×	×	×	×	×	×	×	×	○	○	×	—
Operation panel	1	128		—	○	×	○	×	○	×	×	○	○	×	○	○	×	—
Report Numeri-cal	256	44		Print format, number of print digits, number of fraction digits	×	○	×	○	×	×	×	×	○	×	×	×	○	• Report type Real-time continuous/logging page renewal • Report screen: Up to 8 screens may be created per project.
Report Comment	256	48		number of print digits	×	○	×	○	×	×	×	○	○	×	×	×	○	
Time action	32	1592		—	×	×	×	×	×	×	×	○	○	×	○	×	×	Time action operation Max. setting count: 32

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Function	Specifications																	
				Display/operation triggers							Monitor/write devices				Option functions			
	Max. setting points per screen	Used memory space (bytes)	Display attributes	Ordinary	Sampling	Range	Rise/Fall	During ON/OFF	Bit Trigger	ON/OFF Sampling	Bit device	Word device	Offset designation	Station number changing	Security	Expression	Others
Script	256	(36 + (40 × number of project scripts set) + (36 × number of displayed base screen calls set) + (40 × number of displayed base screen scripts set) + (36 × number of displayed window screen 1 calls set) + (40 × number of displayed window screen 1 scripts set) + (36 × number of displayed window screen 2 calls set) + (40 × number of displayed window screen 2 scripts set) + (36 × number of displayed superimpose screen calls set) + (40 × number of displayed superimpose screen scripts set) ✻5	—	○	○	×	○	○	×	○	○	○	×	○	×	×	—
Gateway setting																		
Server setting	32768	20 + 20 × number of assigned devices	—	×	×	×	×	×	×	×	○	○	×	×	×	×	—
Client setting	128	16 + 20 × number of set GOTs to be monitored	—	×	×	×	×	×	×	×	×	×	×	×	×	×	
Mail send setting	96	20 + 4 × (number of destinations + 2) + 2 × (total number of destination, subject and From characters)	—	×	×	×	×	×	×	×	×	×	×	×	×	×	
FTP server setting	—	12 + 2 × (total number of login name and password characters)	—	×	×	×	×	×	×	×	×	×	×	×	×	×	

✻1 The number within parentheses indicates the maximum number of set points at the maximum setting of the setting item.
✻2 For the touch keys to which ON/OFF delays were set, the maximum number of set points is 100 points.
✻3 Unusable only when the memory storage function is used.
✻4 Operates only during ON.
✻5 The capacity of the script function set to each window is 0 bytes if the window screen is not displayed.

(a) Memory capacity for setting of high quality font

The memory capacity of high quality font is 128 bytes for 1 character regardless of the character size.

(b) Maximum setting count when the cycle trigger is set for the display

The maximum setting count in one screen for the cycle trigger is 100 points.

(c) Maximum setting count of objects

The maximum setting count of objects in one screen is 512 points.
If 513 or more objects are set in one screen, note that 513th object becomes invalid.

(d) Data capacity of object stored on PC card/Hard disk

1) Capacities of data stored on the PC card (When using the A985/97∗/960 / 95∗/956WGOT)

Depending on the object used, it has a function which can store data on the PC card.

The following table lists the capacity of data stored onto the PC card on an object basis.

<table>
<tr><th>Object Name</th><th>Data Capacity (Bytes)</th></tr>
<tr><td>Report function</td><td>(Number of devices × 8 + 36) + ((number of devices × 8 + 8) × collection count)</td></tr>
<tr><td>Alarm history function</td><td>When 3072 points of alarm history displays are saved
In Cumulative mode (Store CSV format) : Approx,.97k bytes (Approx,.400k bytes)
In History mode (Store CSV format) : Approx,.72k bytes (Approx,.360k bytes)</td></tr>
<tr><td>Hard copy function</td><td>Data capacity per screen (see below) × number of screens stored
<table>
<tr><th colspan="3">Data Capacity per Screen (Kbytes)</th></tr>
<tr><th>Model</th><th>At BMP file</th><th>At JPEG file</th></tr>
<tr><td>A985GOT-V</td><td>470.0 (video window: 1406.3)</td><td>133.4</td></tr>
<tr><td>A985GOT</td><td>470.0</td><td>113.9</td></tr>
<tr><td>A975GOT</td><td>301.0</td><td>86.6</td></tr>
<tr><td>A970GOT-TB∗</td><td>150.0</td><td>86.6</td></tr>
<tr><td>A970GOT-SB∗</td><td>150.0</td><td>84.5</td></tr>
<tr><td>A970GOT-LB∗</td><td>37.6</td><td>–</td></tr>
<tr><td>A960GOT</td><td>37.6</td><td>–</td></tr>
<tr><td>A956WGOT</td><td>110.0</td><td>33.2</td></tr>
<tr><td>A95∗GOT-TBD</td><td>76.1</td><td>26.8</td></tr>
<tr><td>A95∗GOT-SBD</td><td>37.6</td><td>27.6</td></tr>
<tr><td>A95∗GOT-LBD</td><td>9.4</td><td>–</td></tr>
</table></td></tr>
<tr><td>Recipe function</td><td>117 × number of recipe files + 9 × sum of 16-bit devices in each recipe file + 14 × sum of 32-bit devices in each recipe file</td></tr>
</table>

2) Capacities of data stored on the hard disk (When using the GT SoftGOT)

Some objects have the function to store data on the hard disk of the personal computer.

The following table indicates the capacities of data stored on the personal computer hard disk object-by-object.

<table>
<tr><th>Object Name</th><th>Data Capacity (Bytes)</th></tr>
<tr><td>Report function</td><td>(Number of collection times + (number of 1 page-printable data collection times - 1))/ number of 1 page-printable data collection times) × ((number of header lines + 1) × data size on 1 line) + number of collection times × (repeated lines × data size on 1 line)</td></tr>
<tr><td>Alarm history function</td><td>Data size per line (see below) × (number of printing times (number of occurrence, recovery, check times) + 1)
<table>
<tr><th>Model</th><th>Data Capacity (Bytes)</th></tr>
<tr><td>History mode</td><td>80</td></tr>
<tr><td>Cumulative mode (status only)</td><td>79</td></tr>
<tr><td>Cumulative mode
(cumulative time or occurrence time, status)</td><td>88</td></tr>
<tr><td>Cumulative mode
(cumulative time, occurrence time, status)</td><td>97</td></tr>
</table></td></tr>
<tr><td>Hard copy function</td><td>Data capacity per screen (see below) × number of screens stored
<table>
<tr><th colspan="2">Data Capacity per Screen</th></tr>
<tr><th>Model (dot)</th><th>Data Capacity (Kbytes)</th></tr>
<tr><td>SoftGOT (1280×1024)</td><td>1281.0</td></tr>
<tr><td>SoftGOT (1024×768)</td><td>767.0</td></tr>
<tr><td>SoftGOT (800×600)</td><td>469.8</td></tr>
<tr><td>SoftGOT (640×480)</td><td>301.0</td></tr>
</table></td></tr>
<tr><td>Recipe function</td><td>117 × number of recipe files + 9 × sum of 16-bit device points of all recipe files + 14 × sum of 32-bit device points of all recipe files</td></tr>
</table>

(2) When the GOT-F900 series is used

Function	Specifications																	
	Max. setting points per screen	Used memory space (bytes)	Display attributes	Display/operation triggers							Monitor/write devices				Option functions		Others
				Ordinary	Sampling	Range	Rise/Fall	During ON/OFF	Bit Trigger	ON/OFF Sampling	Bit device	Word device	Offset designation	Station number changing	Security	Expression	
Numerical Display	50	32	Shape, Frame, Plate, Numeral	×	×	×	×	×	×	×	○	○	×	×	×	○	Display format/number of display digits Decimal : 1 to 32 Hexadecimal : 1 to 32 Octal : 1 to 32 Binary : 1 to 32 Real : 1 to 32
ASCII display	10	32	Shape, Frame, Plate, Color	×	×	×	×	×	×	×	×	○	×	×	×	×	number of display digits: 1 to 40
Clock display	10	28	Shape, Frame, Plate, Color	×	×	×	×	×	×	×	×	×	×	×	×	×	Data format yy/mm/dd, dd/mm/yy, mm/dd/yy, Type1, Type2
Comment display	50	Word: 36 Bit: 44	Shape, Frame, Size	×	×	×	×	×	×	×	○	○	○	×	×	×	Max. number of characters set to 1 comment: 512 characters (independently of character size)
Alarm history display	1	32	Shape, Frame, Plate, Title	×	×	×	×	×	×	×	○	×	×	×	×	×	Max. number of monitor points Bit devices: 256 points
Alarm list display (User alarm)	1	32	Shape, Frame, Plate, Size	×	×	×	×	×	×	×	○	×	×	×	×	×	Max. number of monitor points Consecutive bit devices: 255 points
Part display	50	Word: 32 Bit: 36	Display mode (Replay), Positioning (Top-left/Center), Color	×	×	×	×	×	×	×	○	○	×	×	×	○	Type Part/Mark
Lamp display	50	32	Frame, Lamp, Text, Color, V × H	×	×	×	×	×	×	×	○	×	×	×	×	×	—
Panel meter display	50	40	Shape, Frame, Plate, Needle, Meter panel, Scale display	×	×	×	×	×	×	×	×	○	×	×	×	×	Meter type 1/4 Circle (Top/Bottom/Left/Right/Right top/Left top/Left Bottom) 1/2 Circle (Top/Bottom/Left/Right) 3/4 Circle, Circle
Trend graph display	1	40 + 2 × Number of graph lines	Shape, Frame, Plate, Graph, Style, Scale display	×	○	×	×	×	×	×	×	○	×	×	×	×	• Max. number of graphs : 4 • Max. number of points : 50
Line graph display	1	36 + 2 × Number of graph lines	Shape, Frame, Plate, Graph, Style, Scale display	○	×	×	×	×	×	×	×	○	×	×	×	×	• Max. number of graphs : 4 • Max. number of points : 50
Bar graph display	50	44	Shape, Frame, Plate, Graph, Scale display	○	×	×	×	×	×	×	×	○	×	×	×	×	Max. number of graphs: 1

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Function	Specifications																
				Display/operation triggers							Monitor/write devices				Option functions		
	Max. setting points per screen	Used memory space (bytes)	Display attributes	Ordinary	Sampling	Range	Rise/Fall	During ON/OFF	Bit Trigger	ON/OFF Sampling	Bit device	Word device	Offset designation	Station number changing	Security	Expression	Others
Statistical graph display	1	28 + devices	Shape, Frame, Plate, No. of Partitions, Direciton, Graph, Scale display	×	×	×	×	×	×	×	×	○	×	×	×	×	Graph: Rectangle graph/Circle graph
Touch key	50	28	Shape, Frame, Switch, Color, V × H, Text	○	×	×	×	○	×	×	○	○	×	×	×	×	• Display trigger Key/Bit • Action Key code/Bit/Word/Base
Numerical Input	50	48	Shape, Frame, Plate, Numeral	×	×	×	×	×	×	×	○	○	×	×	×	○	Display format/number of display digits Decimal : 1 to 32 Hexadecimal : 1 to 32 Octal : 1 to 32 Binary : 1 to 32 Real : 1 to 32
ASCII input	10	32	Shape, Frame, Plate, Color	×	×	×	×	×	×	×	×	○	×	×	×	×	number of display digits 1 to 20
Hardcopy	1	24	—	×	×	×	×	×	×	×	×	○	×	×	×	×	—
Observe Status	40/ Screen, 40/ Project in common	8 + 28 × setting points	—	×	×	×	×	○	×	×	○	○	×	×	×	×	Max. number of points for write operation Bit momentary, bit RST, bit SET, bit ALT: 40 Data SET (16 bits): 20 Data SET (32 bits): 10
Recipe	—	—	—	×	×	×	○	×	×	×	○	○	×	×	×	×	• Max. recipe operation: 256 points • Max. number of points for write operation 16 bits: 4000
Floating alarm display	1	80	Character size	×	×	×	×	○	×	×	○	×	×	×	×	×	Max. number of monitor device points Consecutive bit devices: 256 points
Overlap Screen	—	Depending on object	—	×	×	×	×	×	×	×	×	×	×	×	×	×	—
Operation panel	—	—	—	○	×	×	×	○	×	×	○	○	×	×	×	×	—
Time action	—	—	—	×	×	×	×	×	×	×	○	×	×	×	×	×	Time action operation Max. setting count: 32
Sampling	—	—	—	×	×	×	○	×	×	×	○	○	×	×	×	×	Storage count: Max. 2000 times

(a) The number of parts that may be displayed actually is as follows:
[Maximum setting points in the above list] = [base screen] + [overlap screen]

(b) The size of the memory capacity changes with the conditions (such as the presence/absence of the display frame).
The above sizes are the minimum sizes of the corresponding parts.

(c) The built-in memory capacities of the GOT-F900 series are as follows.
- F940WGOT: 1M bytes
- F940GOT : 512k bytes
- F930GOT : 256k bytes
- F920GOT : 128k bytes

4.4 Overlap Setting

4.4.1 Figure and object

GOT-A900 series	○	GOT-F900 series	○

When the GOT is used for display, objects are displayed on figures regardless of the setting order of objects.

4.4.2 About overlapping Objects

GOT-A900 series	○	GOT-F900 series	×

POINT

Make setting so that objects are not overlapped.
When the GOT is used for display, the overlap area is not displayed correctly.
However, overlapped objects can be set only in the case of the following combinations.

(1) Combination of objects usable by overlapping with touch key

Objects created without the touch key, Numerical input and ASCII input can be overlapped with the touch key.

POINT

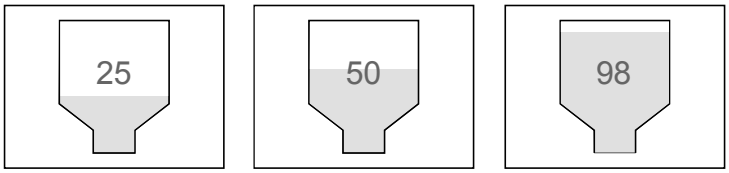
When setting the touch key, set "Shape" to "No". Do not set "Text".

(2) Combination of objects usable by overlapping with level display

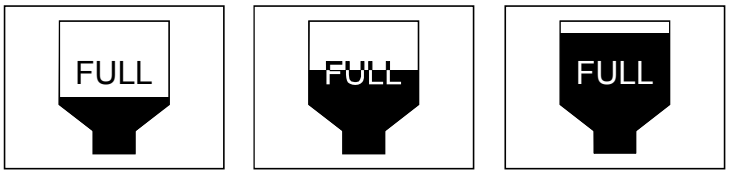
Objects created with numerical display and comment display can be overlapped with the level display. (only one object for one level display function)
In this case, the display mode in numerical display and comment display must be designated to "Transparent" or "XOR".

If not designated, "Transparent" becomes effective as the default.

(Ex. 1) When the display mode is designated to "Transparent"
It is effective when using a color display.



(Ex. 2) When the display mode is designated to "XOR"
In contrast to the object in "Transparent", the overlap area of the level can be inverted.
It is effective when using a black and white display.



POINT

Numerical display or comment display placed over level display
- A numerical/comment display is not blinked (flickered).
- A numerical/comment display is not highlighted.
- A numerical/comment display may not be provided properly if it comes out of the display frame of a level display.
- A numerical/comment display may not be provided properly if a frame figure has been set to the numerical or comment display function.
- A numerical/comment display is updated only when a level display has changed. A numerical/ comment display is not updated if only the monitor device value set to that display is changed.

4.5 Available Devices

4.5.1 Internal devices of GOT

(1) GOT bit registers (GB), GOT data registers (GD)

These are the GOT's internal devices which may be used only within the GOT.
The GOT bit registers (GB) are bit devices and the GOT data registers (GD) are word devices.
These devices are useful when you want to use devices in the following processings which need not be passed through the PLC CPU.

- Screen switching device
- Script function work area
- Bar-code read value storage area

(2) GOT special registers (GS)

These are special registers designed for the GOT.
They store the GOT's internal information, communication conditions, script error information, etc.
By monitoring these devices with various object functions and script functions, you can gather various information of the GOT easily.
The following table lists the GOT special registers and device functions.

(a) Read devices

Device	Function
GS0	Common information 1
GS1	Base screen information
GS2 to GS5	Reserved
GS6	CC-Link G4 station number
GS7	1-second binary counter
GS8	Monitor scan time
GS9	Reserved
GS10	Monitor scan counter
GS11 to GS13	Reserved
GS14	Script common information
GS15	Script error pointer
GS16	Script number
GS17	Error code
⋮	⋮
GS46	Script number
GS47	Error code
GS48	Script execution pointer
GS49 to GS79	Script execution number
GS80 to GS199	Reserved
GS200 to GS229	Gateway information
GS230 to GS251	Reserved
GS252	Error detection common information
GS253 to 383	Must not be used

- Common information 1 (GS0)

b15 to b6	b5	b4	b3	b2	b1	b0

b0 : Alternates between ON and OFF per communication cycle.
b1 : Remains ON from base/window screen switching until one cycle of on-screen setting processing is completed. (This also applies to station number changing and security level changing.)

b2 : Turns ON from when the base/window screen is changed until one cycle of the on-screen status watching object processing is completed. (This also applies to the case where the station number is changed or the security level is changed.)
b3 : Remains ON while the power-on initial screen appears.
b4 : Normally ON.
b5 : Normally OFF.
b6 to b15 : Reserved

- Base screen information (GS1)

b15 to b3	b2	b1	b0

b0 : Alternates between ON and OFF per communication cycle of the base screen.
b1 : Remains ON from base screen switching until one cycle of on-base screen setting processing is completed. (This also applies to station number changing and security level changing.)
b2 : Turns ON from when the base screen is changed until one cycle of the on-screen status watching object processing is completed. (This also applies to the case where the station number is changed or the security level is changed.)
b3 to b15 : Reserved

- CC-Link G4 station number (GS6)
  Stores the station number of the AJ65BT-G4-S3 only once when the GOT connected to the CC-Link network via the AJ65BT-G4-S3 is powered on.
- 1-second binary counter (GS7)
  Incremented every second immediately after power-on.
  The user can write a specific value, from which the counter will start incrementing. The value is stored in binary.
- Monitor scan time (GS8)
  Stores in binary the time (ms) until one cycle of processing set on the display screen is completed.
  The data is updated upon completion of all processings set on the screen.
  Errors of about ±10ms may occur depending on the processing setting.
  Also, the object not processed by the security function will not be the target.
- Monitor scan time counter (GS10)
  Incremented every time one cycle of processing set on the display screen is completed.
- Script common information (GS14)
  Stores the error information of the script functions.

b15 to b13	b12	b11 to b9	b8	b7	b6 to b1	b0

b0 : Turns ON at error occurrence.
b1 to b6 : Reserved
b7 : Turns ON at BCD error occurrence.
b8 : Turns ON at zero division error occurrence.
b9 to b11 : Reserved
b12 : Turns ON at communication error occurrence.
b13 to b15 : Reserved

- Script error pointer (GS15)
  Stores the pointer value (16 to 46) which indicates the address where the script error data (GS16 to 47) is stored. (Default: -1)
  Every time error data is stored, the pointer value changes as indicated below.

  "-1" → "16" → "18" → "20" → ····· → "46" → "16"

  The pointer value denotes the address of the script error data (GS16 to 47) as indicated below.
  Example 1) When GS15 is 16, error data is stored into GS16, 17.
  Example 2) When GS15 is 46, error data is stored into GS46, 47.
- Script error data (GS16 to GS47)
  Store the script numbers and error codes of the scripts in error in due order, starting from the higher addresses of the storage area.
  When an error occurs, a script number and error code are stored on a 2-word basis as a history.
  Note that if 15 or more errors occur, the upper addresses are overwritten in order.
- Script execution pointer (GS48)
  Stores the pointer value (49 to 79) which indicates the address where a script execution number (GS49 to 79) is stored. (Default: -1)
  Every time an execution number is stored, the pointer value changes as indicated below.

  "-1" → "49" → "50" → "51" → ····· → "79" → "49"

  The pointer value denotes the address of the script execution number (GS49 to 79) as indicated below.
  Example 1) When GS48 is 49, the execution number is stored into GS49.
  Example 2) When GS48 is 79, the execution number is stored into GS79.
- Script execution number (GS49 t GS79)
  Store the script numbers of the scripts executed as a history.
- Gateway information (GS200 to GS229)
  Stores the error information when the gateway functions are used.
  For details of the error definition stored, refer to the GOT-A900 Series Operating Manual (GT Works Version5/GT Designer Version5 Compatible Gateway functions).
- Error detection common information (GS252)

b15 to b1	b0

  b0 : Turns ON if an error is detected in the alarm information file to be stored when executing PC card storage function by alarm history display function.
  The alarm information file is not stored into a PC card while this bit is ON.
  Turns OFF when the error detection common control (GS452.b0) is turned ON.
  Useful for error detection during file storage.
  b1 to b15 : Must not be used.

(b) Write devices

Device	Function
GS384	Script common information
GS385	Script monitor time
GS386 to 399	Reserved
GS400	Gateway common control
GS401 to 449	Reserved
GS450	Monitor common control
GS451	Reserved
GS452	Error detection common control
GS453 to 499	Reserved
GS500	GT SoftGOT common information
GS501 to 511	Reserved

• Script common information (GS384)
Clears the script error data (GS16 to 47) or re-executes the script at error stop.

b15 to b2	b1	b0

b0 : Turned ON to clear the script error data.
b1 : Re-executes the script that was at a stop due to error occurrence.
When re-executing it, check/execute the following.
- Before starting re-execution, turn ON the bit 0 to clear the error.
- Execute the script from its beginning, not from where it had stopped.
- Since the device values remain unchanged as in the stop status, check the device values of the script before starting re-execution.
- When the "trigger type" of the script is the "rise/fall" of a device, turn the trigger device from ON to OFF/OFF to ON again to re-execute the script.

• Script monitor time (GS385)
Set the monitor time of one script in seconds.
If a script does not end the preset time after its start, script processing is stopped. (Error code: 15)
The initial setting of "0" is processed as 10 seconds.

Setting Example	Monitor Time
0 (default)	10 seconds
1	1 second
10	10 seconds
11	11 seconds

• Screen script initial operation (GS386)
Set whether initial operation will be performed or not when any of the following conditions is enabled.

• The screen script function is used.
• The execution condition (trigger type) selected is "Rise/Fall".
• Switching to the screen having scripts takes place.

For example, when the trigger type is Bit OFF to ON and its trigger bit is ON at the setting of "0", the screen is changed and the screen scripts are then executed once.

Setting Example	Trigger Type	Bit Value of Trigger	Initial Operation
0	Bit OFF to ON	ON	Performed
	Bit ON to OFF	OFF	
Other than 0	Bit OFF to ON	ON	Not performed
	Bit ON to OFF	OFF	

• Gateway common information (GS400)
Clears the error information on the gateway functions stored in the gateway information (GS200 to 229).
For details of the error definition stored, refer to the GOT-A900 Series Operating Manual (GT Works Version5/GT Designer Version5 Compatible Gateway functions).

• Monitor common control (GS450)

b15 to b13	b12	b11 to b0

b0 to b11 : Reserved.
b12 : Controls the timing when the screen/station No. changes by touch switch operation. This applies when multiple actions including either of the bit Set/Reset/Alternate and either of screen switching/station No. switching have been set for a touch switch.
b13 to b15 : Reserved.

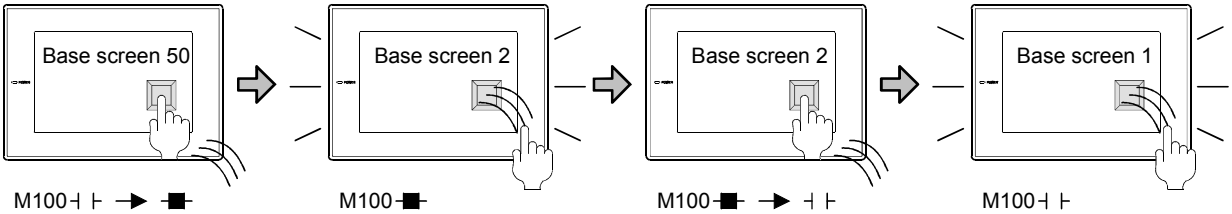
1) When multiple actions including either of bit Set/Reset/Alternate and either of screen switching/station No. switching are set for a touch switch
When multiple actions including either of bit Set/Reset/Alternate and either of screen switching/station No. switching are set for a touch switch, the timing when the screen or station No. changes will vary depending on the standard monitor OS version in GOT, as shown below.

Setting item	Standard monitor version 9.0.7 or earlier	Standard monitor version 9.1.1 or later
Screen switching/Station No. switching + Set	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. switching + Reset	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. switching + Alternate	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. switching + Momentary	When the touch switch is released	
Screen switching/Station No. switching + Word	When the touch switch is touched	When the touch switch is touched

Standard monitor version 9.0.7: Stored in GT Designer Version5 30G edition
Standard monitor version 9.1.1: Stored in GT Designer Version5 31H edition.

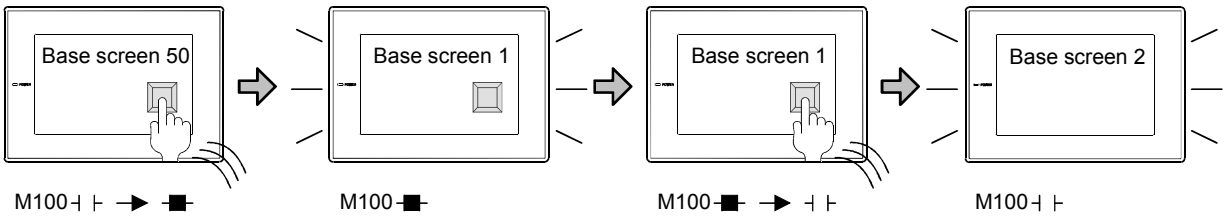
Example) When multiple actions including followings are set for a touch switch.
When multiple actions including both screen switching and bit Alternate are set for a touch switch, the device status after screen change is reversed between standard monitor version 9.0.7 or earlier and 9.1.1 or later.
(However, when bit Momentary is set with other actions for a touch switch, the same operation as standard monitor version 9.0.7 or earlier is performed.)
Bit Alternate : M100
Screen switching : Screen changes to base screen 2 when M100 turns ON.
Screen switching : Screen changes to base screen 1 when M100 turns OFF.

• Action when standard monitor version 9.0.7 or earlier is used.
For standard monitor version 9.0.7 or earlier, the screen or station No. changes simultaneously when the specified bit device has turned ON/OFF/ON⟷OFF. The GOT operates based on the value after the bit Set/Reset/Alternate is executed.



M100 turns ON when the touch switch is touched.
The screen changes when the touch switch is released.
M100 turns OFF when the touch switch is touched again.
The screen changes when the touch switch is released.

• Action when standard monitor version 9.1.1 or earlier is used.
For standard monitor version 9.1.1 or later, the screen or station No. changes simultaneously when the specified bit device has turned ON/OFF/ON⟷OFF. The GOT operates based on the value before the bit Set/Reset/Alternate is executed.



M100 turns ON and the screen changes when the touch switch is touched. (The operation is based on the value (M100: OFF) before the bit Alternate is executed.)

M100 turns OFF and the screen changes when the touch switch is touched. (The operation is based on the value (M100: ON) before the bit Alternate is executed.)

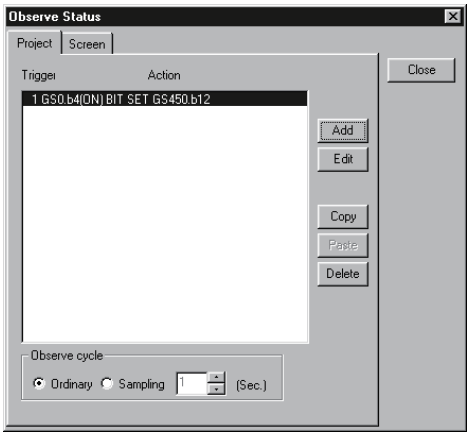
<Corrective action>
The same operation as standard monitor version 9.0.7 or earlier is performed by turning the GOT internal device (GS450.b12) ON before pressing the touch switch.

Setting item	GS450.b12	
	ON	OFF
Screen switching/Station No. switching + Set	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. switching + Reset	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. switching + Alternate	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. switching + Momentary	When the touch switch is released	
Screen switching/Station No. switching + Word	When the touch switch is touched	When the touch switch is touched

The following example shows how to make the settings so that the status observation function will work to automatically turn GS450.b12 ON after the GOT is powered ON.

<Example of setting the status observation function>

Make the following settings in the “Status Observation” screen.
The GOT internal device (device that is always ON: GS0.b4) functions as a trigger.
GS450.b12 turns ON when the trigger is ON.
With this settings, the status observation function works and GS450.b12 turns ON after the GOT is powered ON.
For details of observation function, refer to the .corresponding information, which is obtainable by using the GT Designer Help function.



- Make the settings in the “Project” tab within the “Status Observation” screen.
- Put the settings in the first line. (GS450.b12 turns ON right after the GOT is powered ON.)
- Set “Observe Cycle” to “Ordinary”.

• Error detection common control (GS452)

b15 to b1	b0

b0 : Turns ON to turn the error detection common information (GS252.b0) OFF.
b1 to b15 : Must not be used.

• GT SoftGOT common information (GS500)

b15 to b1	b0

b0 : Turning this bit ON displays the dialog box used to exit from GT SoftGOT.
Turns OFF when exit is canceled in the dialog box.

4.5.2 Device ranges available for the GOT-A900 series

The devices available for each object function of the GOT-A900 series depend on the connection target CPU and connection form.
Device availabilities are listed below on connection target CPU and connection form bases.

(1) QCPU (A Mode), ACPU

Device name			Available range for monitoring
Bit device	Input (X)		X0 to X1FFF
	Output (Y)		Y0 to Y1FFF
	Internal relay (M)		M0 to M8191
	Latch relay (L)		L0 to L8191
	Annunciator (F)		F0 to F2047
	Link relay (B)		B0 to B1FFF
	Special internal relay (M)		M9000 to M9255
	Timer	Contact (TT)	TT0 to TT2047
		Coil (TC)	TC0 to TC2047
	Counter	Contact (CT)	CT0 to CT1023
		Coil (CC)	CC0 to CC1023
	Link special relay (SB)		SB0 to SB7FF
	Word device bit		Designated bit of the following word devices (except for index register and buffer memory)
	GOT bit register (GB)		GB64 to GB16383
Word device	Data register (D)		D0 to D8191
	Special data register (D)		D9000 to D9255
	Link register (W)		W0 to W1FFF
	Timer (current value) (TN)		TN0 to TN2047
	Counter (current value) (CN)		CN0 to CN1023
	Link special register (SW)		SW0 to SW7FF
	File register (R)		R0 to R8191
	Extended file register (ER)	Block	1 to 255
		Device	R0 to R8191
	Index register ＊2	(Z)	Z0 to Z6 (Z0 = Z)
		(V)	V0 to V6 (V0 = V)
	Accumulator (A)		A0 to A1
	Buffer memory (special function unit) (BM) ＊1		BM0 to BMn
	Bit device word ＊3＊4		Converting the above bit devices to words (except for timer and counter)
	GOT data register (GD)		GD64 to GD16383
	GOT special register (GS)		GS0 to GS511

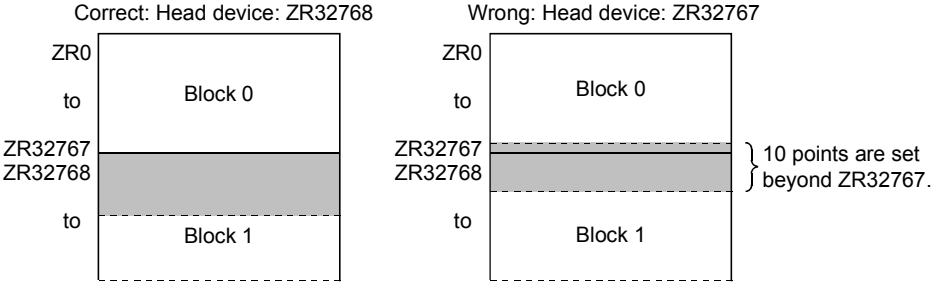
＊1 Only special function units of the GOT connection station can be designated.
Set within the address range of the buffer memory of the designated special function unit.
＊2 Writing to the index register is prohibited during computer link connection.
＊3 Use a multiple of 16 for setting device number.
＊4 If converting the special internal relay (M) to a bit device word, regard 9000 as 0 and use a multiple of 16 for the device number.
(Example) M9000, M9016, M9240

(2) QCPU (Q Mode), QnACPU

Device name			Available range for monitoring
Bit device	Input (X)		X0 to X1FFF
	Output (Y)		Y0 to Y1FFF
	Internal relay (M) ∗7		M0 to M32767
	Latch relay (L)		L0 to L32767
	Annunciator (F)		F0 to F32767
	Link relay (B)		B0 to B1FFF
	Timer ∗7	Contact (TT)	TT0 to TT32767
		Coil (TC)	TC0 to TC32767
	Counter ∗7	Contact (CT)	CT0 to CT32767
		Coil (CC)	CC0 to CC32767
	Special relay (SM)		SM0 to SM2047
	Retentive timer	Contact (SS)	SS0 to SS32767
		Coil (SC)	SC0 to SC32767
	Step relay (S)		S0 to S32767
	Link special relay (SB)		SB0 to SB7FF
	Word device bit		Designated bit of the following word devices (except for index register and buffer memory)
	GOT bit register (GB)		GB64 to GB16383
Word device	Data register (D) ∗7		D0 to D32767
	Special data register (SD)		SD0 to SD2047
	Link register (W)		W0 to W1FFF
	Timer (current value) (TN)		TN0 to TN32767
	Counter (current value) (CN)		CN0 to CN32767
	Retentive timer (current value) (SN)		SN0 to SN32767
	Link special register (SW)		SW0 to SW7FF
	File register (R) ∗1, ∗2		R0 to R32767
	Extended file register (ER) ∗1	Block	0 to 31
		Device	R0 to R32767
	Extended file register (ZR) ∗1, ∗3, ∗4		ZR0 to ZR1042431
	Index register (Z)		Z0 to Z15
	Buffer memory (special function unit) (BM) ∗5		BM0 to BMn
	Bit device word ∗6		Converting the above bit devices to words
	GOT data register (GD)		GD64 to GD16383
	GOT special register (GS)		GS0 to GS511

∗1 Do not set a file register by GT Designer when multiple programs are executed with the file of the file register set at "Use the same file name as the program" by the PLC parameter of GX Developer. (With exceptions of MELSEC-QnA).
Otherwise, read/write at GOT will be erroneous.
∗2 Available for file register of block No. switched with the RSET instruction.
∗3 Available for file register of block No. of file name switched with the QDRSET instruction.
∗4 GOT treats them in units of 32k (32767 points).
Make the setting not to break up the 32k-unit block when specifying the extension file register (ZR) in the object settings.
In the case of incorrect setting, the error message "The specified device is outside the valid range" will be displayed in the system alarm.
There is no range limit for the read/write by specifying the file register name with the recipe function.

[Setting example]: When devices are specified consecutively (e.g. line graph); when 10 points are specified



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∗5 Only special function units of the GOT connection station can be designated.
Set within the address range of the buffer memory of the designated special function unit.
∗6 Set the device numbers in multiples of 16.
∗7 Do not use the local device set in a QCPU (Q mode) system.
Otherwise normal monitoring is not performed.

(3) Motion controller CPU (Q172CPU, Q173CPU)

Device name		Available range for monitoring
Bit device	Input (X)	X0 to X1FFF
	Output (Y)	Y0 to Y1FFF
	Internal relay (M) ∗6	M0 to M8191
	Latch relay (L)	L0 to 8191
	Annunciator (F)	F0 to F2047
	Link relay (B)	B0 to B1FFF
	Special relay (SM) ∗1	SM0 to SM255
	Word device bit	Specified bit of the following word devices
	GOT bit register (GB)	GB64 to GB16383
Word device	Data register (D) ∗2, ∗3, ∗6	D0 to D32767
	Link register (W)	W0 to W1FFF
	Motion device ∗4	#0 to #8191
	Bit device word ∗5	Converting the above bit devices to words
	GOT data register (GD)	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

∗1 When setting the special internal relays M9000 to M9255, use SM as the device name, and the value decreased by 9000 (i.e. 0 to 255) as the device number.
∗2 When setting the special data registers (D9000 to D9255), set them as they are, D9000 to D9255.
∗3 D8192 to D8999 and D9256 to D9999 are outside the range.
∗4 Cannot be monitored using GT SoftGOT.
∗5 Set the device number as a multiple of 16.
∗6 Do not use the local device set in a motion controller CPU (Q172CPU, Q173CPU) system.
Otherwise normal monitoring is not performed.

(4) MELSEC-Q (Multi) / Q Motion

Device name			Available range for monitoring
Bit device	Input (X)		X0 to X1FFF
	Output (Y)		Y0 to Y1FFF
	Internal relay (M) ∗11		M0 to M32767
	Latch relay (L)		L0 to L32767
	Annunciator (F)		F0 to F32767
	Link relay (B)		B0 to B7FFF
	Timer ∗11	Contact (TT)	TT0 to TT32767
		Coil (TC)	TC0 to TC32767
	Counter ∗11	Contact (CT)	CT0 to CT32767
		Coil (CC)	CC0 to CC32767
	Special relay (SM) ∗7		SM0 to SM2047
	Retentive timer ∗11	Contact (SS)	SS0 to SS32767
		Coil (SC)	SC0 to SC32767
	Step relay (S)		S0 to S32767
	Link special relay (SB)		SB0 to SB7FF
	Word device bit		Specified bit of the following word devices (Except Index register and Buffer memory)
Word device	Data register (D) ∗8, ∗9, ∗11		D0 to D32767
	Special data register (SD)		SD0 to SD2047
	Link register (W)		W0 to W7FFF
	Timer (current value) (TN) ∗11		TN0 to TN32767
	Counter (current value) (CN) ∗11		CN0 to CN32767
	Retentive timer (current value) (SN) ∗11		SN0 to SN32767
	Link special register (SW)		SW0 to SW7FF
	File register (R) ∗1, ∗2		R0 to R32767
	Extended file register (ER) ∗1	Block	0 to 255
		Device	R0 to R32767
	Extended file register (ZR) ∗1, ∗3, ∗4		ZR0 to ZR1042431
	Index register (Z)		Z0 to Z15
	Buffer memory (special function unit) (BM) ∗5		BM0 to BM32767
	Ww		Ww0 to WwFF
	Wr		Wr0 to WrFF
	Motion device (#) ∗10		#0 to #8191
	Bit device word ∗6		Converting the above bit devices to words

∗1 to *6(1) For details of *1 to *5, refer to "(2) QCPU (Q mode), QnACPU".

Q Motion

∗7 When setting special internal relay M9000 to M9255, use SM for the device name and set the value subtracted 9000 for the device number (0 to 255).

∗8 The setting range is D9000 to D9255 when setting the special data register.

∗9 D8192 to D8999 and D9256 to D9999 are out of the valid setting range.

∗10 Monitoring is not available with GT SoftGOT2.

∗11 Do not use the local device set in a MELSEC-Q (Multi)/Q motion system. Otherwise normal monitoring is not performed.

(5) CC-Link connection (Remote device)

Device name		Available range for monitoring
Bit device	Remove input (RX)	X0 to X7FF
	Remote output (RY)	Y0 to Y7FF
	Bit designation of remote register write area (RWw)	Ww0 to WwFF
	Bit designation of remote register read area (RWr)	Wr0 to WrFF
	GOT bit register (GB)	GB64 to GB16383
	Bit designation of GOT data register (GD)	GD64 to GD16383
Word device	Remote register write area (RWw)	Ww0 to WwFF
	Remote register read area (RWr)	Wr0 to WrFF
	GOT data register (GD)	GD64 to GD16383
	Converting GOT bit register to word (GB)	GB64 to GB16383
	GOT special register (GS)	GS0 to GS511

(6) FXCPU

Device name		Available range for monitoring	Device number expression
Bit device	Input relay (X)	X0000 to X0377	Octal notation
	Output relay (Y)	Y0000 to Y0377	
	Auxiliary relay (M)	M0000 to M3071	Decimal notation
	State (S)	S0000 to S0999	
	Special auxiliary relay (M)	M8000 to M8255	
	Timer contact (T)	T000 to T255	
	Counter contact (C)	C000 to C255	
	Word device bit ∗1	—	—
	GOT bit register (GB)	GB64 to GB16383	
Word device	Timer (current value) (T)	T000 to T255	Decimal notation
	Counter (current value) (C)	C000 to C255	
	Data register (D)	D000 to D0999	
	RAM file register (D)	D1000 to D7999	
	Special data register (D)	D8000 to D8255	
	Bit device word ∗2 ∗3	—	
	GOT data register (GD)	GD64 to GD16383	
	GOT special register (GS)	GS0 to GS511	

∗1 While the touch key function to which a word device bit is designated as the monitor device is executed, do not write the word device in a sequence program.

∗2 Bit devices of the timer contact (T) and counter contact (C) cannot be converted to words.

∗3 Use a multiple of 16 for designating the device number.

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(7) Omron PLC

Device name		Available range for monitoring
Bit device	I/O relay	..0000 to 614315
	Internal auxiliary relay	
	Data link relay (LR)	LR00000 to LR19915
	Auxiliary memory relay (AR)	AR00000 to AR95915
	Holding relay (HR)	HR00000 to HR51115
	Internal holding relay (W)	WR00000 to WR51115
	Timer contact (TIM)＊1	TIM0000 to TIM2047
	Counter contact (CNT)＊1	CNT0000 to CNT2047
	Data memory (DM)＊2	DM00000 to DM9999
	Timer (current value) (TIM)＊2	TIM0000 to TIM2047
	Counter (current value) (CNT)＊2	CNT0000 to CNT2047
	GOT bit register (GB)	GB64 to GB16383
Word device	I/O relay	0000 to 6143
	Data link relay (LR)	LR000 to LR199
	Auxiliary memory relay (AR)	AR000 to AR959
	Holding relay (HR)	HR000 to HR511
	Internal holding relay (W)	WR000 to WR511
	Data memory (DM)	DM0000 to DM9999
	Timer (current value) (TIM)	TIM0000 to TIM2047
	Counter (current value) (CNT)	CNT0000 to CNT2047
	Extended data memory (EM current bank)＊3	EM0000 to EM9999
	Extended data memory (EM banks 0 to 12)＊3＊4	
	GOT data register (GD)	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

＊1 When CV1000, CS1 and CJ1 is used, write cannot be performed.
＊2 When executing the touch key function with a word device bit specified as the monitor device, do not perform write to that word device in a sequence program.
＊3 On extended data memory, write/read cannot be performed across banks.
＊4 When the CJ1 is used, EM 0 to 2 are usable.

(8) Yasukawa PLC

(a) When using GL60S, GL60H, GL70H, GL120 or GL130

Device name		Available range for monitoring
Bit device	Coil	O01 to O63424
	Input relay	I1 to I63424
	Link coil	D1 to D2048 D10001 to D12048 D20001 to D22048
	GOT bit register	GB64 to GB16383
Word device	Input register	Z1 to Z31840 ＊1
	Holding register	W1 to W28291 ＊2 SW1 to SW28291 ＊4
	Link register	R1 to R2048 R10001 to R12048 R20001 to R22048 SR1 to SR2048 ＊4 SR10001 to SR12048 ＊4 SR20001 to SR22048 ＊4
	Constant register	K1 to K4096 ＊3
	GOT data register	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

＊1 Change the input register 30001 to 30512 to Z1 to Z512. (Example of setting in default)

＊2 Change the input register 40001 to 49999 to W1 to W9999. (Example of setting in default)

＊3 Change the constant register 31001 to 35096 to K1 to K4096. (Example of setting in default)

＊3 SR and SW are data format-ready registers (imaginary registers) that display the internal data of the PLC using R and W.

The following are differences between SR, SW and R, W display values according to the internal data values of the PLC.

PLC internal data (for 16 bits)	SR, SW	R, W
9999	9999	9999
1001	1001	1001
1000	1000	1000
999	999	999
0	0	0
-1	-1	32769
-999	-999	33767
-1000	-1000	33768
-1001	-1001	33769
-9999	-9999	42767

(b) When using CP-9200SH, MP-920, MP-930, MP-940

Device name		Available range for monitoring
Bit device	Coil	MB0 to MB4095F MB40960 to MB8191F1 ＊1 MB245760 to MB28671F1 ＊1 MB286720 to MB32767F1 ＊1
	Input relay	IB0000 to IBFFFF
	GOT bit register	GB64 to GB16383
Word device	Input register	IW0 to IW7FFF
	Holding register	MW0 to MW32767
	GOT data register	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

＊1 Usable by only MP-940.

(c) When using CP-9300MS (CP-9300MC incompatible)

Device name		Available range for monitoring
Bit device	Coil	MB0 to MB3071F
	Input relay	IB0000 to IB3FF
	GOT bit register	GB64 to GB16383
Word device	Input register	IW0 to IW3F
	Holding register	MW0 to MW3071
	GOT data register	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

(d) When using CP-9300MS (CP-9300MC compatible)

Device name		Available range for monitoring
Bit device	Coil	OB0 to OB1023
	Input relay	IB0 to IB1023
	GOT bit register	GB64 to GB16383
Word device	Input register	I0 to I63
	Data register	M0 to M2047
	Output register	o0 to o63
	GOT data register	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

(e) When using CP-9200(H)

Device name		Available range for monitoring
Bit device	Coil	OB00000 to OB007FF
	Input relay	IB00000 to IB007FF
	GOT bit register	GB64 to GB16383
Word device	Input register	IW00000 to IW007F
	Output register	OW0000 to OW007F
	Data register	DW0000 to DW02047
		ZD0000 to ZD02047 ∗1
	Common register	MW0000 to MW7694
	GOT data register	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

∗1 May be set only when CP-9200 is used.

(f) When using PROGIC-8

Device name		Available range for monitoring
Bit device	Coil	o0001 to o2048 ∗1
	Input relay	I0001 to I0512
	Link coil	D0001 to D1024
	GOT bit register	GB64 to GB16383
Word device	Input register	Z0001 to Z0128
	Holding register	W0001 to W2048
		SW0001 to SW2048
	Link register	R0001 to R1024
		SR0001 to SR1024
	GOT data register	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

∗1 Internal coils N1 to N1536 may be set as o513 to o2048.
However, make setting to avoid o1 to o0512 from overlapping o513 to o2048.

(9) Allen-Bradley PLC

(a) When using SLC500 series

Device name		Monitoring range	Device No. notation
Bit device	Bit (B)	B3:0/0 to B3:255/15 B10:0/0 to B255:255/15	Decimal
	Timer (timing bit) (TT)	T4:0/14 to T4:255/14 T4:0/TT to T4:255/TT T10:0/14 to T255:255/14 T10:0/TT to T255:255/TT	
	Timer (completion bit) (TN)	T4:0/13 to T4:255/13 T4:0/DN to T4:255/DN T10:0/13 to T255:255/13 T10:0/DN to T255:255/DN	
	Counter (up counter) (CU)	C5:0/15 to C5:255/15 C5:0/CU to C5:255/CU C10:0/15 to C255:255/15 C10:0/CU to C255:255/CU	
	Counter (down counter) (CD)	C5:0/14 to C5:255/14 C5:0/CD to C5:255/CD C10:0/14 to C255:255/14 C10:0/CD to C255:255/CD	
	Counter (completion bit) (CN)	C5:0/13 to C5:255/13 C5:0/DN to C255:255/DN C10:0/13 to C255:255/13 C10:0/DN to C255:255/DN	
	Integer (N)	N7:0 to N7:255 N10:0 to N255:255	
	Word device bit	Designated bit of the following word devices	
	GOT internal bit register (GB)	GB64 to GB16383	
Word device	Bit (B)	B3:0 to B3:255	Decimal
	Timer (set value) (TP)	T4:0.1 to T4:255.1 T4:0.PRE to T4:255.PRE T10:0.1 to T255:255.1 T10:0.PRE to T255:255.PRE ＊1	
	Timer (current value) (TA)	T4:0.2 to T4:255.2 T4:0.ACC to T4:255.ACC T10:0.2 to T255:255.2 T10:0.ACC to T255:255.ACC ＊1	
	Counter (set value) (CP)	C5:0.1 to C5:255.1 C5:0.PRE to C5:255.PRE C10:0.1 to C255:255.1 C10:0.PRE to C255:255.PRE ＊1	
	Counter (current value) (CA)	C5:0.2 to C5:255.2 C5:0.ACC to C5:255.ACC C10:0.2 to C255:255.2 C10:0.ACC to C255:255.ACC ＊1	
	Integer (N)	N7:0 to N7:255 N10:0 to N255:255 ＊1	
	GOT internal data register (GD)	GD64 to GD16383	
	GOT special register (GS)	GS0 to GS511	

＊1 Writing on device is not allowed for 32 bit data.

＊2 If the device specified is outside the range, the object set to the out-of-range device may not be displayed. In that case, check and correct the device.

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(b) When using Micrologix 1000 series

Device name		Monitoring range	Device No. notation
Bit device	Bit (B)	B3:0/0 to B3:31/15	Decimal
	Timer (timing bit) (TT)	T4:0/14 to T4:39/14 T4:0/TT to T4:39/TT	
	Timer (completion bit) (TN)	T4:0/13 to T4:39/13 T4:0/DN to T4:39/DN	
	Counter (up counter) (CU)	C5:0/15 to C5:31/15 C5:0/CU to C5:31/CU	
	Counter (down counter) (CD)	C5:0/14 to C5:31/14 C5:0/CD to C5:31/CD	
	Counter (completion bit) (CN)	C5:0/13 to C5:31/13 C5:0/DN to C5:31/DN	
	Integer (N)	N7:0 to N7:104	
	Word device bit	Designated bit of the following word devices	
	GOT internal bit register (GB)	GB64 to GB16383	
Word device	Bit (B)	B3:0 to B3:31	Decimal
	Timer (set value) (TP)	T4:0.1 to T4:39.1 T4:0.PRE to T4:39.PRE ＊1	
	Timer (current value) (TA)	T4:0.2 to T4:39.2 T4:0.ACC to T4:39.ACC ＊1	
	Counter (set value) (CP)	C5:0.1 to C5:39.1 C5:0.PRE to D5:39.PRE ＊1	
	Counter (current value) (CA)	C5:0.2 to C5:31.2 C5:0.ACC to C5:31.ACC ＊1	
	Integer (N)	N7:0 to N7:14 ＊1	
	GOT internal data register (GD)	GD64 to GD16383	
	GOT special register (GS)	GS0 to GS511	

＊1 Writing on device is not allowed for 32 bit data.
＊2 If the device specified is outside the range, the object set to the out-of-range device may not be displayed. In that case, check and correct the device.

(c) When using Micrologix 1500 series

Device name		Monitoring range	Device No. notation
Bit device	Bit (B)	B3:0/0 to B255:255/15	Decimal
	Timer (timing bit) (TT)	T3:0/14 to T255:255/14 T3:0/TT to T255:255/TT	
	Timer (completion bit) (TN)	T3:0/13 to T255:255/13 T3:0/DN to T255:255/DN	
	Counter (up counter) (CU)	C3:0/15 to C255:255/15 C3:0/CU to C255:255/CU	
	Counter (down counter) (CD)	C3:0/14 to C255:255/14 C3:0CD to C255:255/CD	
	Counter (completion bit) (CN)	C3:0/13 to C255:255/13 C3:0/DN to T255:255/DN	
	Integer (N)	N3:0 to N255:255	
	Word device bit	Designated bit of the following word devices	
	GOT internal bit register (GB)	GB64 to GB16383	
Word device	Bit (B)	B3:0 to B255:255	Decimal
	Timer (set value) (TP)	T3:0.1 to T255:255.1 T3:0.PRE to T255:255.PRE ＊1	
	Timer (current value) (TA)	T3:0.2 to T255:255.2 T3:0.ACC to T255:255.ACC ＊1	
	Counter (set value) (CP)	C3:0.1 to C255:255.1 C3:0.PRE to C255:255.PRE ＊1	
	Counter (current value) (CA)	C3:0.2 to C255:255.2 C3:0.ACC to C255:255.ACC ＊1	
	Integer (N)	N3:0 to N255:255 ＊1	
	GOT internal data register (GD)	GD64 to GD16383	
	GOT special register (GS)	GS0 to GS511	

＊1 Writing on device is not allowed for 32 bit data.
＊2 If the device specified is outside the range, the object set to the out-of-range device may not be displayed. In that case, check and correct the device.

(10) Sharp PLC

Device name	Setting monitor	Device No. notation
I/O relay	0 to 15777 20000 to 75777	Octal
Timer counter (contact)	T/C0000 to T/C1777	
Timer counter (current value)	T/C0000 to T/C1777 (b0000 to b3776)	
Register	09000 to 09776 19000 to 19776 29000 to 29776 39000 to 39776 49000 to 49776 59000 to 59776 69000 to 69776 79000 to 79776 89000 to 89776 99000 to 99776 E0000 to E0776 E1000 to E1776 E2000 to E2776 E3000 to E3776 E4000 to E4776 E5000 to E5776 E6000 to E6776 E7000 to E7776	
File register	1000000 to 1177776 2000000 to 2177776 3000000 to 3177776 4000000 to 4177776 5000000 to 5177776 6000000 to 6177776 7000000 to 7177776	

(11) Toshiba PLC

(a) PROSEC T Series

Device name		Available range for setting monitor
Bit device	External input (X)	X0000 to X511F
	External output (Y)	Y0000 to Y511F
	Internal relay (R)	R0000 to R999F
	Special relay (S)	S0000 to S255F
	Link register relay (Z)	Z0000 to Z999F
	Link relay (L)	L0000 to L255F
	Timer (contact) (T) ∗4	T000 to T999
	Counter (contact) (C) ∗4	C000 to C511
	Word device bit ∗5	Designated bit of the following word devices (except timer (current value) and counter (current value))
	GOT bit register (GB)	GB64 to GB16383
Word device	External input (X)	XW000 to XW511
	External output (Y)	YW000 to YW511
	Internal relay (R)	RW000 to RW999
	Special relay (S)	SW000 to SW255
	Link register relay (Z)	—∗3
	Link relay (L)	LW000 to LW255
	Timer (current value) (T) ∗4	T000 to T999
	Counter (current value) (C) ∗4	C000 to C511
	Data register (D) ∗2	D0000 to D8191
	Link register (W)	W0000 to W2047
	File register (F)	F0000 to F32467 ∗1
	Bit device word	Conversion of the above bit devices to words (except link register relay, timer (contact) and counter (contact)) GOT data register (GD)
	GOT data register (GD)	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

∗1 The extended file register is not supported.
∗2 When the mode switch on the CPU module is set to "P-RUN", D0000 to D4095 are write disabled.
∗3 The Z relay corresponds to 1 bit in 1000 words from W registers 0 to 999.
∗4 The contacts and current values of the timers/counters are written after they have been read once. During that period, therefore, do not change them in the sequence program.
∗5 The bit of the word device is designated after it has been read once. During that period, therefore, do not change it in the sequence program.

(b) PROSEC V Series

The representations of the device addresses set differ between Toshiba PLC's peripheral software and GOT as indicated below. Make setting after converting the Toshiba side addresses into the GOT side addresses.

Device name		Available range for setting/monitoring (GOT side address)	Available range for setting/monitoring (Toshiba side address)
Bit device	Special register (S) ∗3	S0000 to S511F	S0000 to S8191
	Data register (R) ∗3	R00000 to R4095F	R00000 to R65535
	Word device bit ∗1, ∗3	Specified bit of the following word devices (Except data register (R))	
	GOT bit register (GB)	GB64 to GB16383	-
Word device	Special register (SW) ∗4	SW000 to SW511 (SW000 to SW510: 32 bits)	16 bits: SW000 to SW511 32 bits: SD000 to SD255 (integer) 32 bits: SF000 to SF255 (real number)
	Data register (RW) ∗2, ∗4	RW0000 to RW4095 (RW0000 to RW4094: 32 bits)	16 bits: RW0000 to RW4095 32 bits: RD0000 to RD2047 (integer) 32 bits: RF0000 to RF2047 (real number)
	Data register (D) ∗2, ∗4	D0000 to D4095 (D0000 to D4094: 32 bits)	16 bits: DW0000 to DW4095 32 bits: DD0000 to DD2047 (integer) 32 bits: DF0000 to DF2047 (real number)
	Bit device word	Converting the above bit devices into words	
	GOT data register (GD)	GD64 to GD16383	-
	GOT special register (GS)	GS0 to GS511	-

∗1 Specify the word device bit after the GOT has read it once.
Note that if you make a change in the sequence program before that, the specifying destination will be changed.

∗2 RW0000 and D0000 differ in representation but indicate the data registers in the same region.

∗3 Use the following method to convert the device address into the one represented by the GOT for bit data.
Toshiba address representation/16=word address (quotient) ... bit address (remainder)

Toshiba side address representation	GOT side address representation	Conversion expression
S8191	S511F (Decimal)(Hexadecimal)	8191/16=511...15
R65535	R4095F (Decimal)(Hexadecimal)	65535/16=4095...15

∗4 Use the following method to convert the device address into the one represented by the GOT for word data.

Data format		Toshiba side address representation	GOT side address representation
16-bit data		DW10	D10
32-bit data	(Integer)	DD10 (Calculate device No. in increments of 32 bits)	D20
	(Real number)	DF10 (Calculate device No. in increments of 32 bits)	D20

(12) SIEMENS PLC connection

(a) SIMATIC S7-300 series

Device name		Available range for monitoring
Bit device	Input relay	I0000 to I1277
	Output relay	Q0000 to Q1277
	Bit memory	M0000 to M2557
	GOT bit register	GB64 to GB16383
Word device	Input relay	IW000 to IW126
	Output relay	QW000 to QW126
	Bit memory	MW000 to MW254
	Timer (present value)	T000 to T127
	Counter (present value)	C00 to C63
	Data register	D000100000 to D000108190 D000200000 to D000208190 D000300000 to D000308190 • • • D012600000 to D012608190 D012700000 to D012708190
	GOT data register	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

(b) SIMATIC S7-400 series

Device name		Available range for monitoring
Bit device	Input relay	I0000 to I5117
	Output relay	Q0000 to Q5117
	Bit memory	M00000 to M20477
	GOT bit register	GB64 to GB16383
Word device	Input relay	IW000 to IW510
	Output relay	QW000 to QW510
	Bit memory	MW0000 to MW2046
	Timer (present value)	T000 to T511
	Counter (present value)	C000 to C511
	Data register	D000100000 to D000165534 D000200000 to D000265534 D000300000 to D000365534 • • • D409400000 to D409465534 D409500000 to D409565534
	GOT data register	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

(13) Hitachi PLC connection

	Device name	Monitoring range	Device No. notation
Bit device	External input (X)	X00000 to X05A95	Hexadecimal + decimal
	External output (Y)	Y00000 to Y05A95	
	Remote external input (X)	X10000 to X49995	Decimal
	Remote external output (Y)	Y10000 to Y49995	
	First CPU link (L)	L0000 to L3FFF	Hexadecimal
	Second CPU link (L)	L10000 to L13FFF	
	Data area (M)	M0000 to M3FFF	
	On-delay timer (TD)＊1	TD000 to TD255	Decimal
	Single-shot timer (SS)＊1	SS000 to SS255	
	Watchdog timer (WDT)＊1	WDT000 to WDT255	
	Monostable timer (MS)＊1	MS000 to MS255	
	Retentive timer (TMR)＊1	TMR000 to TMR255	
	Up counter (CU)＊1	CU000 to CU511	
	Ring counter (RCU)＊1	RCU000 to RCU511	
	Up/down counter (CT)＊1	CT000 to CT511	
	Bit internal output (R)	R000 to R7BF	Hexadecimal
	DIF (leading edge detection)＊1	DIF000 to DIF511	Decimal
	DFN (trailing edge detection)＊1	DFN000 to DFN511	
	GOT bit register	GB64 to GB16383	
Word device	External input (WX)	WX0000 to WX05A7	Hexadecimal + decimal
	External output (WY)	WY0000 to WY05A7	
	Remote external input (WX)	WX1000 to WX4997	Decimal
	Remote external output (WY)	WY1000 to WY4997	
	First CPU link (WL)	WL000 to WL3FF	Hexadecimal
	Second CPU link (WL)	WL1000 to WL13FF	
	Data area (WM)	WM000 to WM3FF	
	Timer/counter (elapsed value)(TC) ＊1	TC000 to TC511	Decimal
	Word internal output (WR)	WR000 to WR3FF	Hexadecimal
	GOT data register	GD64 to GD16383	Decimal
	GOT special register (GS)	GS0 toGS511	

＊1 The same number cannot be used.

＊2 If the device specified is outside the range, the object set to the out-of-range device may not be displayed. In that case, check and correct the device.

(14) Matsushita Electric Works PLC connection∗1

Device name		Available range for setting monitor
Bit device	Input relay (X) ∗2, ∗3	X0000 to X511F
	Output relay (Y) ∗3	Y0000 to Y511F
	Internal relay (R)	R0000 to R886F
	Link relay (L) ∗5	L0000 to L639F
	Special relay (R) ∗2	R9000 to R910F
	Timer contact (T) ∗2, ∗4	T0000 to T3071
	Counter contact (C) ∗2, ∗4	C0000 to C3071
	GOT bit register (GB)	GB64 to GB16383
Word device	Input relay (WX) ∗2	WX000 to WX511
	Output relay (WY)	WY000 to WY511
	Internal relay (WR)	WR000 to WR886
	Link relay (WL)	WL000 to WL639
	Special relay (WR)	WR900 to WR910
	Timer/counter (elapsed value)(EV) ∗4	EV0000 to EV3071
	Timer/counter (set value)(SV) ∗4	SV0000 to SV3071
	Data register (DT)	DT00000 to DT10239
	Link register (LD) ∗5	LD0000 to LD8447
	File register (FL) ∗5	FL00000 to FL32764
	GOT data register (GD)	GD64 to GD16383
	GOT special register (GS)	GS0 to GS511

∗1 Device ranges for use of the FP10SH. When the FP0, FP1, FP2, FP3, FP5, FP10(S) or FP-M is used, the device ranges vary with the CPU.
∗2 Write to device cannot be performed.
∗3 Only the devices assigned to the I/O contacts using the peripheral software are usable.
∗4 The number of timer and counter devices varies with the first number of the counters set with the system register (No. 5) value.
∗5 There are no corresponding devices on the FP0/FP1/FP-M.

(15) Microcomputer connection

Device name		Available range for monitoring
Bit device	GOT bit register (GB)	GB64 to GB16383∗1
	Data register (D)	D0 to D2047
	Specified bit of word device	—
Word device	Data register (D)	D0 to D2047
	GOT data register (GD)	GD64 to GD16383∗1
	GOT special register (GS)	GS0 to GS511

∗1 Write and read operations for GB and GD devices cannot be performed from the host.

4.5.3 Device ranges available for the GOT-F900 series

The devices available for each object function of the GOT-F900 series depend on the connection target CPU and connection form.
Device availabilities are listed below on connection target CPU and connection form bases.

(1) QCPU(A Mode), ACPU

Device name			Available range for setting/monitoring
Bit device	Input (X)		X0 to X0FFF
	Output (Y)		Y0 to Y0FFF
	Internal relay (M)		M0 to M8191
	Latch relay (L)		L0 to L8191
	Annunciator (F)		F0 to F2047
	Link relay (B)		B0 to B1FFF
	Special internal relay (M)		M9000 to M9255
	Timer	Contact (TT)	TT0 to TT2047
		Coil (TC)	TC0 to TC2047
	Counter	Contact (CT)	CT0 to CT1023
		Coil (CC)	CC0 to CC1023
	GOT bit register (GB)		GB132 to GB1023
Word device	Data register (D)		D0 to D8191
	Special data register (D)		D9000 to D9255
	Link register (W)		W0 to W1FFF
	Timer (set value) (TS)		TS0 to TS2047
	Timer (current value) (TN)		TN0 to TN2047
	Counter (set value) (CS)		CS0 to CS1023
	Counter (current value) (CN)		CN0 to CN1023
	File register (R)		R0 to R8191
	Accumulator (A)		A0 to A1
	Index register ∗1	(Z)	Z0 to Z6 (Z0 = Z)
		(V)	V0 to V6 (V0 = V)
	GOT data register (GD)		GD100 to GD1023

∗1 Write to the index register cannot be performed during computer link connection.

(2) FXCPU

(a) MELSEC-FX

Device name				Setting range			Device No. Notation
Bit device	Input (X)			X0	to	X377	Octal
	Output (Y)			Y0	to	Y377	
	Auxiliary relay (M)			M0	to	M3071	Decimal
	Special auxiliary relay (M)			M8000	to	M8255	
	State (S)			S0	to	S999	
	Timer contact (T)			T0	to	T255	
	Counter contact (C)			C0	to	C255	
Word device	Data register (D) (Including file register)			D0	to	D7999	Decimal
	Special data register (D)			D8000	to	D8255	
	Timer (T)		Current value (T)	T0	to	T255	
			Set value (TS) ∗2	TS0	to	TS255	
	Counter (C)	16bit	Current value (C)	C0	to	C199	
			Set value (CS)	CS0	to	CS199	
		32bit	Current value (C) ∗1	C200	to	C255	
			Set value (CS) ∗1	CS200	to	CS255	
	Index register (Z)			Z←Available in DU/WIN/unavailable in GTD			
	Index register (V)			V←Available in DU/WIN/unavailable in GTD			

∗1 Bar code reader cannot be specified as word device.

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Condition enabling data changes

While the GOT is connected to the A Series CPU or A Series computer link unit, data cannot be changed in set values (specified directly) of timers and counters and file registers in the following condition.

PLC status		While PLC is stopped				While PLC is running			
Memory cassette attached to PLC	Memory type	RAM	EPROM	EEPROM		RAM	EPROM	EEPROM	
	Write protect switch status	—	—	ON	OFF	—	—	ON	OFF
Keyword	Not present	○	× ∗1	× ∗1	○	○	× ∗1	× ∗1	× ∗3
	Present	× ∗2				× ∗2			

The following error messages are displayed on the screen only when a timer, counter or file register is accessed through a Numeric Input or ASCII input.

∗1 When data of a set value (specified directly) of a timer or counter is tried to be changed, the error message "CAN NOT WRITE." is displayed.
(Set values of timers and counters can be changed if they are specified indirectly using data registers.)
When data of a file register is tried to be changed, the error message "CAN NOT WRITE." is displayed.

∗2 The error message "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed.

∗3 The error message "PLC IS RUNNING." is displayed.

(b) FX series GM positioning

Device name		Setting range			Device No. Notation
Bit device	Input (X) ∗1	X0	to	X377	Octal
	Output (Y)	Y0	to	Y67	
	Auxiliary relay (M)	M0	to	M511	Decimal
	Special auxiliary relay (M)	M0	to	M9175	
Word device	Data register (D)	D0	to	D3999	Decimal
	Special data register (D)	D9000	to	D9313	
	File register (D)	D4000	to	D6999	
	Index register (Z)	Z0	to	Z6 (32 bits)	
	Index register (V)	V0	to	V6 (32 bits)	

∗1 Writing to device is not executable.

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(3) QCPU(Q Mode), QnACPU

Device name			Available range for setting/monitoring
Bit device	Input (X)		X0 to X1FFF
	Output (Y)		Y0 to Y1FFF
	Internal relay (M)		M0 to M32767
	Latch relay (L)		L0 to L32767
	Annunciator (F)		F0 to F32767
	Link relay (B)		B0 to B7FFF
	Link special relay (SB)		SB0 to SB7FF
	Timer	Contact (TT)	TT0 to TT32767
		Coil (TC)	TC0 to TC32767
	Counter	Contact (CT)	CT0 to CT32767
		Coil (CC)	CC0 to CC32767
	Special internal relay (M)		M9000 to M9255
	Special relay (SM)		SM0 to SM2047
	Retentive timer	Contact (SS)	SS0 to SS32767
		Coil (SC)	SC0 to SC32767
	Step relay (S)		S0 to S32767
	GOT bit register (GB)		GB132 to GB1023
Word device	Data register (D)		D0 to D32767
	Special data register (D)		D9000 to D9255
	Special register (SD)		SD0 to SD2047
	Link register (W)		W0 to W7FFF
	Link special register (SW)		SW0 to SW7FF
	Timer (current value) (TN)＊2		TN0 to TN32767
	Counter (current value) (CN)＊2		CN0 to CN32767
	Retentive timer (current value) (SN)		SN0 to SN32767
	File register (R)＊2		R0 to R32767＊1
	Index register (Z)		Z0 to Z15
	GOT data register (GD)		GD100 to GD1023

＊1 Block file register that is switched by the RSET command is set/monitored.

＊2 When the GOT-F900 series is connected to the system where the A series computer link module is loaded in the QnACPU, monitoring and write cannot be performed on the timers, counters and file registers.
Also note that the available range for setting/monitoring will be the range of the ACPU (AnACPU equivalent).

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(4) Omron PLC

Device name		Available range for setting/monitoring
Bit device	I/O relay	..0000 to 614315
	Internal auxiliary relay	WR0000 to WR51115
	Data link relay (LR)	LR00000 to LR19915
	Auxiliary memory relay (AR)	AR00000 to AR51115
	Holding relay (HR)	HR0000 to HR9915
	Timer contact (TIM)	TIM000 to TIM2047
	Counter contact (CNT)	CNT000 to CNT2047
	GOT bit register	GB132 to GB1023
Word device	Data memory (DM)	DM0000 to DM9999
	Timer (current value) (TIM)	TIM000 to TIM2047
	Counter (current value) (CNT)	CNT000 to CNT2047
	Extended data memory (EM current bank)	EM0000 to EM9999
	Extended data memory (EM banks 0 to 12)	
	GOT data register	GD100 to GD1023

(5) Microcomputer board

Device name		Available range for setting/monitoring
Bit device	Bit data (M)	M0 to M2047
	Special internal relay ∗1	M8000 to M8063
	GOT bit device (GB)	GB132 to GB1023
Word device	Word data	D0 to D4095
	Special data register ∗1	D8000 to D8015
	GOT word device (GD)	GD100 to GD1023

∗1 Special is a device used for special applications (such as interrupt output and communication error information) of the GOT.

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(6) Allen-Bradley PLC

Device name		Available range for setting/monitoring	Device number notation
Bit device	Bit (B)	B3:0/0 to B3:255/15 B10:0/0 to B255:255/15	Octal
	Timer (timing bit) (TT)	T4:0/14 to T4:255/14 T4:0/TT to T4:255/TT T10:0/14 to T255:255/14 T10:0/TT to T255:255/TT	Decimal
	Timer (timing bit) (TN)	T4:0/13 to T4:255/13 T4:0/DN to T4:255/DN T10:0/13 to T255:255/13 T10:0/DN to T255:255/DN	
	Counter (up counter) (CU)	C5:0/15 to C5:255/15 C5:0/CU to C5:255/CU C10:0/15 to C255:255/15 C10:0/CU to C255:255/CU	
	Counter (down counter) (CD)	C5:0/14 to C5:255/14 C5:0/CD to C5:255/CD C10:0/14 to C255:255/14 C10:0/CD to C255:255/CD	
	Counter (completion bit) (CN)	C5:0/13 to C5:255/13 C5:0/DN to C255:255/DN C10:0/13 to C255:255/13 C10:0/DN to C255:255/DN	
	Word device bit	Designated bit of the following word devices	
	GOT internal bit register (GB)	GB64 to GB1023	
Word device	Timer (set value) (TP)	T4:0.1 to T4:255.1 T4:0.PRE to T4:255.PRE T10:0.1 to T255:255.1 T10:0.PRE to T255:255.PRE ＊1	
	Timer (current value) (TA)	T4:0.2 to T4:255.2 T4:0.ACC to T4:255.ACC T10:0.2 to T255:255.2 T10:0.ACC to T255:255.ACC ＊1	
	Counter (set value) (CP)	C5:0.1 to C5:255.1 C5:0.PRE to C5:255.PRE C10:0.1 to C255:255.1 C10:0.PRE to C255:255.PRE ＊1	
	Counter (current value) (CA)	C5:0.2 to C5:255.2 C5:0.ACC to C5:255.ACC C10:0.2 to C255:255.2 C10:0.ACC to C255:255.ACC ＊1	
	Integer (N)	N7:0 to N7:255 N10:0 to N255:255	
	GOT internal data register (GD)	GD100 to GD1023	

＊1 Writing on device is not allowed for 32 bit data.

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(7) SIEMENS PLC (S7-200) connection

Device name		Available range for monitoring
Bit device	Variable memory	V0000.0 to V5119.7
	Input	I0.0 to I7.7
	Output	Q0.0 to Q7.7
	Bit memory	M00.0 to M31.7
	Special memory	SM000.0 to SM194.7
	Timer	T000 to T255
	Counter	C000 to C255
	PLC control relay	S00.0 to S31.7
	GOT bit register	GB132 to GB1023
Word device	Variable memory	VW0000 to VW5118
	Input	IW0 to IW6
	Output	QW0 to QW6
	Analog input	AIW00 to AIW30
	Analog output	AQW00 to AQW30
	Bit memory	MW00 to MW30
	Special memory	SMW000 to SMW192
	Timer	T000 to T255
	Counter	C000 to C255
	High-speed counter	HC0 to HC2
	PLC control relay	S00 to S30
	GOT data register	GD100 to GD1023

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(8) SIEMENS PLC (S7-300) connection

Device name		Available range for monitoring
Bit device	Input relay	I0000 to I5117
	Output relay	Q0000 to Q5117
	Bit memory	M00000 to M20477
	GOT bit register	GB132 to GB1023
Word device	Timer (present value)	T000 to T511
	Counter (present value)	C000 to C511
	Data register	D000100000 to D102365534
	GOT data register	GD100 to GD1023

(9) Matsushita PLC (FP0, FP2SH, FP2-CCU)

Device name		Available range for setting/monitoring
Device name	Input relay (X) ＊3	X0000 to X511F
	Output relay (Y)	Y0000 to X511F
	Internal relay (R) ＊4	R0000 to R910F
	Link relay (L)*1	L0000 to L639F
	Alarm warning relay (E) ＊2 ＊3	E0 to E2047
	Timer contact (T) ＊3	T0 to T3017
	Counter contact (C) ＊3	C0 to C3071
	GOT bit register	GB132 to GB1023
Word device	Timer/counter elapsed value (EV)	EV0 to EV3071
	Timer/counter set value (SV)	SV0 to SV3071
	Data register (DT) ＊4	DT0 to DT16383
	Link register (LD) ＊1	LD0 to LD8447
	File register (FL) ＊1 ＊5	FL0 to FL32764
	GOT data register	GD100 to GD1023

＊1 Except the FP0.
＊2 Available for the FP2SH only.
＊3 Data cannot be written.
＊4 The special relays (R9000 to R910F) and special data registers (D9000 top D9255) are also included. For the FP2SH, however, access to the special data registers cannot be made.
＊5 For the FP2SH, access to only bank 0 can be made.

(10) Inverter (FREQROL series (A500 series, E500 series, F500 series))

Device name		Available range for setting/monitoring
Bit device	Control status (S)∗1	S0: □ to S7: □
Word device	Alarm code (A)∗1	A0: □ to A7: □
	Parameter (Pr)∗1	Pr000: □ to Pr993: □
	Program operation (PG)∗1	PG000: □ to PG89: □
	Special parameter (SP)∗1	SP108: □ to SP127: □

∗1 Set the station number in □ .

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4.5.4 Numeric Data that can be Handled with GOT

GOT supports and handles the following 7 types of numeric data.
- 16- or 32-bit signed binary (binary including a sign)
- 16- or 32-bit unsigned binary (binary including no sign)
- 16- or 32-bit BCD (Binary Coded Decimal)
- 32-bit real number (floating point data)

The range of each numeric data type is shown below.
The data range varies depending on the data length (16 or 32 bits).

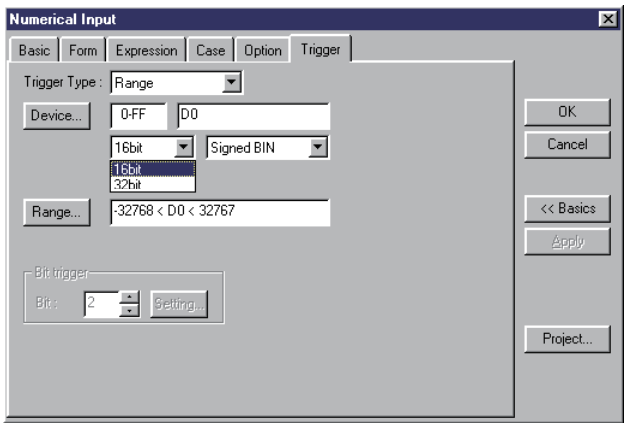
Data type	Data range	
	Data length: 16 bits	Data length: 32 bits
Signed BIN	-32768 to 32767	-2147483648 to 2147483647
Unsigned BIN	0 to 65535	0 to 4294967295
BCD	0 to 9999	0 to 99999999
Real number	Not used	Signed 13-digit notation (floating point format only) ∗1

∗1: The real number precision is given up to the sixth decimal place. The accuracy of the 7th and later decimal places cannot be guaranteed.
If a number having 7th and later digits is displayed on GOT, there are cases the displayed value differs from the value displayed on GX Developer.

Example:
When the value of a real number (floating point data) of the connected PLCs is 4.123
- Display on GX Developer : 4.123000
- Display on GOT (display of up to 6th digit) : 4.123000
- Display on GOT (display of up to 13th digit) : 4.1230001449585

For details of real number (floating point data), refer to the following.
QCPU User's Manual (Function Explanation, Program Fundamentals) (Section 3.9.4 Real numbers (floating decimal point data))

The following shows an example where the data length and data type are set on the Trigger tab in the Numerical Input.



MEMO

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CHAPTER5 OBJECT FUNCTIONS

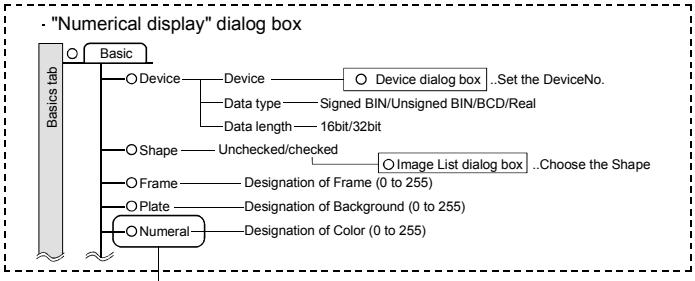
(1) About object item settings

Each object item has settings to be made to achieve function outline examples.
The settings given are specifically only the items where the default values of that object must be changed.

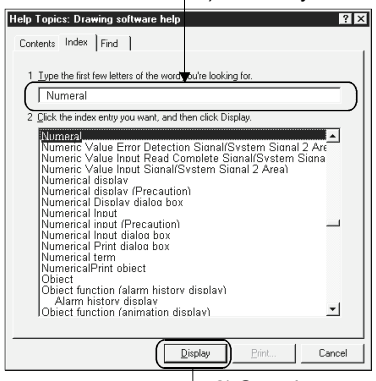
Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph : Sample Display mode : Locus	<Device/Attribute> tab	X axis Device: D100 Y axis Device: D200

(2) About setting item list

The items marked "○" in the setting item list of each object item are registered to the keyword function of the help.
By entering a keyword to make a search, you can directly display the explanation of the corresponding portion.

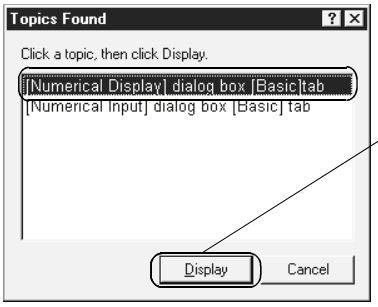


1) Enter keyword.



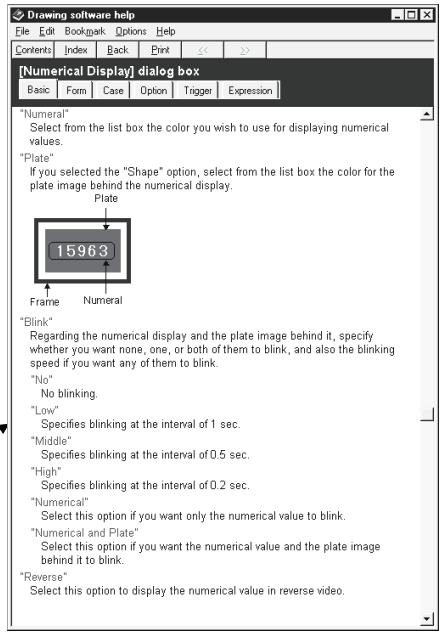
2) Search.

3) As a result of search, multiple candidates for the[Numeral] item appear.
Here, choose "Numeral" in [Numerical Display] dialog box.



4) Display.

Explanation of "Numeral" item in setting item list appears.



5.1 Data Display Functions

The data display functions show the PLC CPU's memory data in real time. They are available in the following types.

- Numerical display function.....Shows a numerical value.
- Data list display function.....Shows numerical values in tabular form.
- ASCII display function.....Shows a text.
- Clock display function.....Shows time.

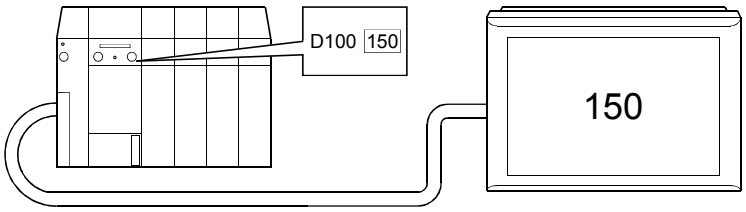
5.1.1 Numerical display function (shows word device data as a numerical value)

GOT-A900 series	○	GOT-F900 series	○

This function shows data stored in a PLC CPU device as a numerical value.

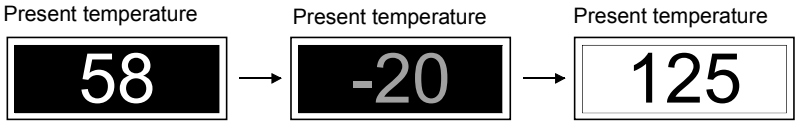
(1) Function outline

(a) Reads the data stored in a PLC CPU device to the GOT and displays it as a numerical value in real time.



Setting Portion	Settings
<Basic>tab	Device: D100

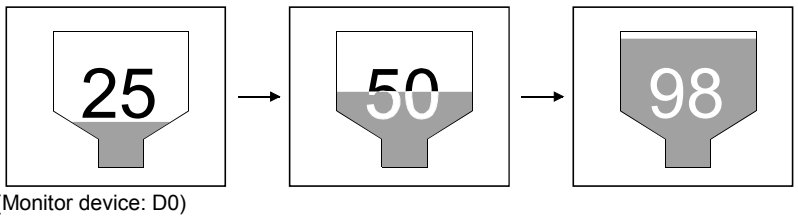
(b) Changes the displayed numerical color/background color according to the current value of a monitor device.



(Monitor device: D0)

Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Device : D0	<Case>tab	Case1: Defined case($V<0), Numeral: 3 Case2: Defined case(100<$V), Numeral: 0 Plate: 255

(c) Used with the level display function (refer to Section 5.4.6).
(Only when using the GOT-A900 series)



(Monitor device: D0)

Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Device: D0 Numeral: 0	<Option>tab	Display mode: XOR

POINT

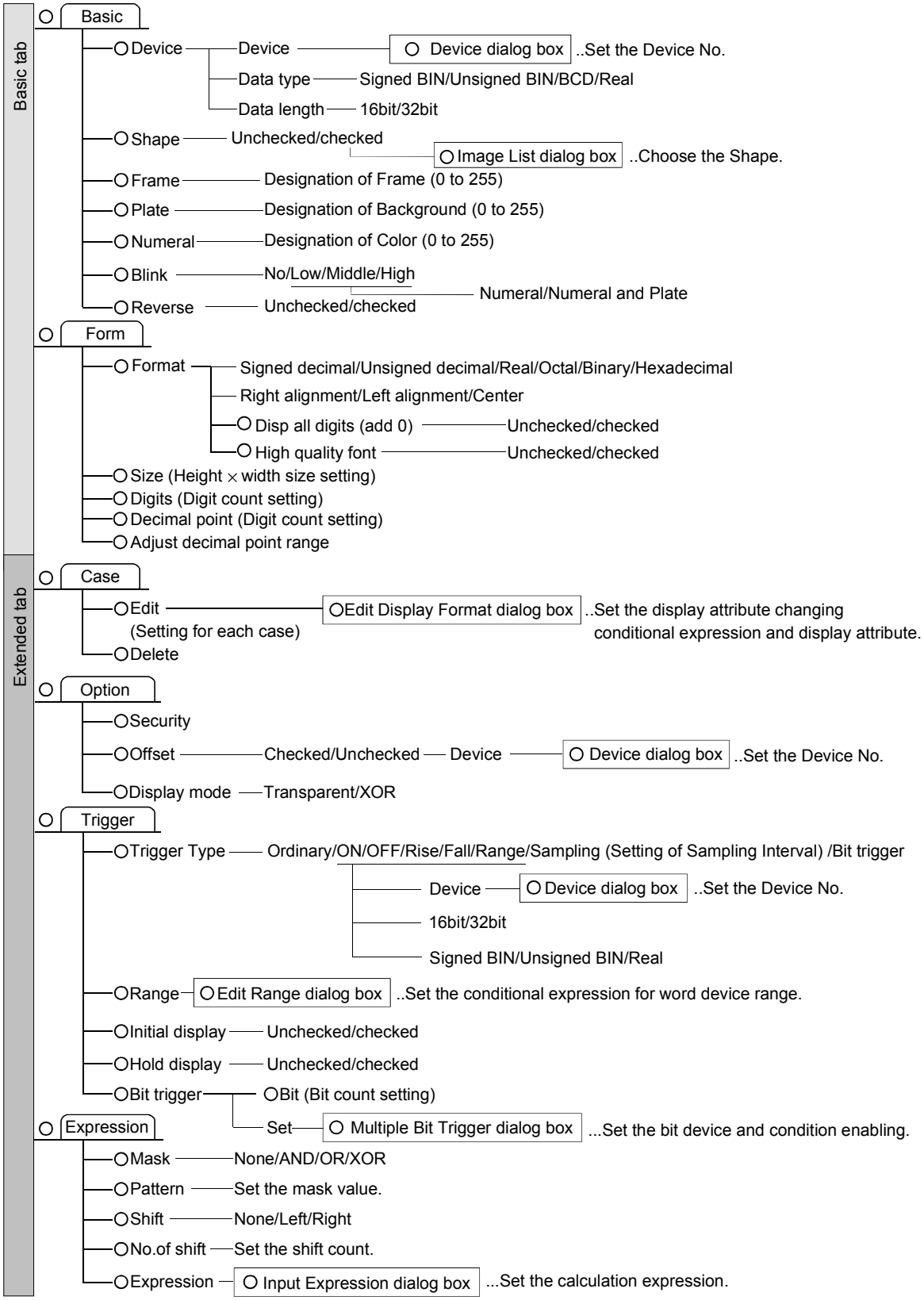
- The numerical display function allows only one value to be superimposed on one level indication provided by the level display function.
- A numerical value on a level indication does not blink (flicker).

(2) Setting items

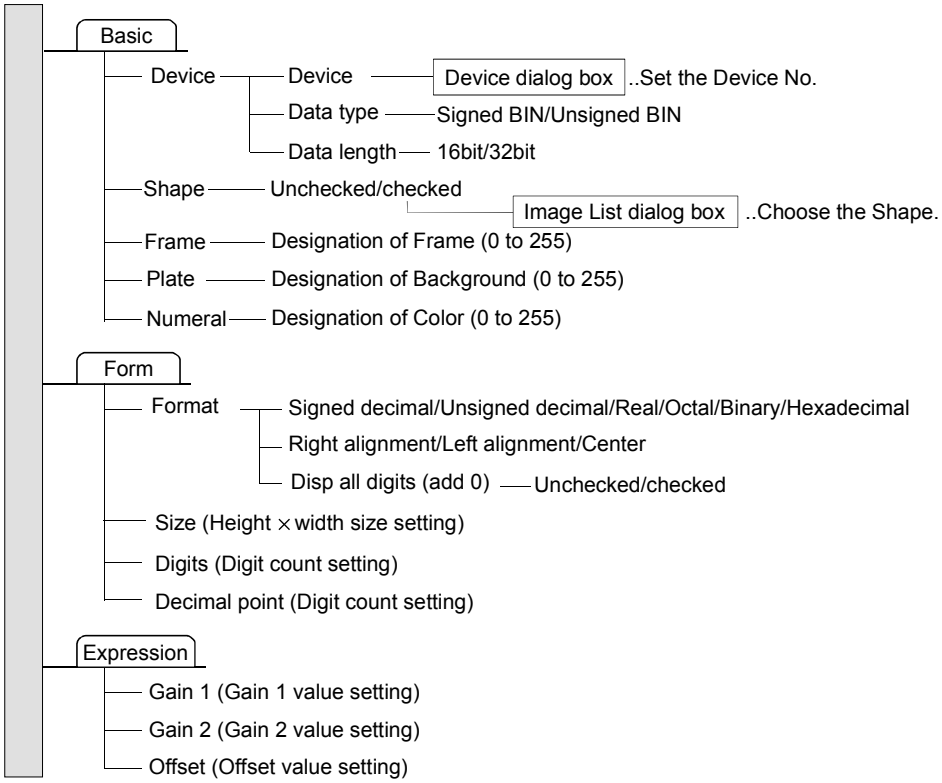
The numerical display function consists of the following setting items.

• "Numerical display" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up data display"→"Setting up numerical display" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security, offset and expression can be set.
- The display color and attributes can be changed according to the monitor device value or specified device status (ON/OFF, device value).
- The display can be superimposed on a level display or used for XOR display. Only one value may be superimposed on a level display.
- Values including decimal points can be displayed or calculated.

(2) When using the GOT-F900 series
- Expression can be set.

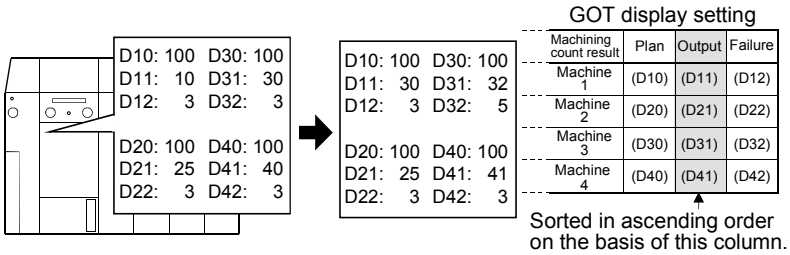
5.1.2 Data list display function (lists multiple word device states as numerical values)

GOT-A900 series	○	GOT-F900 series	×

This function gathers the states of multiple word devices periodically and lists them as numerical values.

(1) Function outline

(a) Sorts a list in the preset priority according to the states of the corresponding word devices (D11, D21, D31, D41).



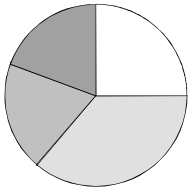
List is sorted every time the display is updated.

No.	Machining count result	Plan	Output	Failure
1	Machine 1	100	10	3
2	Machine 2	100	20	3
3	Machine 3	100	30	3
4	Machine 4	100	40	3

No.	Machining count result	Plan	Output	Failure
1	Machine 2	100	25	3
2	Machine 1	100	30	3
3	Machine 3	100	32	3
4	Machine 4	100	41	3

Setting Portion	Settings		Setting Portion	Settings
<Form>tab	Rows	: 4	<List>tab	Row1: Columns 2 Device(D10)
	Display rows	: 4		Row2: Columns 2 Device(D20)
	Columns	: 4		Row3: Columns 2 Device(D30)
	Sort:	: Ascending		Row4: Columns 2 Device(D40)
	Sort/Attr. column	: 3		Device: Random

(b) Using the data list display function and graph display (statistical graph in the example) together shows multiple device states effectively.



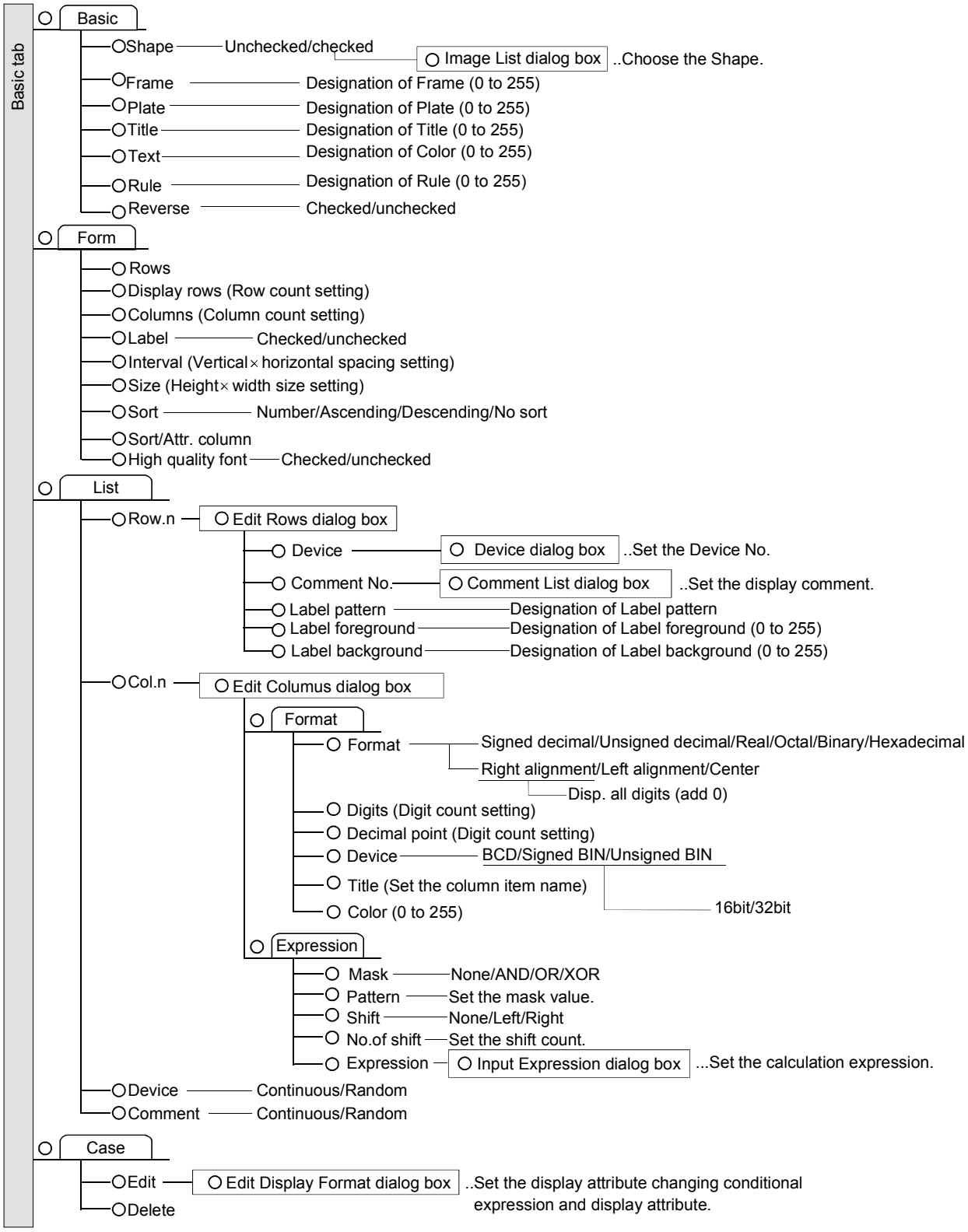
No.		Machine name	Target	Output
1		Machine 1	100	24
2		Machine 2	100	42
3		Machine 3	100	22
4		Machine 4	100	22

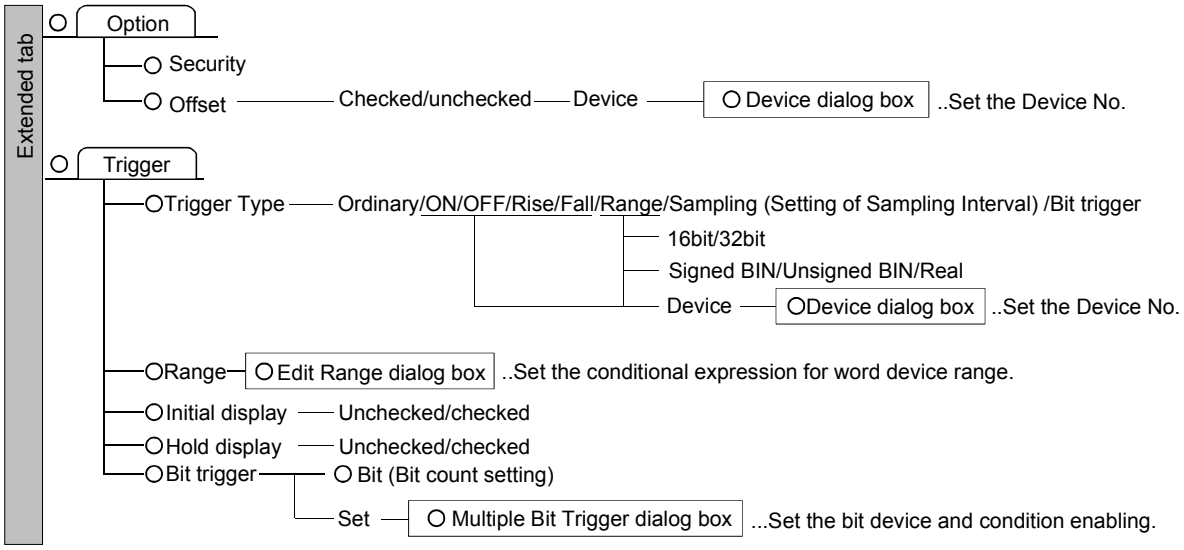
Setting Portion	Settings		Setting Portion	Settings
<Form>tab	Rows	: 4	<List>tab	Row1: Columns 2 Device (D10), Label foreground: 255 (White)
	Display rows	: 4		Row2: Columns 2 Device (D20), Label foreground: 224 (Red)
	Columns	: 3		Row3: Columns 2 Device (D30), Label foreground: 3 (Blue)
	Label	: 2		Row4: Columns 2 Device (D40), Label foreground: 252 (Yellow)
	Sort:	: Number		Device: Random
	Sort/Attr. column	: 3		＊: In a statistic graph, set the monitor devices and display colors to match the above.

(2) Setting items

The data list display function consists of the following setting items.

• "Data List" dialog box





(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up data display"→"Setting up data list display" from Contents of Help.

POINT

- Security and offset can be set.
- Display Label rows can be set. Combining the label rows and statistical or bar graphs makes effective display.
- Display sequence can be sorted in the ascending or descending order of number or device values.
- Display color and attributes can be changed when the monitor device value reaches the specified value.

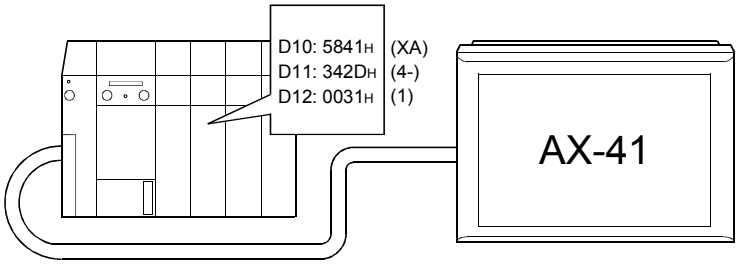
5.1.3 ASCII display function (shows data stored consecutively within devices as a character string)

GOT-A900 series	○	GOT-F900 series	○

This function regards the data stored consecutively in word devices as text data (ASCII code) and shows them as a character string.

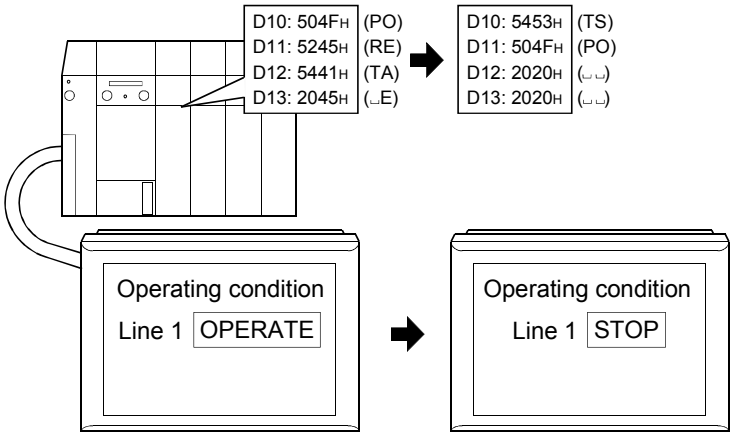
(1) Function outline

(a) Recognizes the data stored consecutively within the corresponding word devices (D10 to D14) as text data and shows them as a character string on the GOT.



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Device: D10	<Form>tab	Size : 8 × 8 Digits : 5

(b) Updates the characters according to the condition with the monitor device value changed from a peripheral device, sequence program or the like.



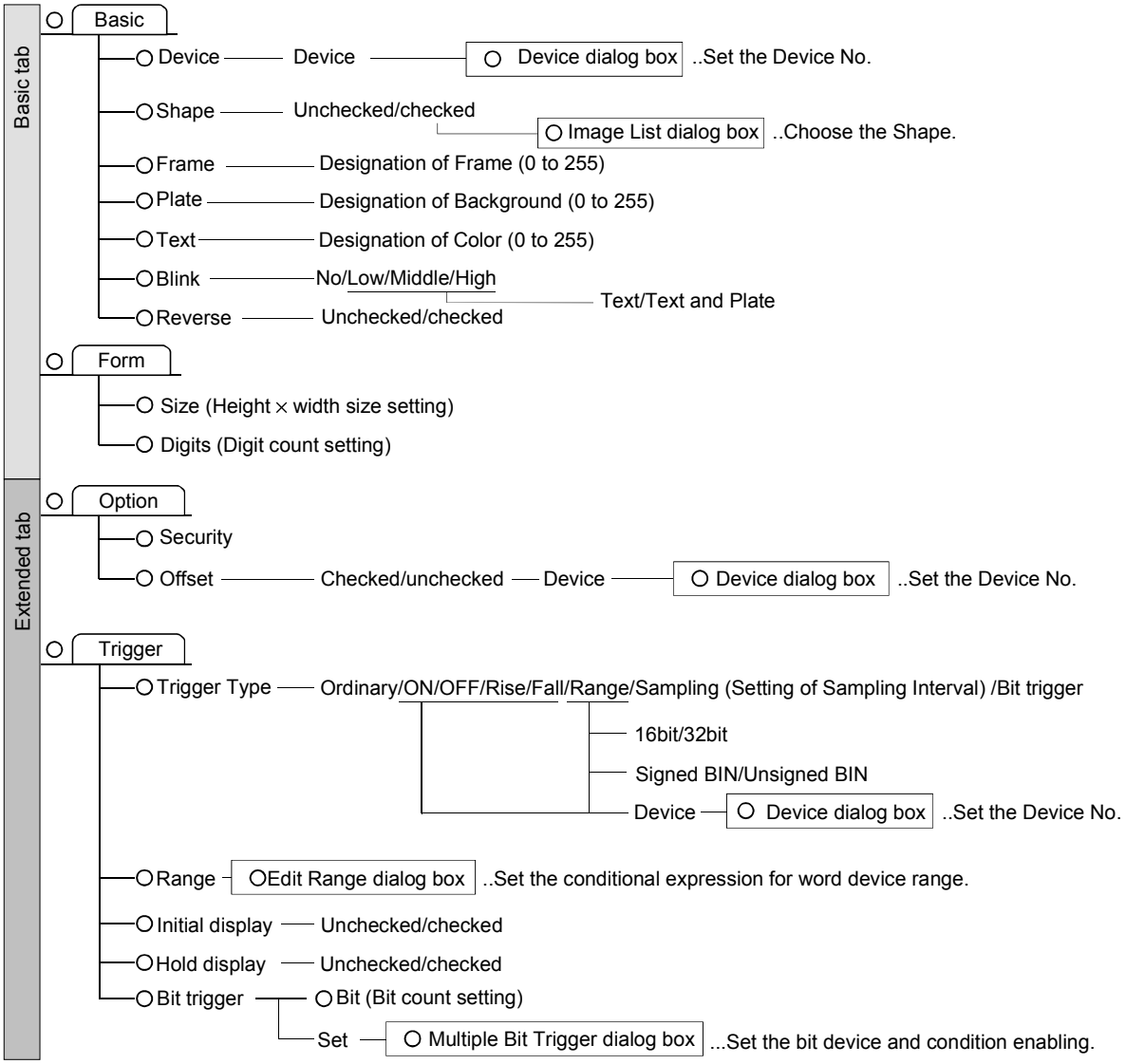
Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Device: D10	<Form>tab	Digits: 8

(2) Setting items

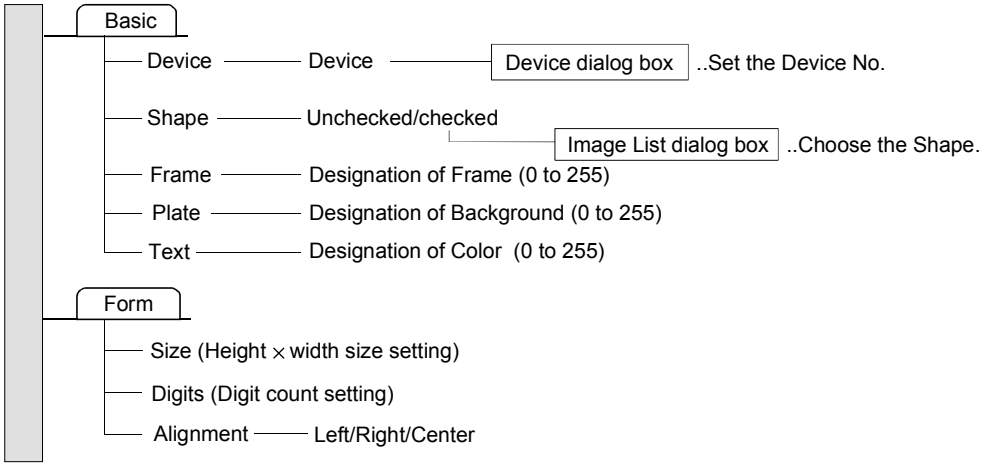
The ASCII display function consists of the following setting items.

• "ASCII display" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up data display"→"Setting up ASCII display" from Contents of Help.

POINT
(1) When using the GOT-A900 series • Security and offset can be set.

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5.1.4 Clock display function (reads and shows clock data of PLC CPU)

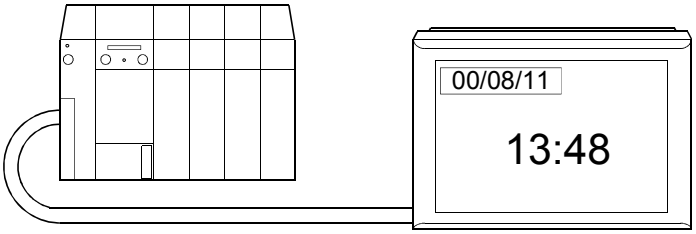
GOT-A900 series	○	GOT-F900 series	○

This function displays the PLC CPU's clock data (GOT-A900 series) or GOT's built-in clock data (GOT-F900 series) on the GOT.

(1) Function outline

(a) When using the GOT-A900 series

The clock data of the PLC CPU is read and displayed at power-on, and thereafter, the clock data of the PLC CPU is read every hour.
Between when the clock data is read from the PLC CPU and when the clock data is read next, the time counted in the GOT is displayed.
Either the date or time can be displayed.
(When GT SoftGOT is used, the clock data of the personal computer is displayed in real time.)



1) Clock display object (date indication)

Setting Portion	Settings
<Basic>tab	Display style: Date Shape: checked
<Form>tab	Data format: yy/mm/dd

2) Clock display object (time indication)

Setting Portion	Settings
<Basic>tab	Display style: Time

POINT

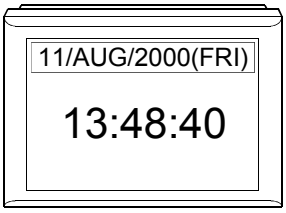
The GOT reads the clock data of the PLC CPU once an hour. If the clock data of the PLC CPU is changed, therefore, the clock indication of the GOT may not be updated for an hour at the longest.

REMARK

- When the date is selected, the year is displayed as the two lower digits of the year.
- When the time is selected, the time is displayed on a 24-hour basis.

(b) When using the GOT-F900 series

Shows the GOT's built-in clock data.
Either the date or time can be displayed.



1) Clock display object (date indication)

Setting Portion	Settings
<Basic>tab	Display style: Date Shape: checked
<Form>tab	Data format: Type1

2) Clock display object (time indication)

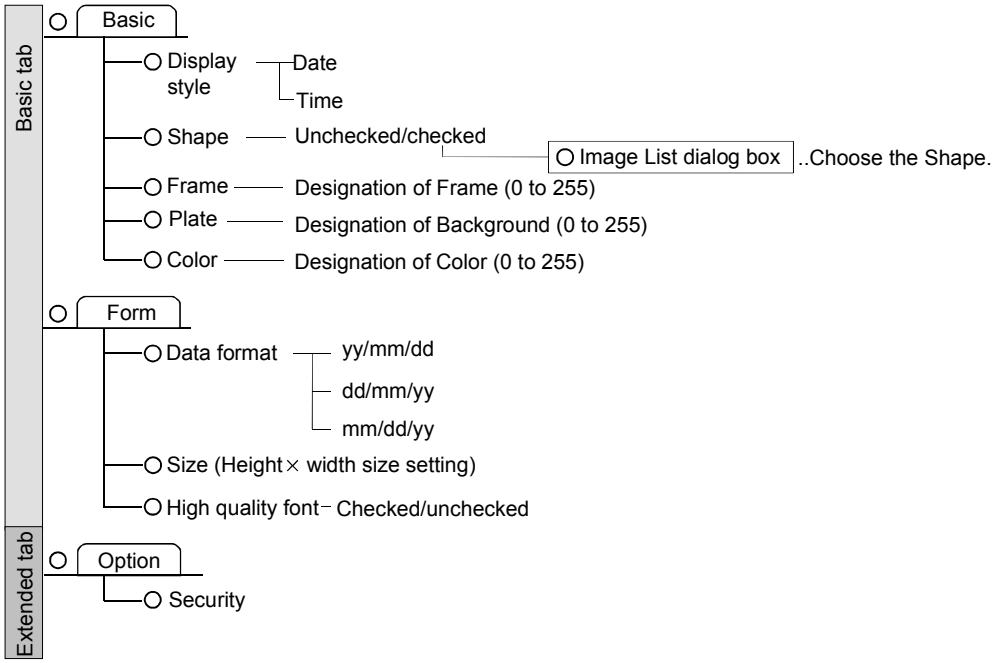
Setting Portion	Settings
<Basic>tab	Display style: Time
<Form>tab	Data format: Type1

(2) Setting items

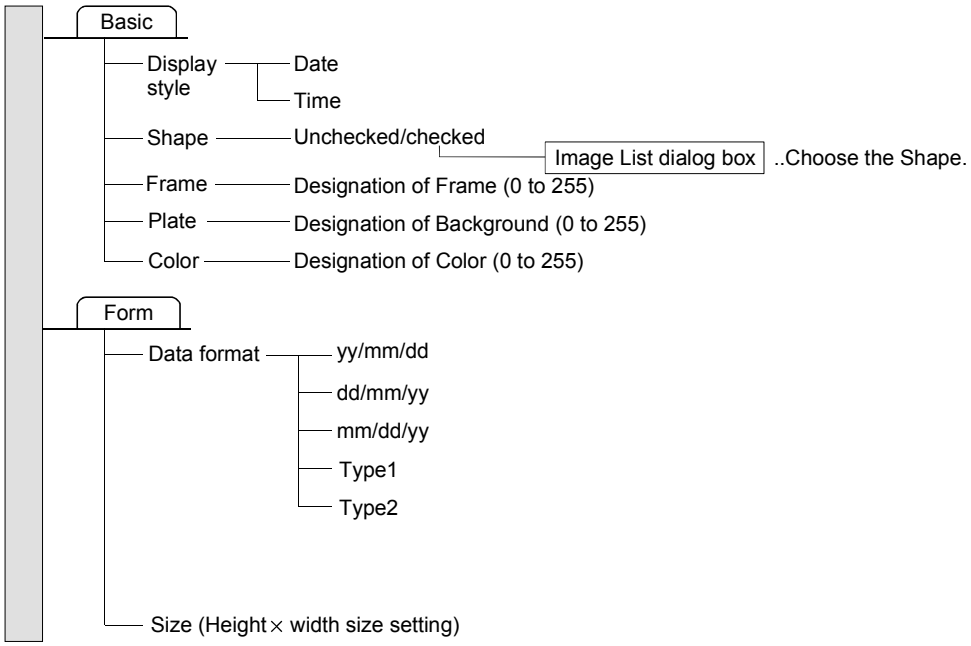
The clock display function consists of the following setting items.

• "Clock" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up data display"→"Setting up clock display" from Contents of Help.

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5.2 Message Display Functions

The message display functions show comments or error messages corresponding to the PLC CPU status.
They are available in the following types.
• Comment display function .....Shows a comment corresponding to a device state.
• Alarm history display function....Shows occurrence times and comments when condition is enabled.
• Alarm list display function .....Shows error messages or comments in list form.

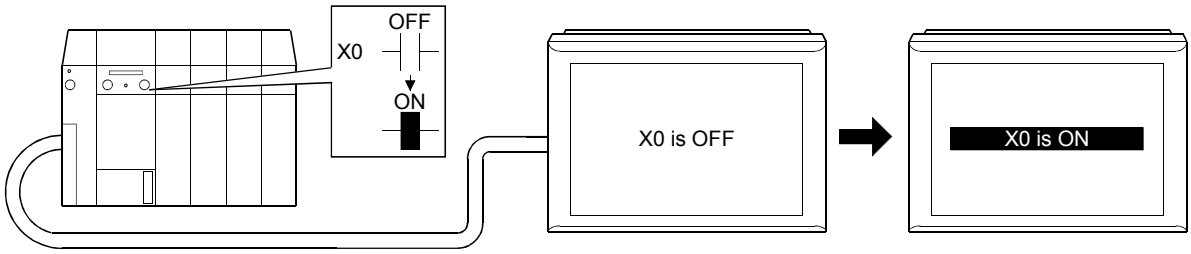
5.2.1 Comment display function (shows a comment corresponding to ON/OFF or value of monitor device)

GOT-A900 series	○	GOT-F900 series	○

This function shows a comment corresponding to ON/OFF of a bit device or the specified range of a word device.

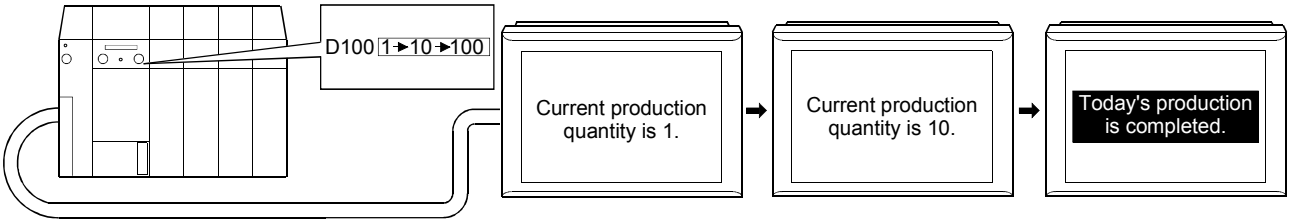
(1) Function outline

(a) Shows a comment corresponding to ON/OFF of a bit device (X0).



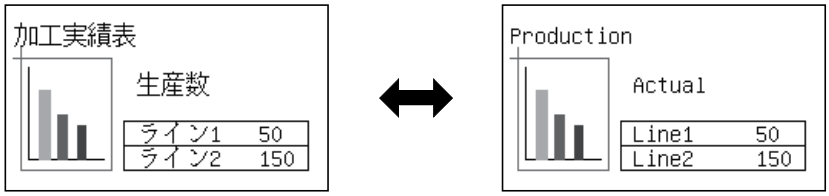
Setting Portion	Settings
<Basic>tab	Device: X0

(b) Shows a comment corresponding to the value of a word device (D100). When the GOT-F900 series is used, this function shows the comment of the comment number equal to the value of the word device (D100).



Setting Portion	Settings
<Basic>tab	Device: D100

(c) Changes the entire on-screen comment display according to ON/OFF of the bit device (X0). (Example: Changing between Japanese and English)



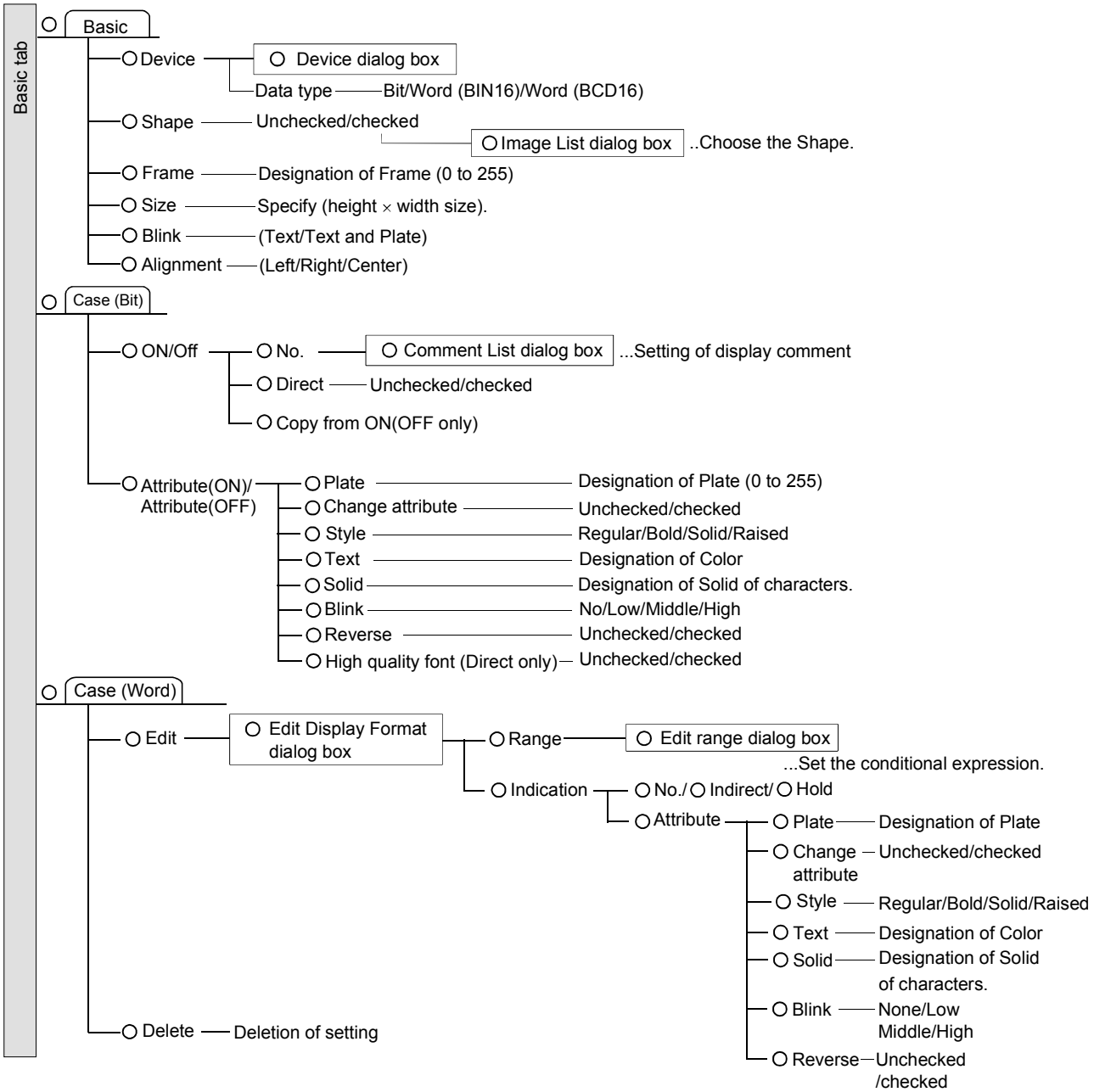
Setting Portion	Settings
<Basic>tab	Device: X0(Set the same device to all objects)
<Case(Bit)>tab	ON time setting : Direct(Enter comment data in Japanese) OFF time setting : Direct(Enter comment data in English)

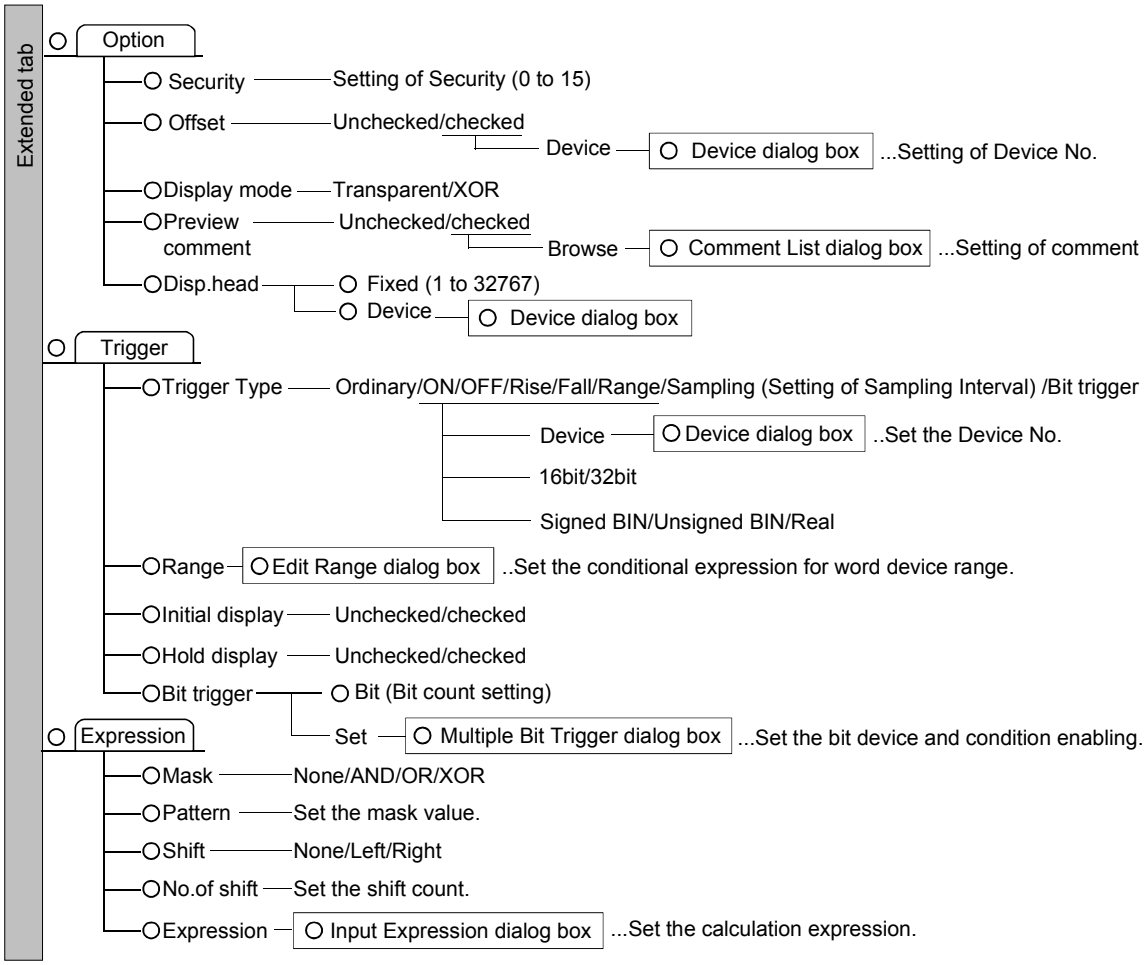
(2) Setting items

The comment display function consists of the following setting items.

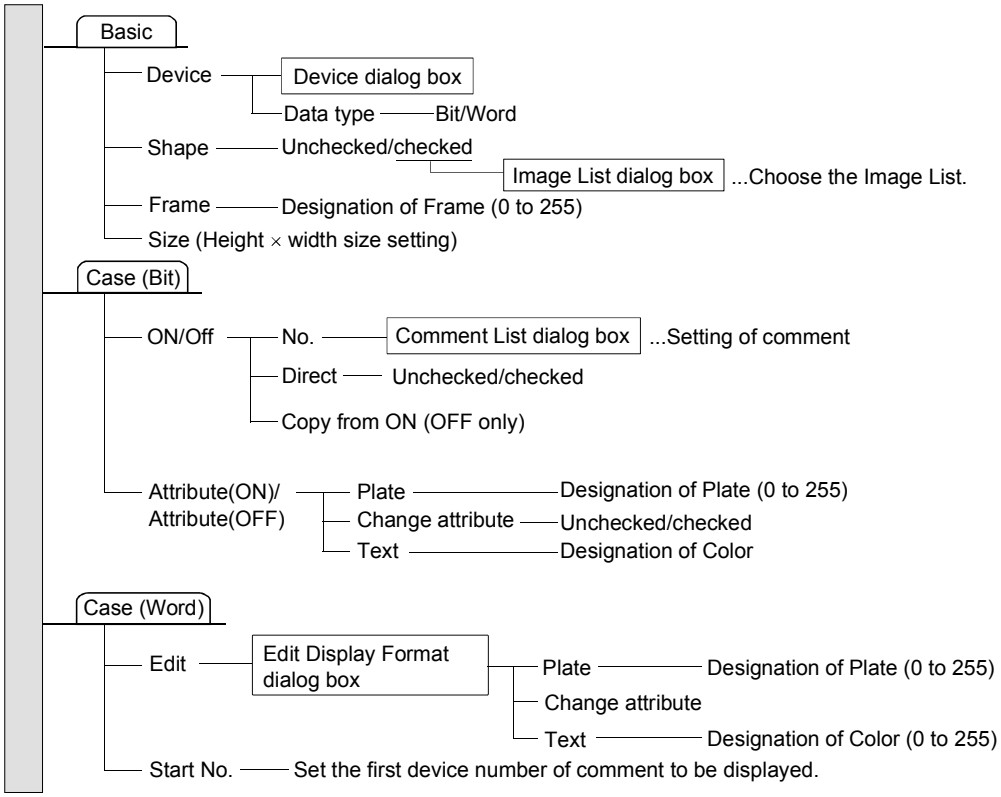
• "Comment Display" dialog box

(a) When using the GOT-A900 series




Extended tab
Option
Security
Setting of Security (0 to 15)
Offset
Unchecked/checked
Device
Device dialog box
...Setting of Device No.
Display mode
Transparent/XOR
Preview comment
Unchecked/checked
Browse
Comment List dialog box
...Setting of comment
Disp.head
Fixed (1 to 32767)
Device
Device dialog box
Trigger
Trigger Type
Ordinary/ON/OFF/Rise/Fall/Range/Sampling (Setting of Sampling Interval) /Bit trigger
Device
Device dialog box
..Set the Device No.
16bit/32bit
Signed BIN/Unsigned BIN/Real
Range
Edit Range dialog box
..Set the conditional expression for word device range.
Initial display
Unchecked/checked
Hold display
Unchecked/checked
Bit trigger
Bit (Bit count setting)
Set
Multiple Bit Trigger dialog box
...Set the bit device and condition enabling.
Expression
Mask
None/AND/OR/XOR
Pattern
Set the mask value.
Shift
None/Left/Right
No.of shift
Set the shift count.
Expression
Input Expression dialog box
...Set the calculation expression.

(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up message display"→"Setting up comment display" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security and offset can be set.
- Comment can be displayed on multiple lines in the display area.
- Multiple line comments can be displayed.
- Display color and attributes of a comment can be changed when the monitor device (bit) value turns ON/OFF.
- The display can be superimposed on a level display or used for XOR display. Refer to Section 4.4.2 for superimposing on the level display function.

5.2.2 Alarm history display function (shows a history of occurrence times, comments and others when a condition is enabled)

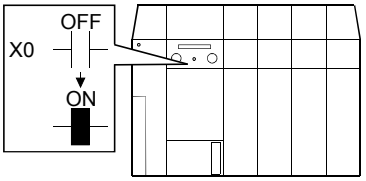
GOT-A900 series	○	GOT-F900 series	○

This function shows as history data the occurrence times, comments and other information when the specified bit device turns on or the condition of a word device value is enabled.

(1) Function outline

(a) Error history display

Shows a history list of dates and times, messages and others when a device is confirmed to have turned on (error occurrence). (On the GOT-F900 series, shows only the occurrence dates and times, messages and occurrence counts.)



OCCURRED	MESSAGE	RESTORED	CHECKS	CUMLAT	COUNT
98/06/01 10:25	Conveyor 1 error	11:25	10:45	01:00	1
98/06/01 12:05	Conveyor 2 error	12:40	12:28	00:20	5
98/06/01 12:35	Conveyor 3 error	13:20	12:50	00:15	2

∗ Shows the history when the monitor device turns on.

Setting Portion		Settings
Alarm History (Common) dialog box	<Basic>tab	Mode: Cumulation
	<Monitor Device>tab	Delete No.: Continuous, Comment No.: Continuous, Device: X10
Alarm History (Form) dialog box	<Form>tab	Display style: Occurences, Restorations, Checks, Cumulative, Occur frequency

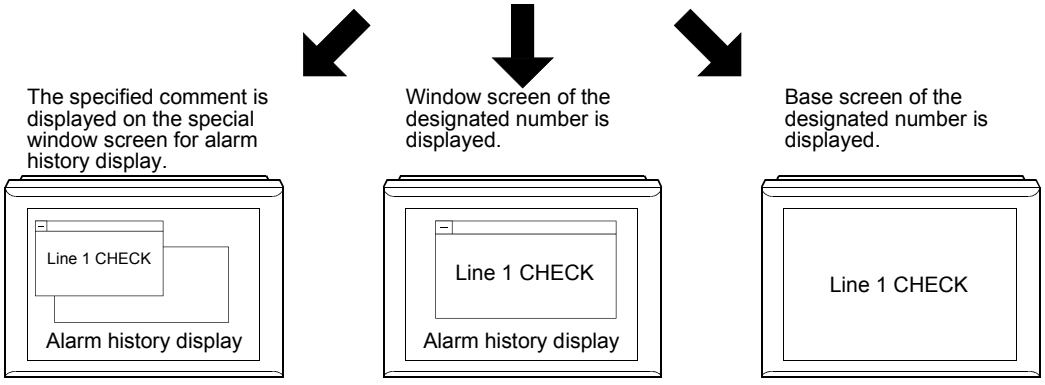
(b) Error detail display (only when the GOT-A900 series is used)

Details and action for the comment turned on (when an error occurred) can be displayed on the base window, window screen or comment window.

OCCURRED	MESSAGE	RESTORED	CHECKS
98/06/01 10:25	Line 1 error	11:25	10:45
98/06/01 12:05	Line 2 error		12:28
98/06/01 12:35	Line 3 error		

Move upward | Detailed display | Delete display

Detailed display screen appears by one touch/touch key entry.
∗ When detail display is provided by one touch, the above message selection cursors do not appear.



Register as comments the detailed contents and corrective actions for when the specified devices turn to ON status.

Display on the specified window screen or base screen the detailed contents and corrective actions for when the specified devices turn to ON status.

Setting Portion		Settings
Alarm History (Common) dialog box	<Basic>tab	Detailed display: Comment window/Window screen/Base Screen

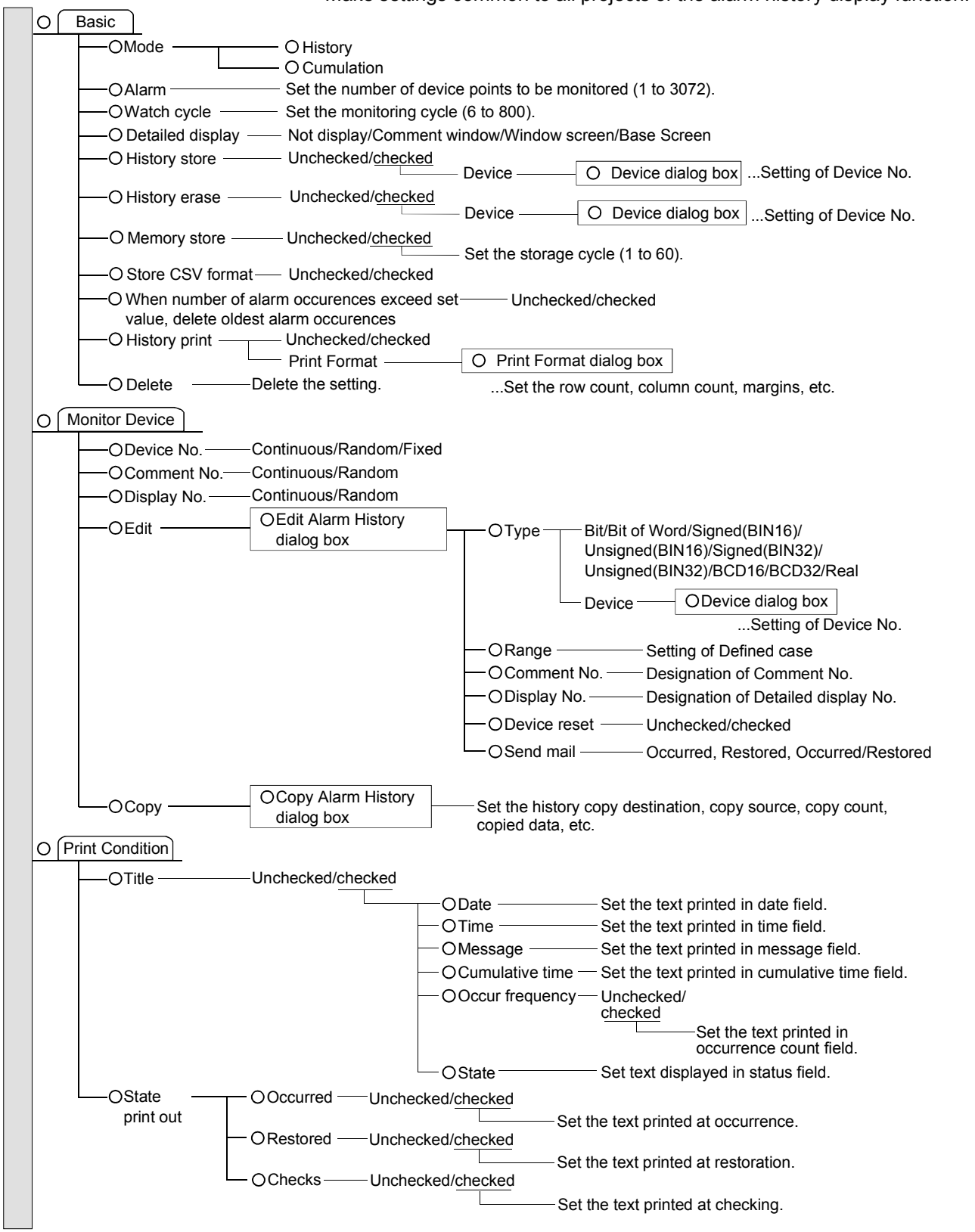
(2) Setting items

The alarm history display function consists of the following setting items.

(a) When using the GOT-A900 series

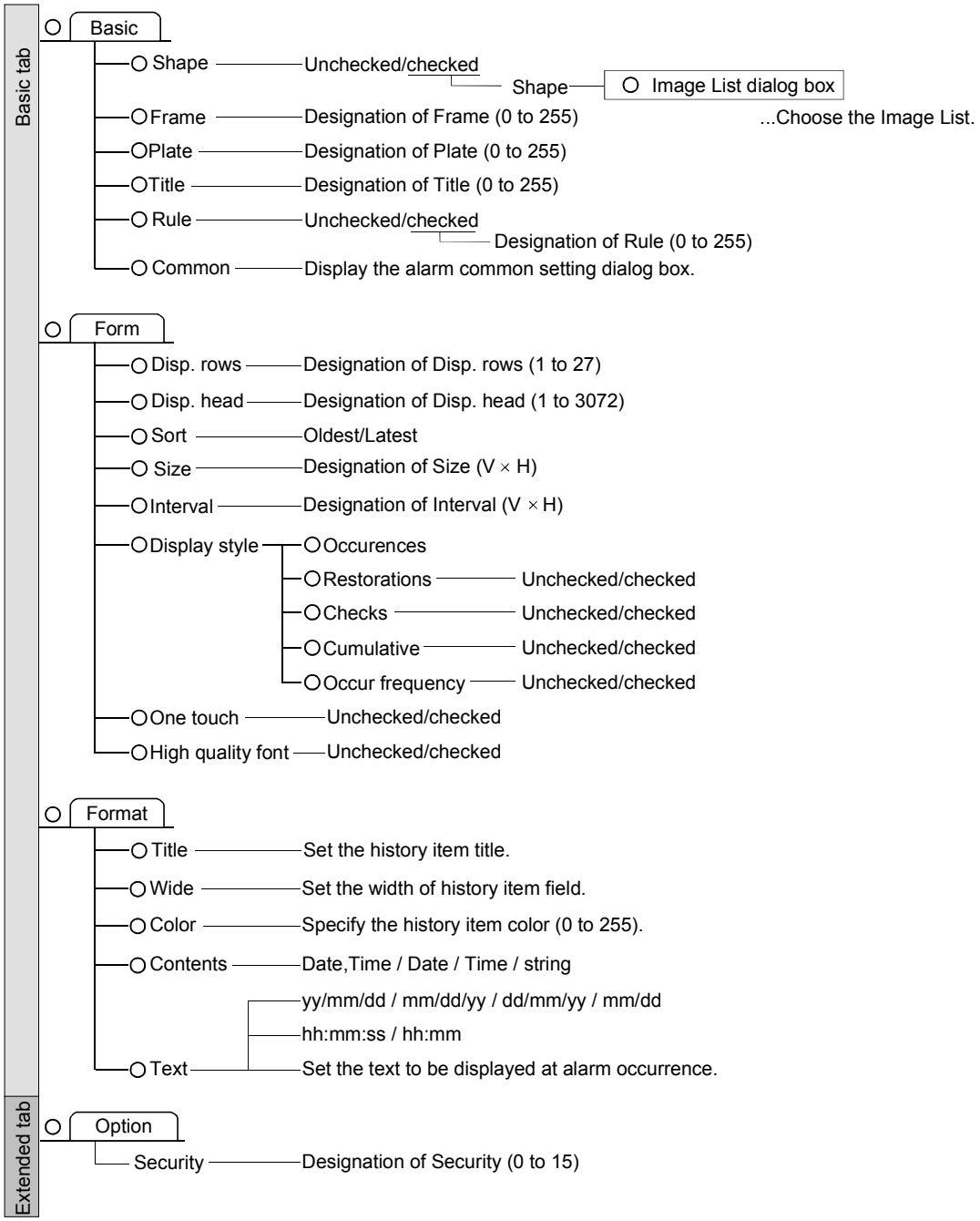
• "Alarm History (Common)" dialog box

Make settings common to all projects of the alarm history display function.



• "Alarm History (Form)" dialog box

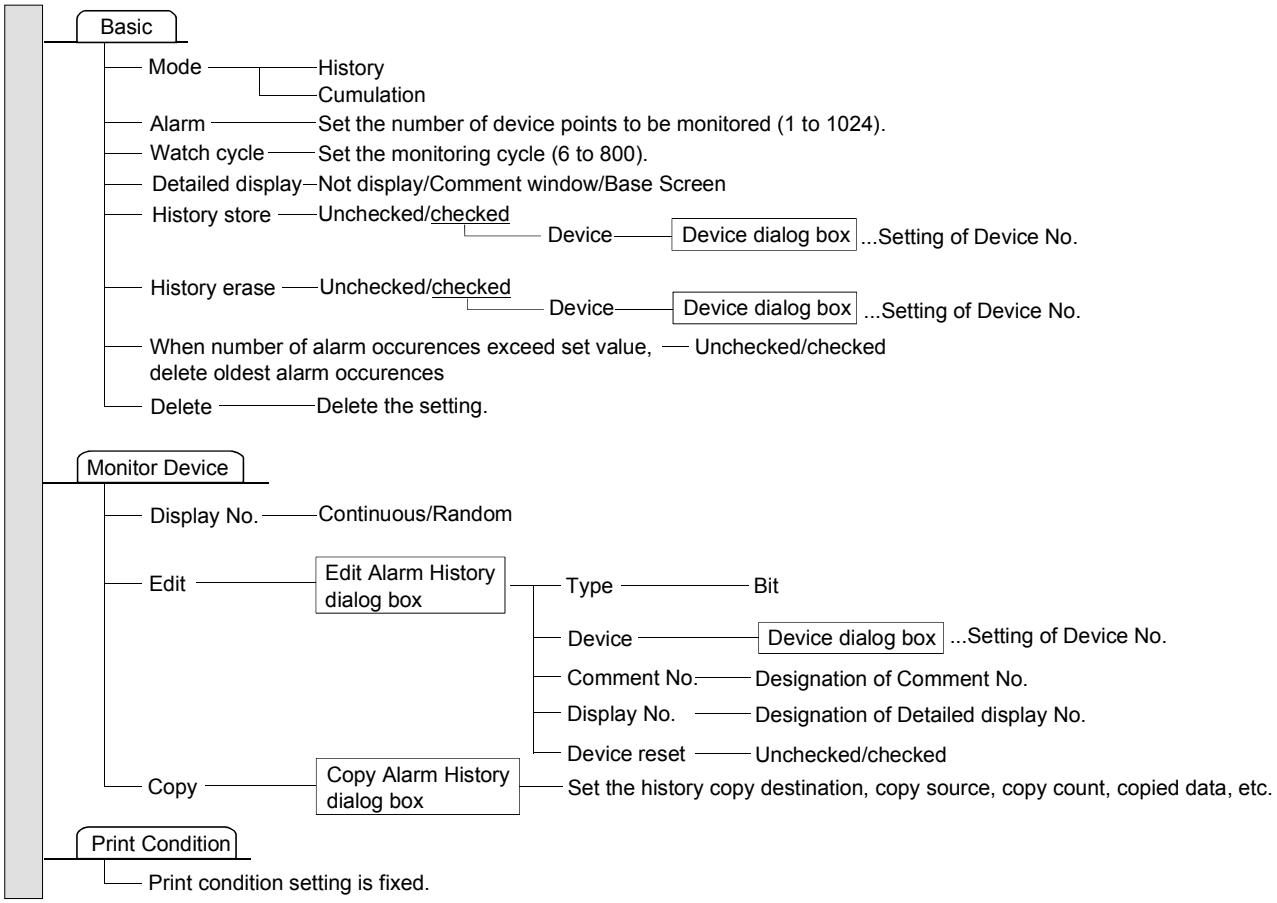
Make settings to each screen of the alarm history display function.



(b) When using the GOT-F900 series

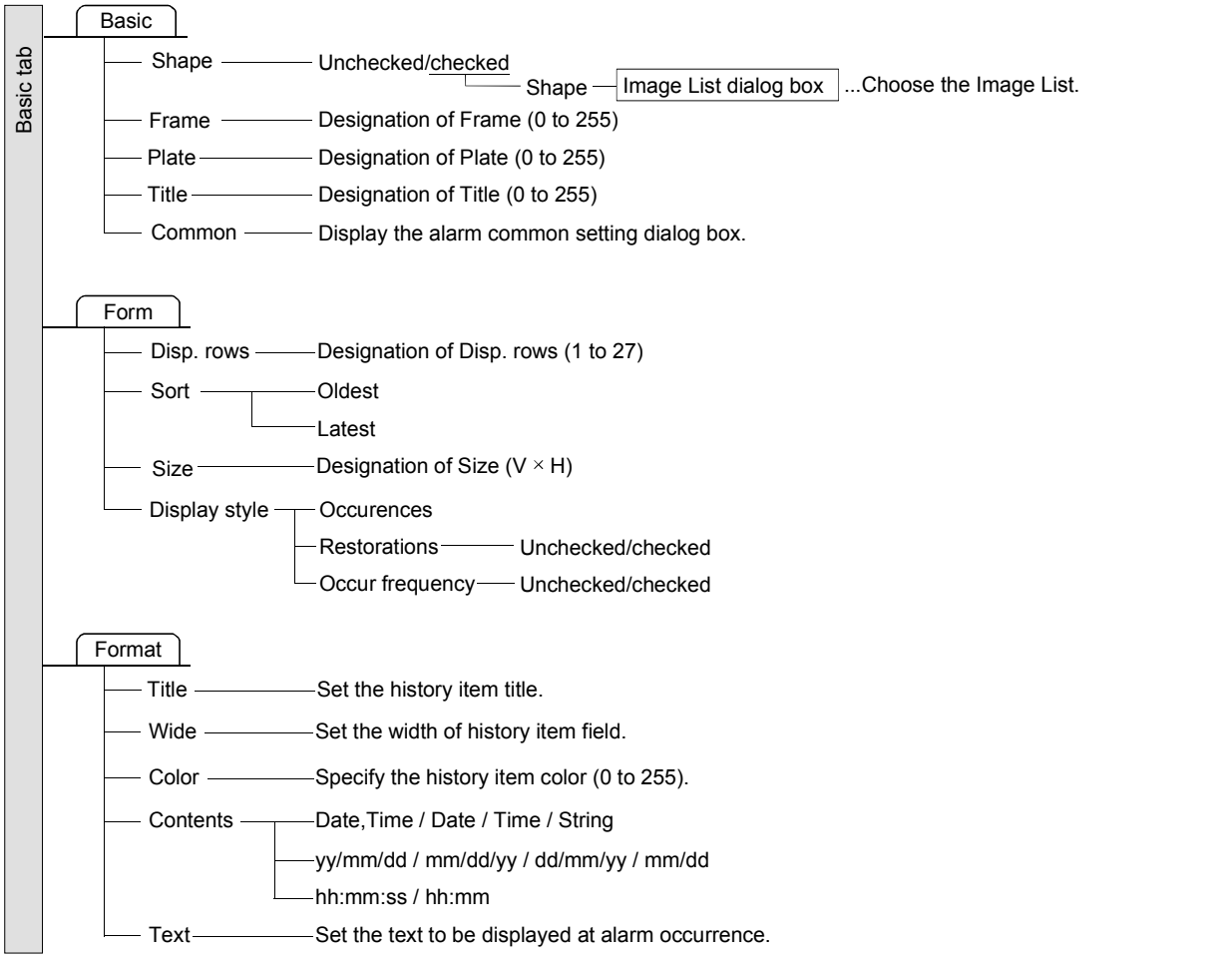
• "Alarm History (Common)" dialog box

Make settings common to all projects of the alarm history display function.



• "Alarm History (Form)" dialog box

Make settings to each screen of the alarm history display function.



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(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up alarm history display"→"Setting up alarm history display" from Contents of Help.

POINT

(1) When using the GOT-A900 series

- Security can be set.
- By using the PC card, the history data can be backed up.
- The ladder monitor function can be started while the device corresponding to the one which turned ON or fell within the designated range is being searched.
- Alarm history can be printed out.
- The current number of alarm history data can be stored into the designated word device.
- The display for the restored device can be deleted using the designated bit device as trigger.
- When the specified bit device/word device turns on (at error occurrence, for example)/off (at restoration), the date and time of occurrence/restoration, comment and others can be sent as electronic mail.
- For details of the mail send function, refer to the following corresponding manual.
  - When GOT is used : GOT-A900 Series Operating Manual (GT Works Version5/GT Designer Version5 Compatible Gateway functions)
  - When GT SoftGOT is used : GT SoftGOT Version 5 Operating Manual
- For restrictions on the alarm history display function, refer to Section 4.3.1.

(2) When using the GOT-F900 series

- The current status of the alarm history display can be printed out.
- The number of errors entered into the monitoring devices can be stored.

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5.2.3 Alarm list display function (shows the error information of the system at error occurrence)

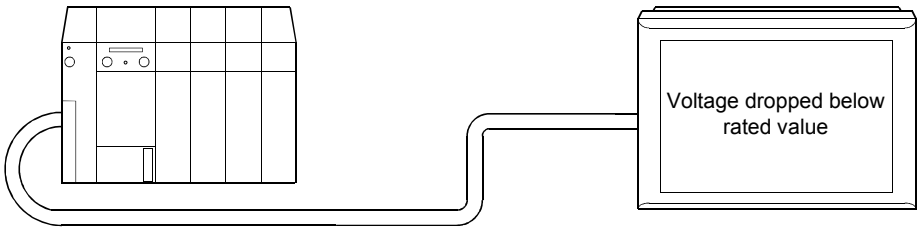
GOT-A900 series	○	GOT-F900 series	○

This function shows error information at error occurrence or shows comments corresponding to multiple devices in priority order.

(1) Function outline

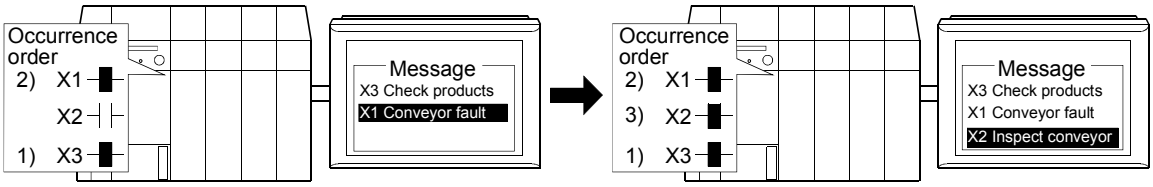
(a) Shows error information at error occurrence. (Only when the GOT-A900 series is used)

Monitors GOT/PLC CPU/MELSECNET communication at intervals of three seconds to check for errors, and shows an error code or error message at error occurrence. You need not create error messages and numbers as they are registered in the GOT. (Occurrence time is also displayed at occurrence of a GOT error.) Use this function to detect PLC CPU/MELSECNET communication errors.



Setting Portion	Settings
<Basic>tab	Type: System

(b) Shows comments corresponding to multiple bit devices, which are ON, in the specified priority order (order of ascending ON bit device numbers for the GOT-F900 series).



Setting Portion	Settings
<Basic>tab	Type: User
<Form>tab	Device points: 4 Device: X1 Continuous: checked

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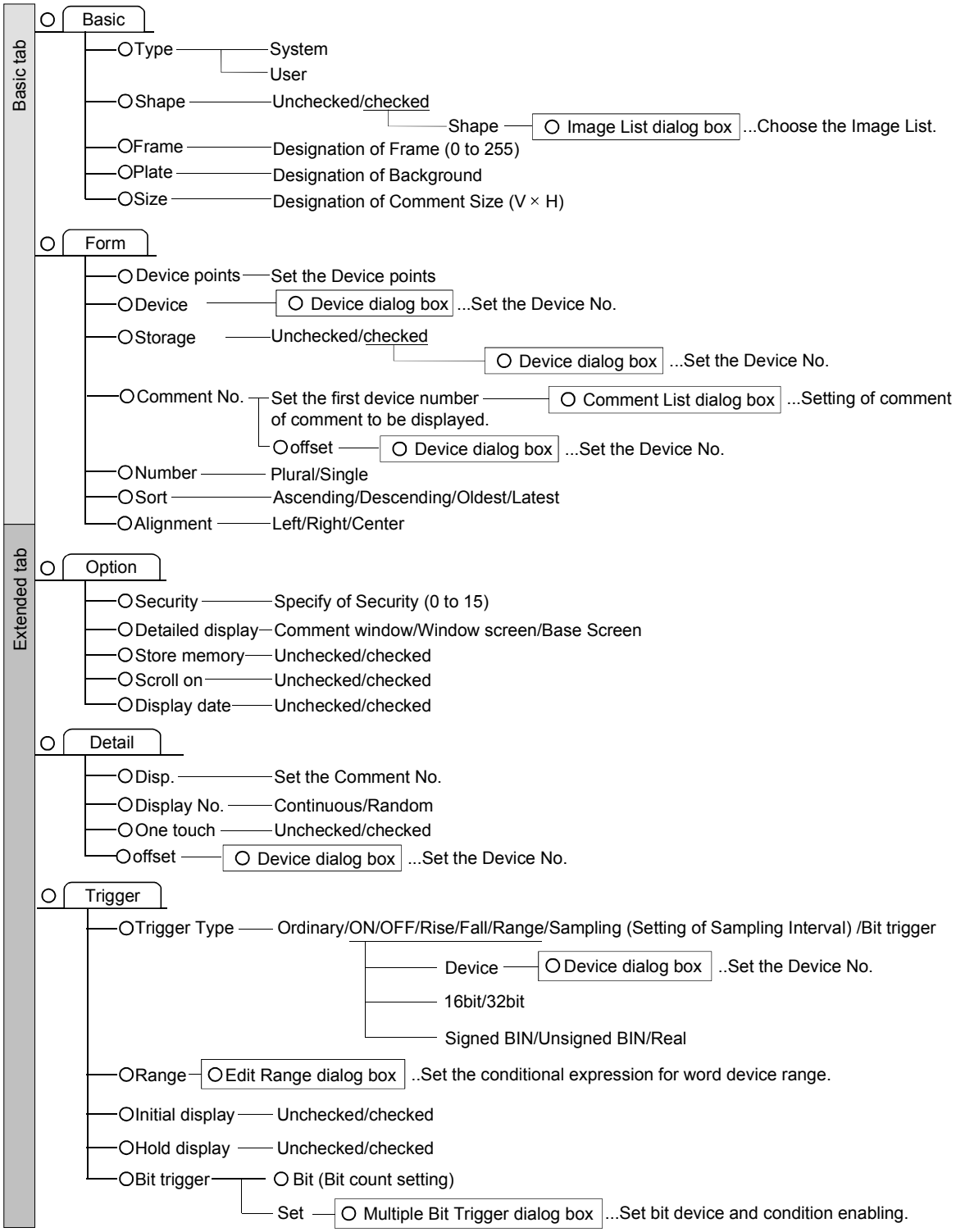
(2) Setting items

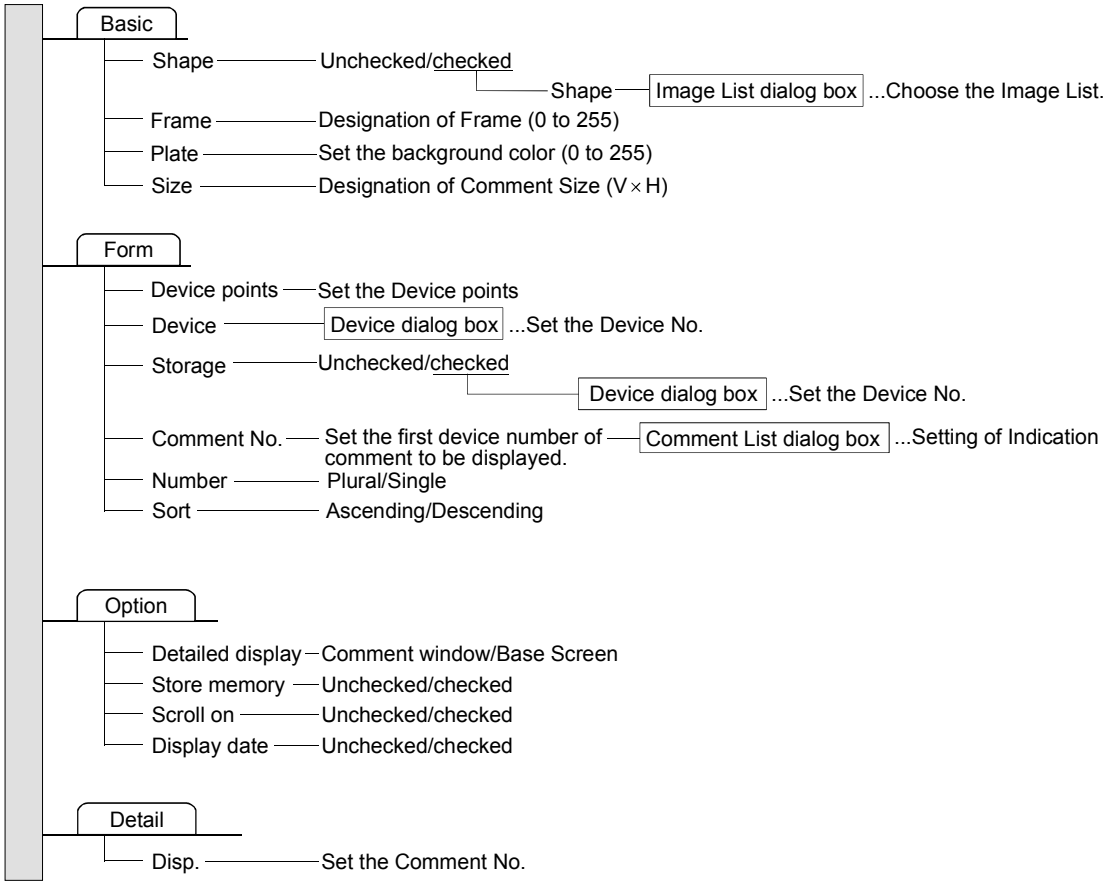
The alarm list display function consists of the following setting items.

• "Alarm List" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up message display"→"Setting up alarm list display (system alarms/user alarms)" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security can be set.
- Priority can be displayed in the order of occurrence/number.
- Multiple or single comments can be displayed in the order of priority.
- A comment can be displayed on multiple lines in the display area. (If single comment is selected for display)
- The GOT can count the bit devices turned ON and store the count in the word device.
- Details and actions for the comment turned ON can be displayed on the base screen, window screen or comment window.
- The ladder monitor function screen can be activated while the device corresponding to the bit device turned ON is being searched.

(2) When using the GOT-F900 series
- A comment can be displayed on multiple lines in the display area. (If single comment is selected for display)
- The number of bit devices which are now ON can be stored.

5.3 Animation Display Functions

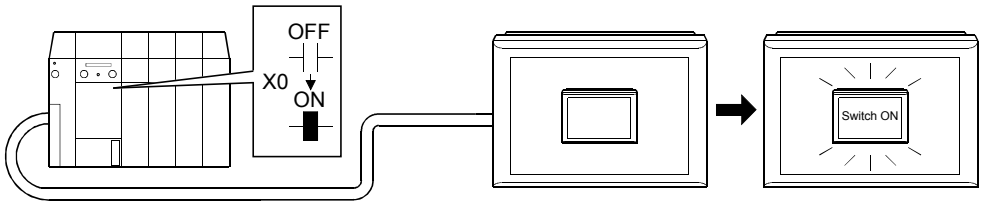
5.3.1 Part display function (shows a part/screen corresponding to a device)

GOT-A900 series	○	GOT-F900 series	○

This function shows a registered part/screen corresponding to a device.
(Screen display is provided only when the GOT-A900 series is used)

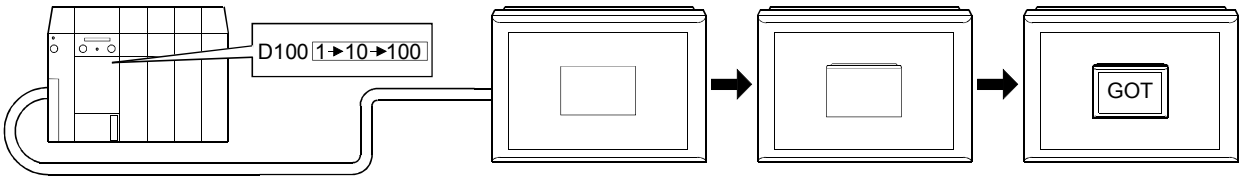
(1) Function outline

(a) Shows a part corresponding to ON/OFF of a bit device (X0).



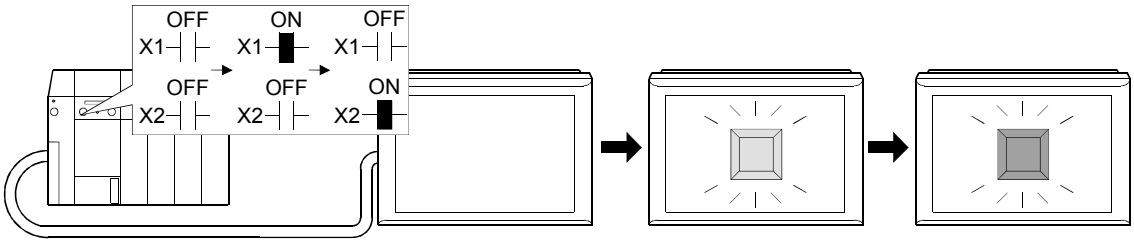
Setting Portion	Settings
<Basic>tab	Device: X0
<Case(Bit)>tab	ON Part No.: 1 OFF Part No.: 2

(b) Shows a part corresponding to ON/OFF of a word device (D100).



Setting Portion	Settings
<Basic>tab	Device: D100
<Case(Word)>tab	Range: $V==1 Indicate Part No.: 1 Range: $V==10 Indicate Part No.: 2 Range: $V==100 Indicate Part No.: 3

(c) Shows the specified part according to ON/OFF of a bit device (X1, X2).



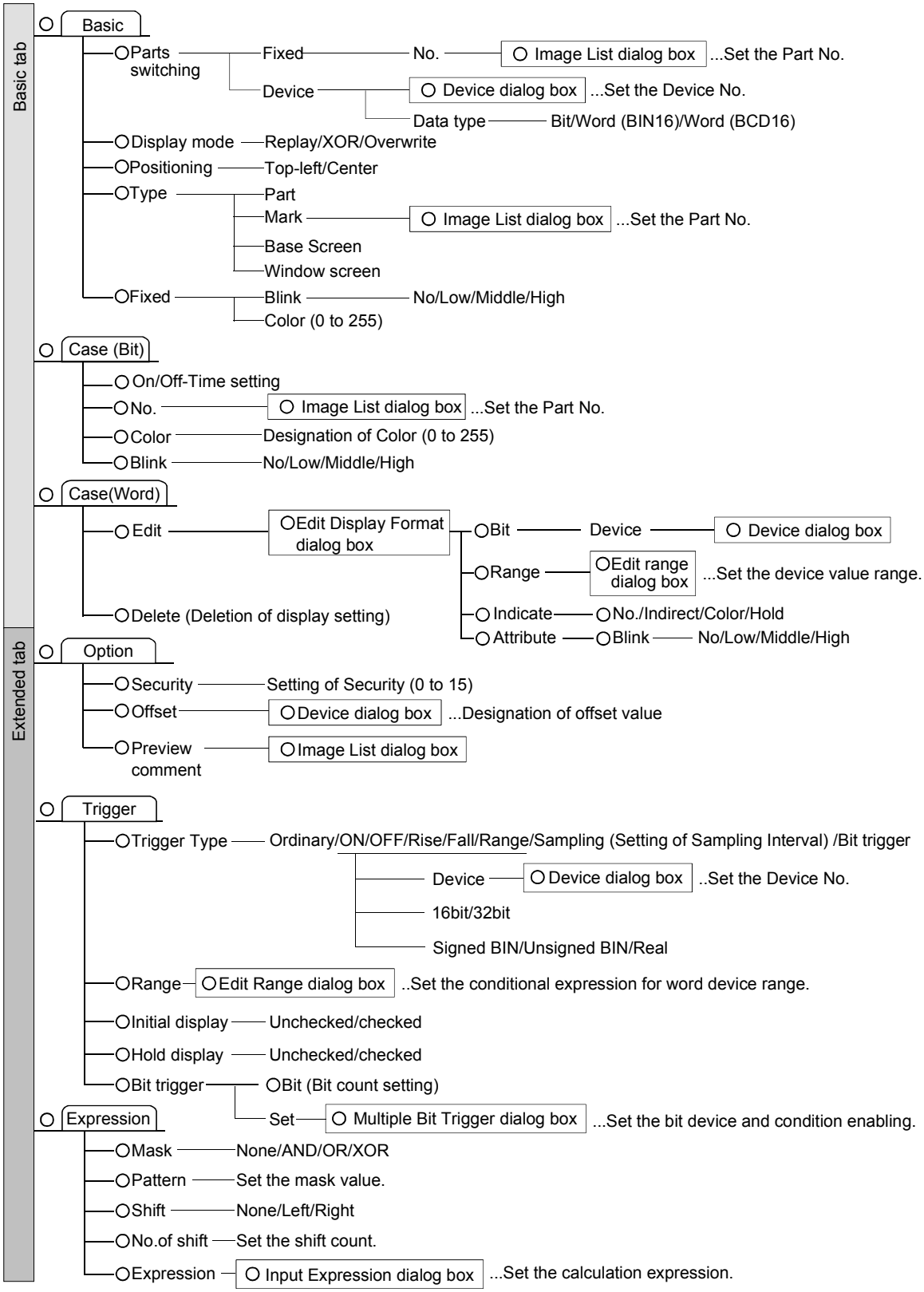
Setting Portion	Settings		Setting Portion	Settings
<Basic>tab	Parts switching: Fixed	Part No.: 1	<Trigger>tab	Device: X1
	Parts switching: Fixed	Part No.: 2		Device: X2

(2) Setting items

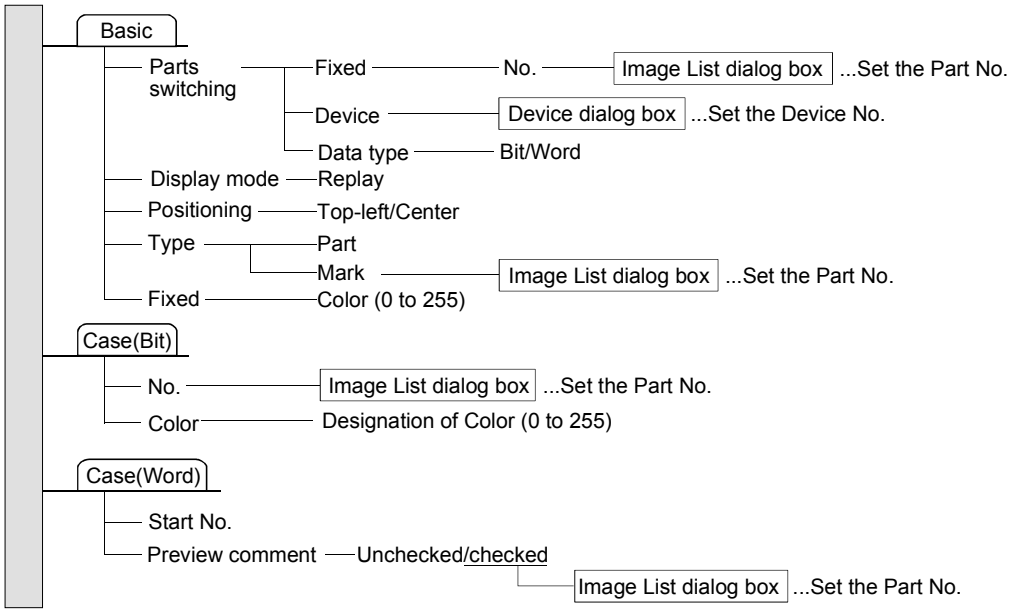
The part display function consists of the following setting items.

• "Part Display" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up animation display"→"Setting up part display" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security, offset and expression (for display method "case (word) " only) can be set.
- Parts/screens registered by the user can be displayed.
- The user-created base/window screen can be displayed as a part.
- According to the change of the device, only the white area of the registered part figure can be displayed in a different color. Only one part can be used.
- Part, display color and attributes can be changed according to the value of the monitor device. (For display method "case (word)" only)
- The displayed parts, display colors and attributes can be changed according to ON/OFF of the bit devices.
- By setting the part/screen number to "0", the displayed part/screen can be deleted.
- When switching between parts/screens of different sizes (large to small), unnecessary display is automatically deleted.

(2) When using the GOT-F900 series
- Parts registered by the user can be displayed.
- Part, display color and attributes can be changed according to the ON/OFF of the bit device. (For display method "case (bit)" only)
- The displayed parts can be erased by setting their numbers to unregistered numbers.
- When switching between parts/screens of different sizes (large to small), unnecessary display is automatically deleted.

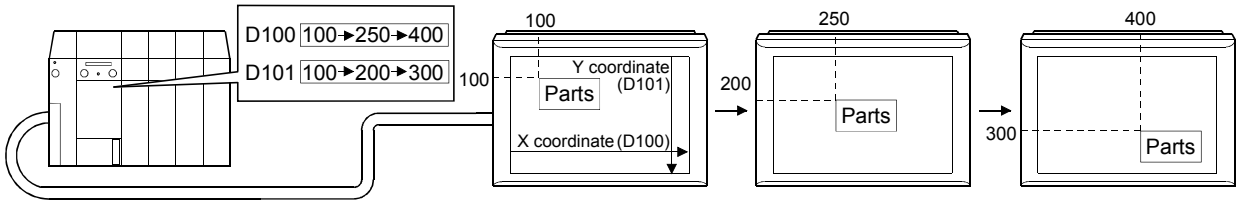
5.3.2 Part movement display function (shows the movement of a part corresponding to a device)

GOT-A900 series	○	GOT-F900 series	×

This function shows the movement or locus of a part figure, which corresponds to ON/OFF of a bit device or the value of a word device, in the specified moving method.

(1) Function outline

(a) Specifies movement display coordinates with the values of two word devices (D100, D101).
Regarding the values of the two word devices (D100, D101) as the X and Y coordinates, this function changes the values of the two word devices (D100, D101) to display the movement of a part figure.

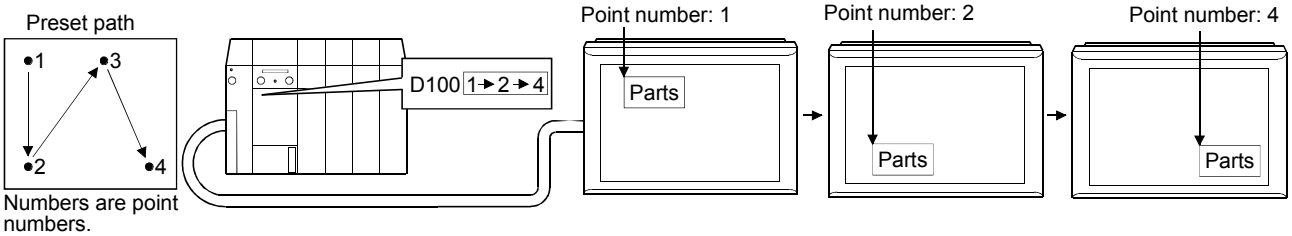


Setting Portion		Settings
Part Movement dialog box	<Basic>tab	Move way: Position Position: D100

The position of the coordinate (origin) set as the reference of parts movement display is set as below.

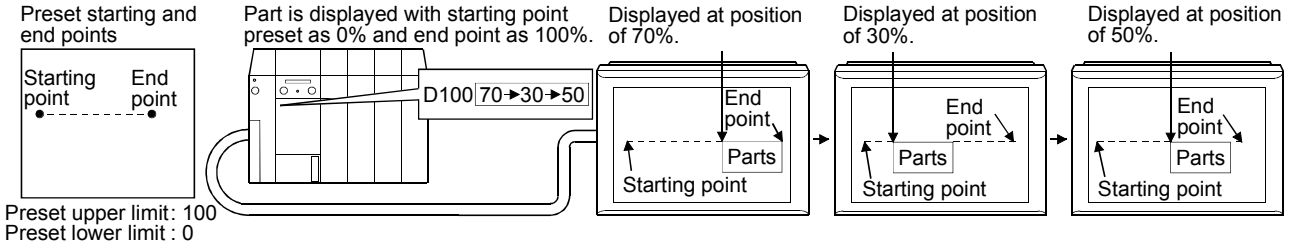
1) For parts displayed on an overlap window
The upper-left of the overlap window is the reference coordinate (origin).
2) For parts displayed on other than overlap window (such as a base screen, superimpose window)
The upper-left of the base screen being displayed is the reference coordinate (origin).

(b) Shows a part at a point position in the specified path.
Presetting the path and point numbers shows a part in the position of the point number corresponding to the word device (D100) value.
The word device (D100) value is changed to move the part.



Setting Portion		Settings
Part Movement dialog box	<Basic>tab	Move way: Point Position: D100 Route No.: 1
Parts Move Route dialog box		Route No.: 1 Points: 4

(c) Shows a part at any position on a line defined by the specified starting and end points.
Shows a part on a line which is defined by the starting point (0%) and the end point (100%) by changing the word device (D100) value relative to the upper and lower limits.
The word device (D100) value is changed to move the part.
The move distance of the part is in increments of 1% the range 0 to 100%.



Setting Portion		Settings
Part Movement dialog box	<Basic>tab	Move way: Line Position: D100 Maximum: 100 Minimum: 0

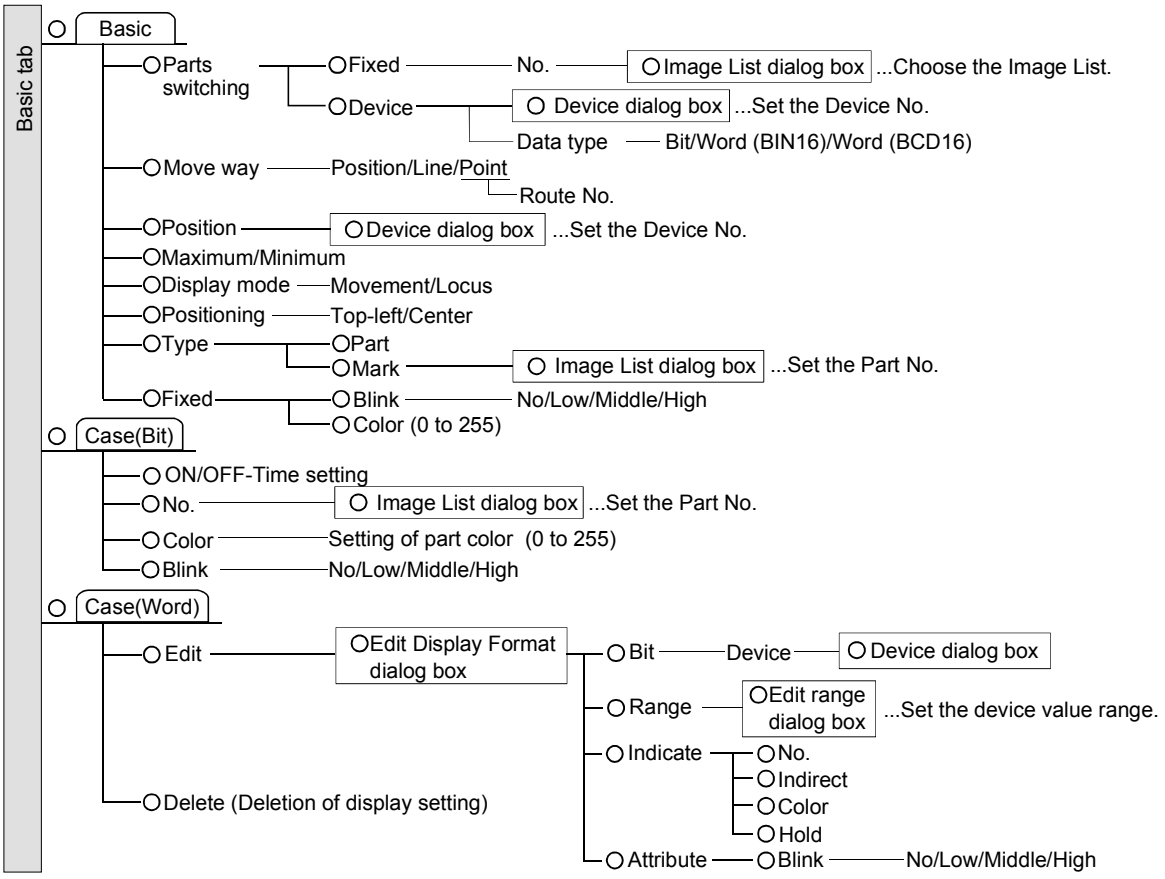
(2) Setting items

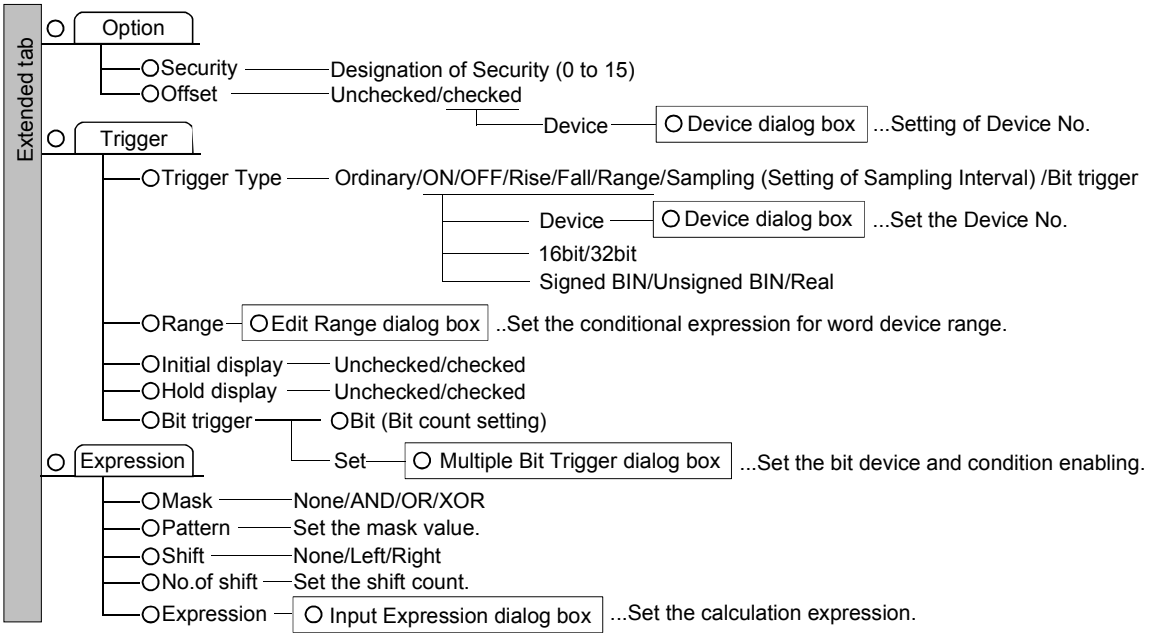
The part movement function consists of the following setting items.

(a) When using the GOT-A900 series

• "Part Movement" dialog box

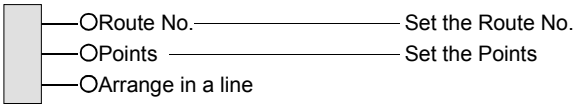
Set the part movement display function.





• "Part Move Route" dialog box

Set the path which is used to display a part at point positions in the specified path.



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up animation display"→"Setting up part movement display" from Contents of Help.

POINT

(1) When using the GOT-A900 series

- Security, offset and expression can be set.
- Displayed parts can be changed according to the device value.
- Display part, display color and attributes can be changed when the monitor device value (word device) reaches a given value.

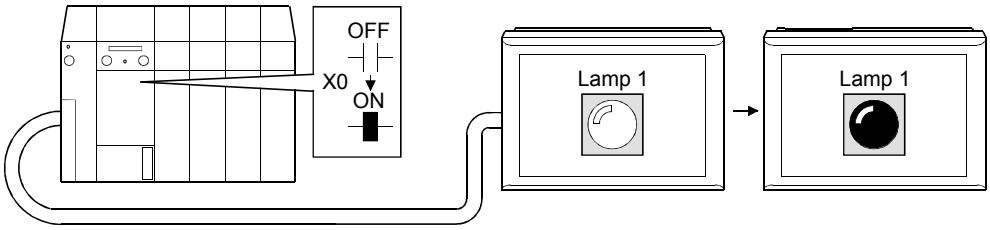
5.3.3 Lamp display function (changes the lit-up color of a lamp with a device value)

GOT-A900 series	○	GOT-F900 series	○

This function changes the lit-up color of a lamp with a device value.

(1) Function outline

(a) Lights/extinguishes a lamp according to ON/OFF of a bit device (X0).

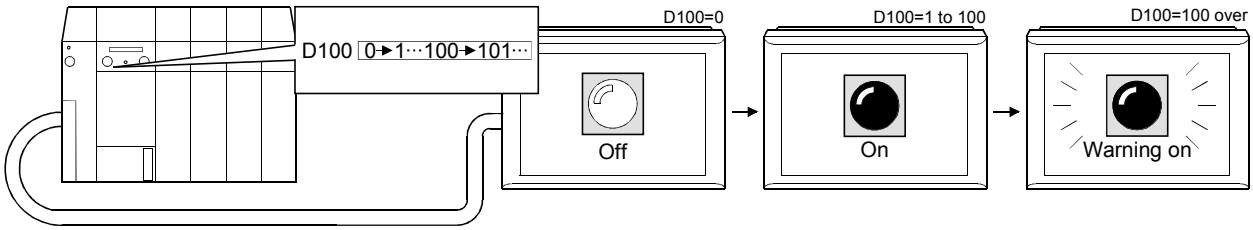


Setting Portion	Settings
<Basic>tab	Device: X0

POINT

The lamp figure, display color, attributes and character string can be changed according to ON/OFF of the bit device.

(b) Changes the lit-up color of a lamp according to the value of a word device (D100).
(Only when the GOT-A900 series is used)



Setting Portion	Settings		
<Basic>tab	Device: D100		
<Case(Word)>tab	Range: $V==0	Lamp: 0	Blink: No
	Range: 0<=$V<=100	Lamp: 224	Blink: No
	Range: 100<$V	Lamp: 224	Blink: High

POINT

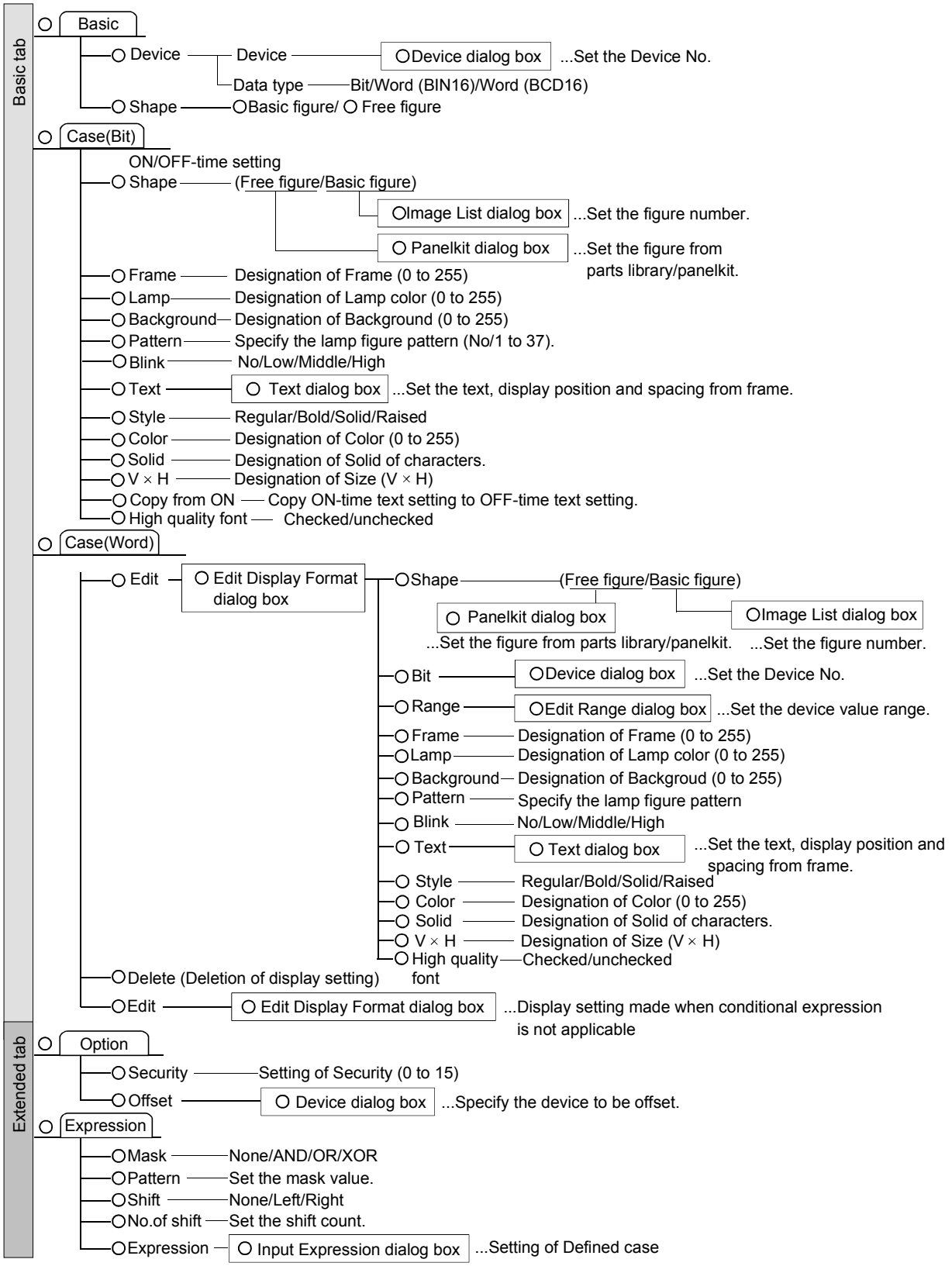
The lamp figure, display color, attributes and character string can be changed according to the word device value.

(2) Setting items

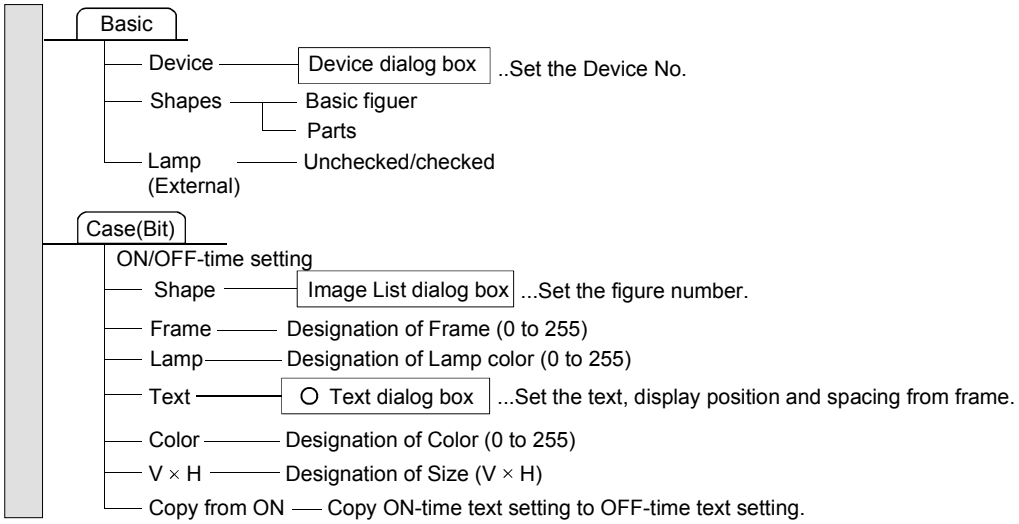
The lamp display function consists of the following setting items.

• "Lamp" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up animation display"→"Setting up lamp display" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security and offset can be set.
- Basic figures provided by GT Designer and the free figures set by the user can be used as lamps.
- A character string can be displayed on the top, center, bottom, right or left of the lamp.

(2) When using the GOT-F900 series
- Basic figures provided by GT Designer can be used as lamps.
- A character string can be displayed in the center of the lamp.

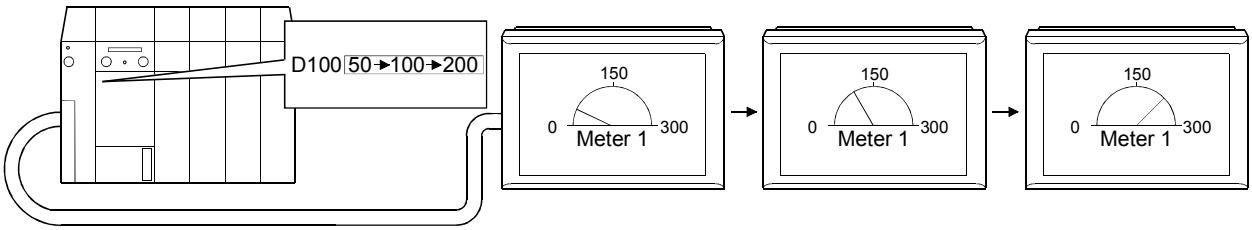
5.3.4 Panelmeter display function (shows a meter according to a word device value)

GOT-A900 series	○	GOT-F900 series	○

This function shows a meter at the ratio of a word device value to the upper and lower limits.

(1) Function outline

(a) Shows a meter at the ratio of a word device (D100) value to the upper limit (300) and lower limit (0).



Setting Portion	Settings			
<Basic>tab	Device: D100	Text: Meter 1		
<Form>tab	Type: Top1/2	Upper: Fixed 300	Lower: Fixed 0	
<Graph>tab	Scale value display (V × H) ∗1	Upper: 300	Lower: 0	

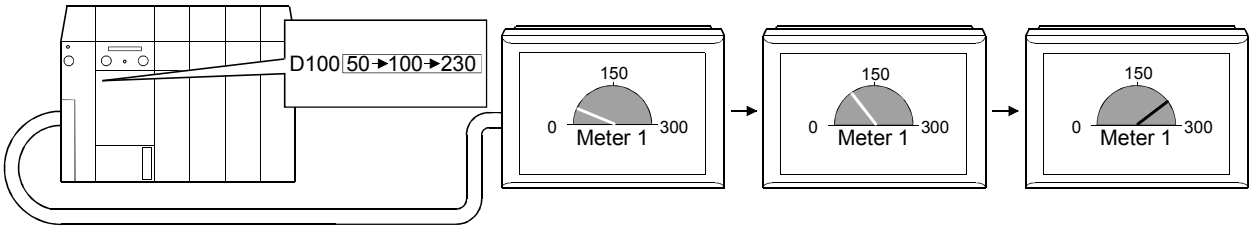
∗1: Scale value indication may be set for only the GOT-A900 series.

POINT

(1) When using the GOT-A900 series
- Security, offset and expression can be set.
- A character string can be displayed on the top, center, bottom, right or left of the panel meter.
- Scale and scale values can be set above the arc of the panel meter.

(2) When using the GOT-F900 series
- Scale can be set above the arc of the panel meter.

(b) Changes the needle color when the monitor device value reaches a given value.
(Only when the GOT-A900 series is used)



Setting Portion	Settings			
<Basic>tab	Device: D100	Needle: 255	Meter panel: 109	Text: Meter 1
<Form>tab	Type: Top1/2	Upper: Fixed 300	Lower: Fixed 0	
<Case>tab	Range: 200<$V	Needle: 0		
<Graph>tab	Scale value display (V × H) ∗1	Upper: 300	Lower: 0	

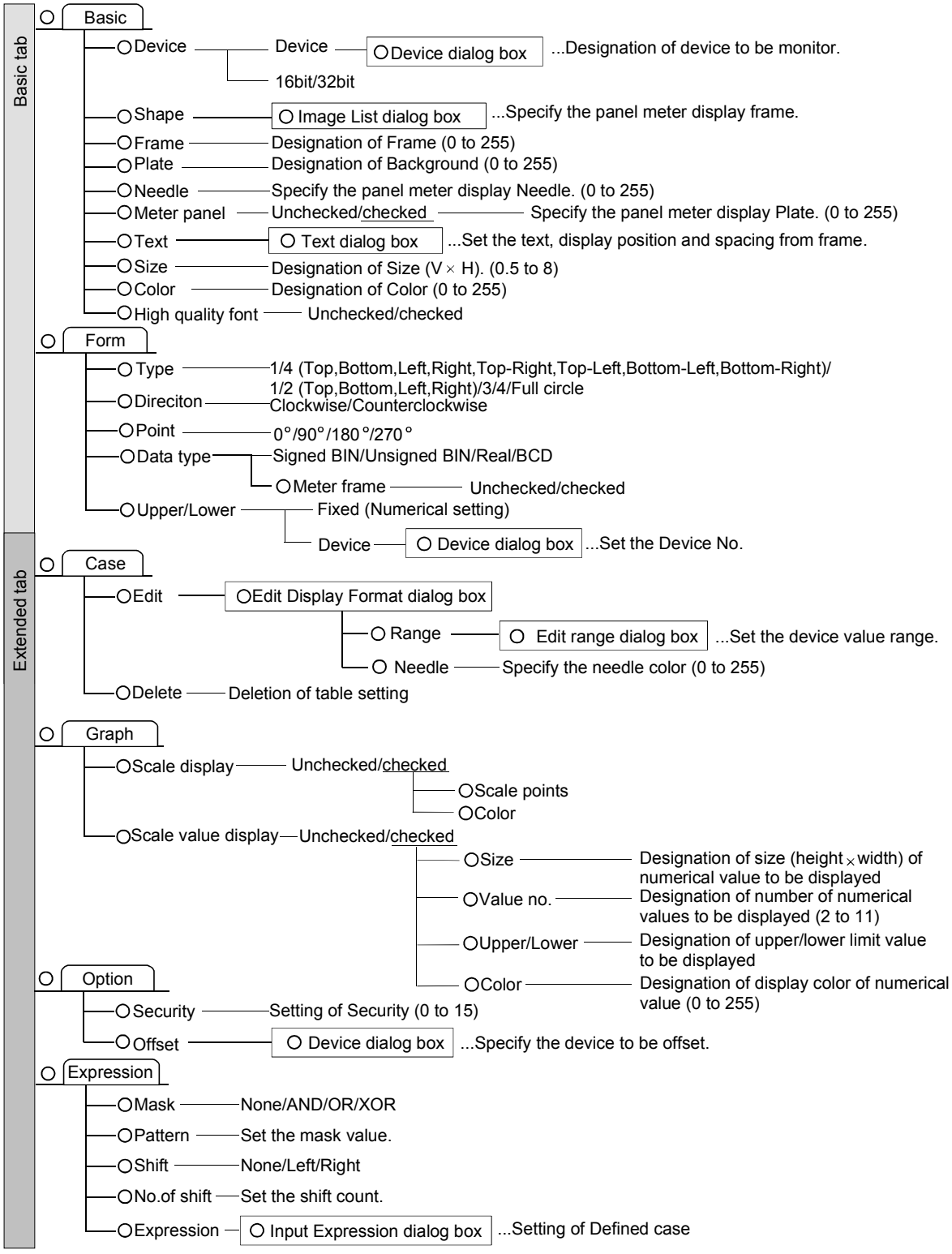
∗1: Scale value indication may be set for only the GOT-A900 series.

(2) Setting items

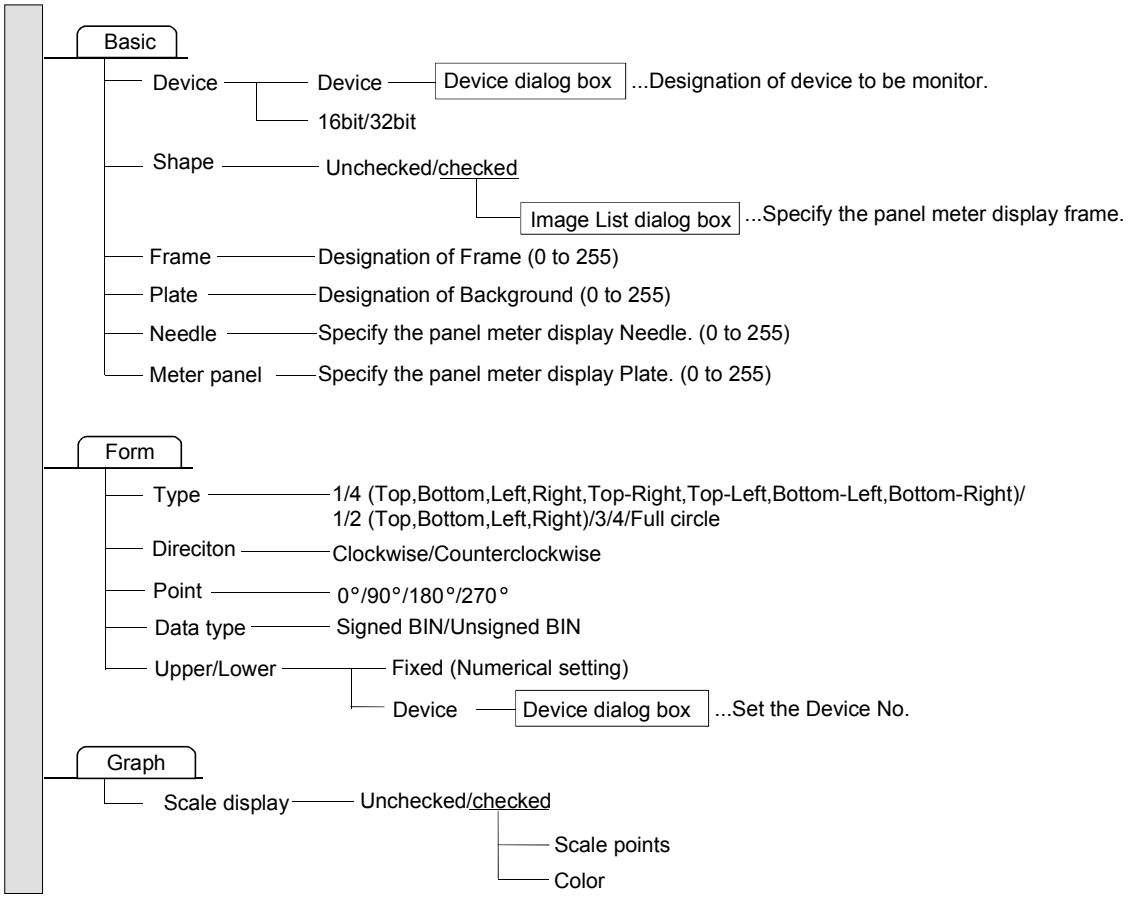
The panelmeter display function consists of the following setting items.

• "Panelmeter" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

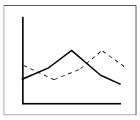
Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up animation display"→"Setting up panelmeter display" from Contents of Help.

5.4 Graph Display Functions

The graph display functions collect word device values and show them in graph format. They are available in the following types.

• Trend graph display function

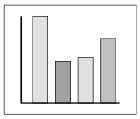


.... Shows data in trend graph format.

• Line graph display function

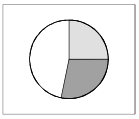
.... Shows data in line graph format.

• Bar graph display function



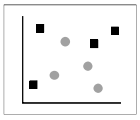
.... Shows data in bar graph format.

• Statistical graph display function



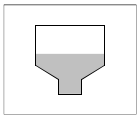
.... Shows the ratio of each data to the total in statistical graph format.

• Scattered chart display function



.... Shows the X and Y axis device values in scattered chart format.

• Level display function



.... Shows data as a level at the ratio to upper/lower limit.

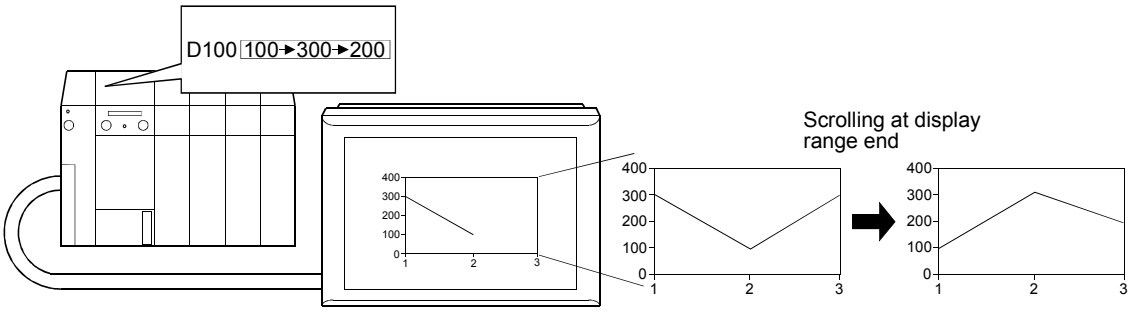
5.4.1 Trend graph display function (shows a word device value on trend graph)

GOT-A900 series	○	GOT-F900 series	○

This function gathers data stored in a word device and shows it on a trend graph.

(1) Function outline

(a) Collects data stored in a word device and shows it on a trend graph. After the last part of the display range is reached, the screen is scrolled.



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph: Trend	<Monitor Device>tab	Device: D100
<Form>tab	Number: 1 Points: 3	<Graph>tab (GOT-A900 series)	Scale display (V × H): Scale points: 5 × 3 Scale value display (V × H)∗1
<Case>tab	Upper: 400 Lower: 0	<Others>tab (GOT-F900 series)	: Value no.: 5 × 3 Upper: 400 × 3 Lower: 0 × 1

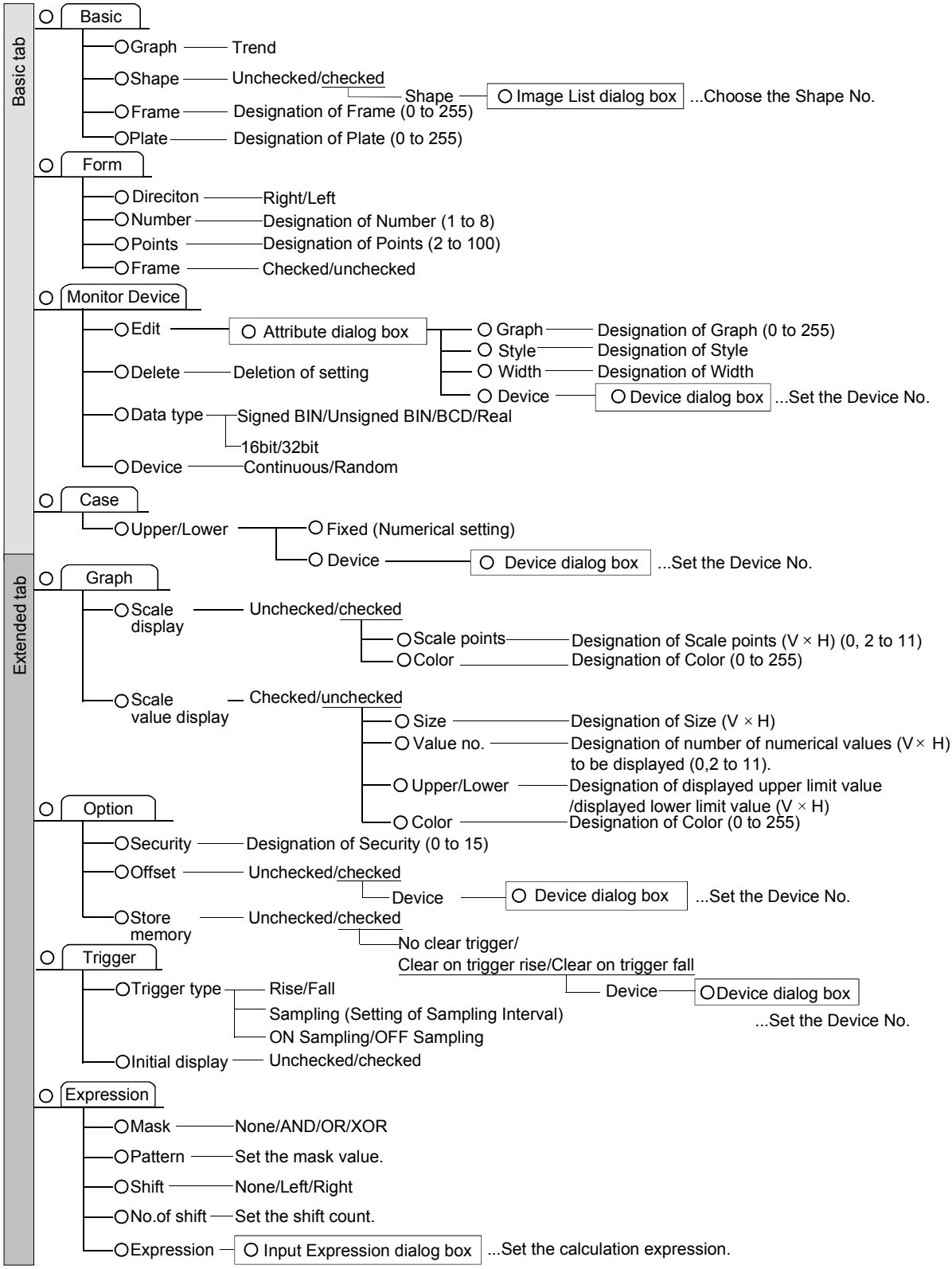
∗1: Scale value indication may be set for only the GOT-A900 series.

(2) Setting items

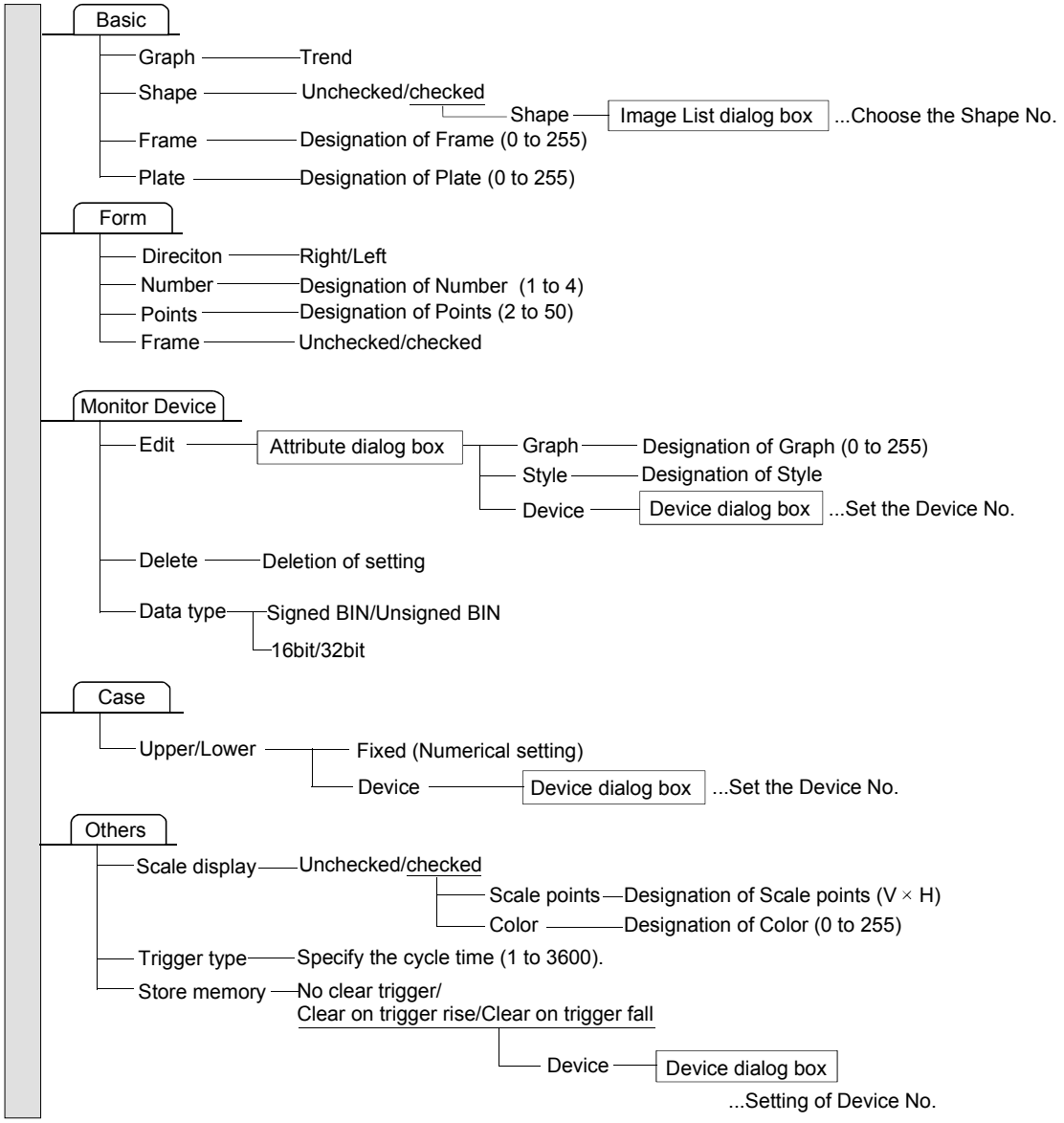
The trend graph display function consists of the following setting items.

• "Line/Trend/Bar Chart" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up graph display"→"Setting up trend graph display" from Contents of Help.

POINT

- Security, offset and expression can be set.
- As the condition for graphing the specified word device value, you can combine and set the monitoring cycle and bit condition (ON/OFF).
- Up to eight graphs (for eight devices) can be displayed on one trend graph.
- Up to 100 pieces of collected data can be displayed on the screen.
- Scales and scale values can be set.
- Graph frame can be set.

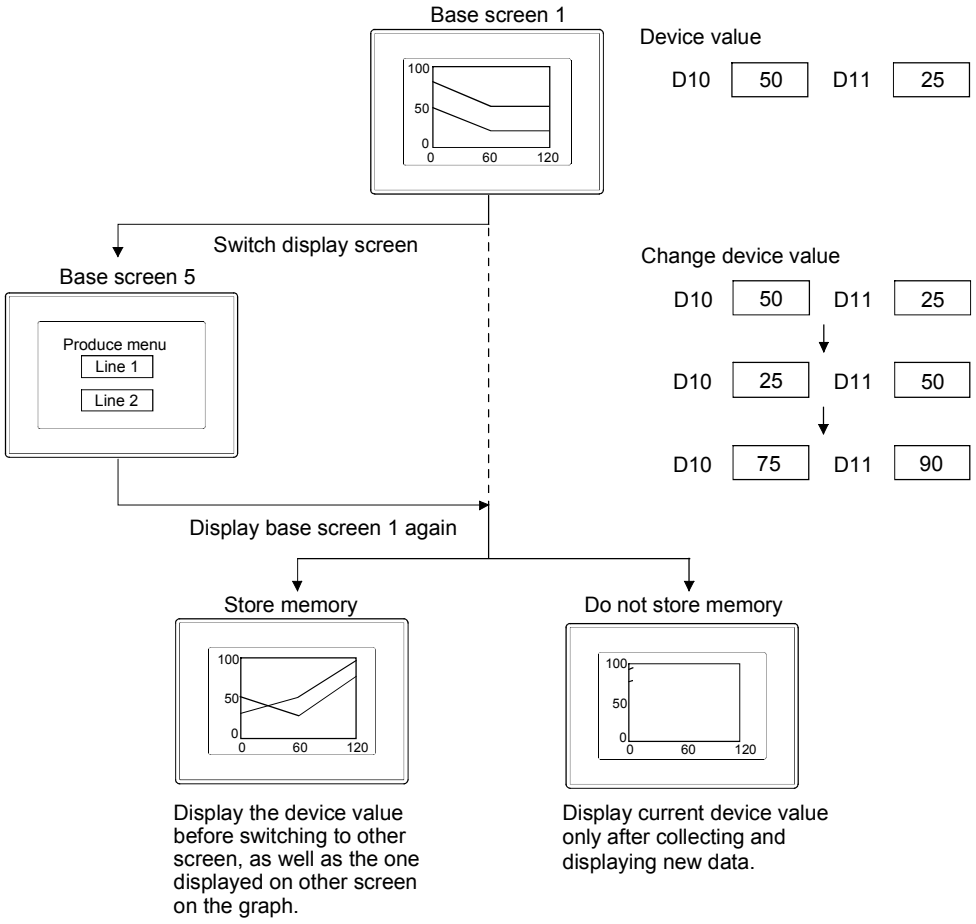
(4) Store memory

The trend graph collects data only when the screen including the graph is displayed. When switching to other screen, the collected data will be cleared. Make sure to check [Store Memory] to collect data even after switching to other screen.

The status of device value is usually monitored and stored in the internal memory of GOT.

Set [Store Memory] on basic tab.

Example: Monitored device: D10, D11



POINT

Timing of erasing the display stored in memory

The data stored in memory will be erased according to the following timing.

- When the condition for clearing trigger is enabled
- When GOT is reset or power supply is OFF.
- Download of project
- Display of build-in memory information
- Execution of utility setup and message display switching (display language switching)

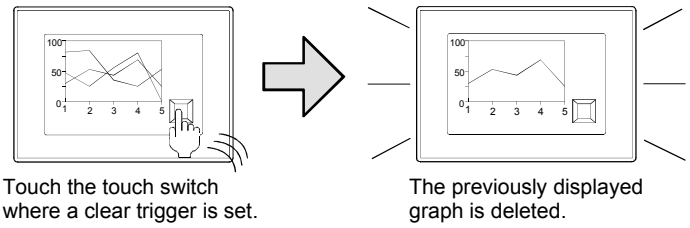
(5) Timing for recognizing clear trigger

The timing of recognizing clear trigger in GOT is same as that set on [Trigger Type] (trigger tab).
When [Sampling], [ON Sampling], [OFF Sampling] is set in [Trigger Type], the device ON/OFF status set for clear trigger must be retained longer that the cycle set in [Trigger Type].

Example of data retention for a period longer than that specified for "Trigger Type"

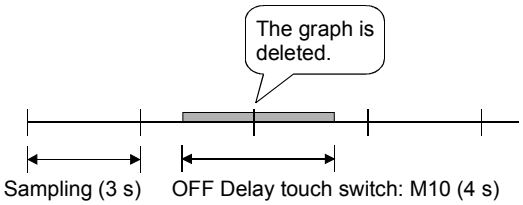
Clear trigger : Set the timing to "Rise" and the device to "M10".
Trigger type : Set "Sampling (3 s)."
Touch switch : Set the device to "M10", and the action to "bit momentary" and "OFF Delay (4 s)."

The "sampling (3 s)" trigger type condition is met during the time from pressing the touch switch until the clear trigger (M10) is turned off by the OFF delay (4 s), and the graph is deleted.



Touch the touch switch where a clear trigger is set.

The previously displayed graph is deleted.



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(6) Causes and measures when the trend graph display is not updated in the set sampling cycle.

(a) Setting of Sampling

When data cannot be collected or graph display cannot be updated in the set sampling cycle, the trend graph will be displayed with the value different from actual one.

To display the trend graph correctly, check whether the trend graph is displayed based on the actual device value, and make adjustment to prolong setting sampling.

(b) Updated timing at setting "ON Sampling" or "OFF Sampling"

When "ON Sampling" or "OFF Sampling" is set, there are cases the graph is not updated in the set sampling cycle.

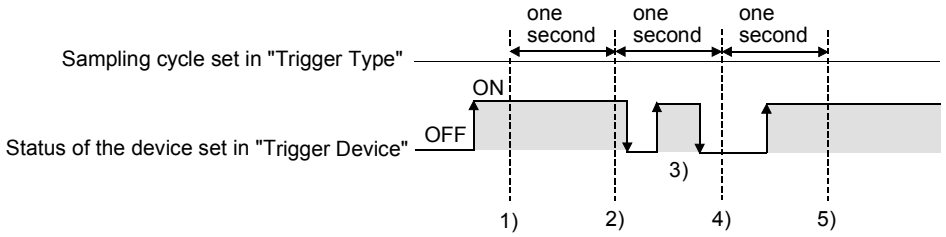
The causes for this problem and the measures to be taken are explained below.

(i) Causes

The status of the device is checked at the each sampling cycle set in the "Trigger Type".

When the device condition is not satisfied at checking, the display is not updated.

(When setting both "Trigger Type" to "On Sampling" and sampling cycle to one second)



At the timing of 1), the trend graph is updated.

At the timing of 2), the trend graph is updated.

At the timing of 3), the trend graph is not updated because is unmatchable to Sampling.

At the timing of 4), the trend graph is not updated because is unmatchable to the device condition.

At the timing of 5), the trend graph is updated.

(ii) Measures

The sampling cycle set using the "Trigger Type" is not depending on the status of the device.

(The sampling cycle is not changed even if turning on or off the device.)

To start the sampling using the device, set as follows.

1. Set "Rise" or "Fall" using "Trigger Type".
2. Program so that turn on or off the device at the timing to update the display using the sequence program.

(c) Updated timing when setting the either following sampling, "Sampling", "ON Sampling" or "OFF Sampling"

If store memory is used when [Sampling], [ON Sampling] or [OFF Sampling] is set, the graph update timing will differ from the set sampling cycle.

(i) Without setting store memory

Counting the sampling is started and reset at the following timing.

- At trend graph displaying (displaying by screen switching or security level change etc.)
- At station No. switching
- At security level change

(ii) With setting store memory

Counting the sampling is started and reset at the following timing.

- At starting GOT
- At project download
- At build-in memory information displaying
- At execution of utility setup and message display switching (display language switching)

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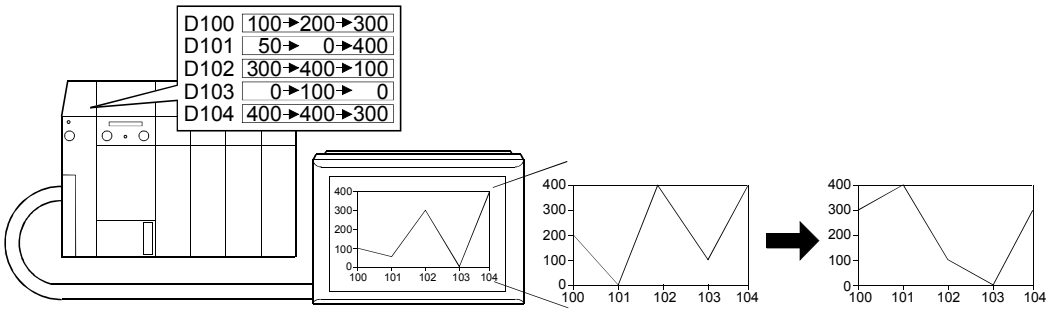
5.4.2 Line graph display function (shows word device values on line graph)

GOT-A900 series	○	GOT-F900 series	○

This function gathers the data of multiple word devices and shows a line graph.

(1) Function outline

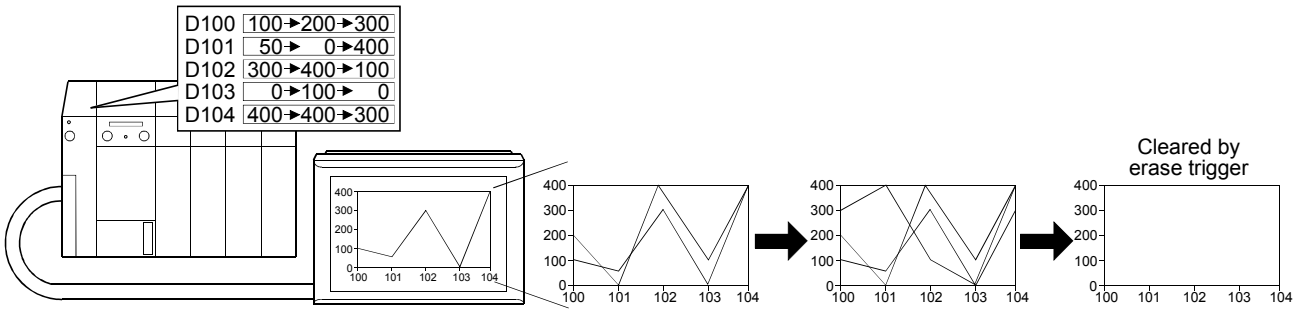
(a) Batch-collects the data of multiple word devices and shows a line graph.



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph: Line	<Monitor Device>tab	Device: D100 (Continuous)
<Form>tab	Number : 1 Points : 5	<Graph>tab (GOT-A900 series) <Others>tab (GOT-F900 series)	Scale display (V × H): Scale points: 5 × 5 Scale value display (V × H)∗1 : Value no.: 5 × 5 Upper: 400 × 104 Lower: 0 × 100
<Case>tab	Upper: 400 Lower: 0		

∗1: Scale value indication may be set for only the GOT-A900 series.

(b) When the line graph display is updated, the old graph is not erased but a new graph is overlaid on the old one. (Only when the GOT-A900 series is displayed)



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph: Line	<Monitor Device>tab	Device: D100 (Continuous)
<Form>tab	Number : 1 Points : 5	<Graph>tab (GOT-A900 series)	Scale display (V × H): Scale points: 5 × 5 Scale value display (V × H) : Value no.: 5 × 5 Upper: 400 × 104 Lower: 0 × 100
<Case>tab	Upper: 400 Lower: 0		
<Option>tab	Locus: checked: Clear on trigger rise Device (Clear trigger): X0		

POINT

Note the following when setting a line graph which is specified to show a locus.

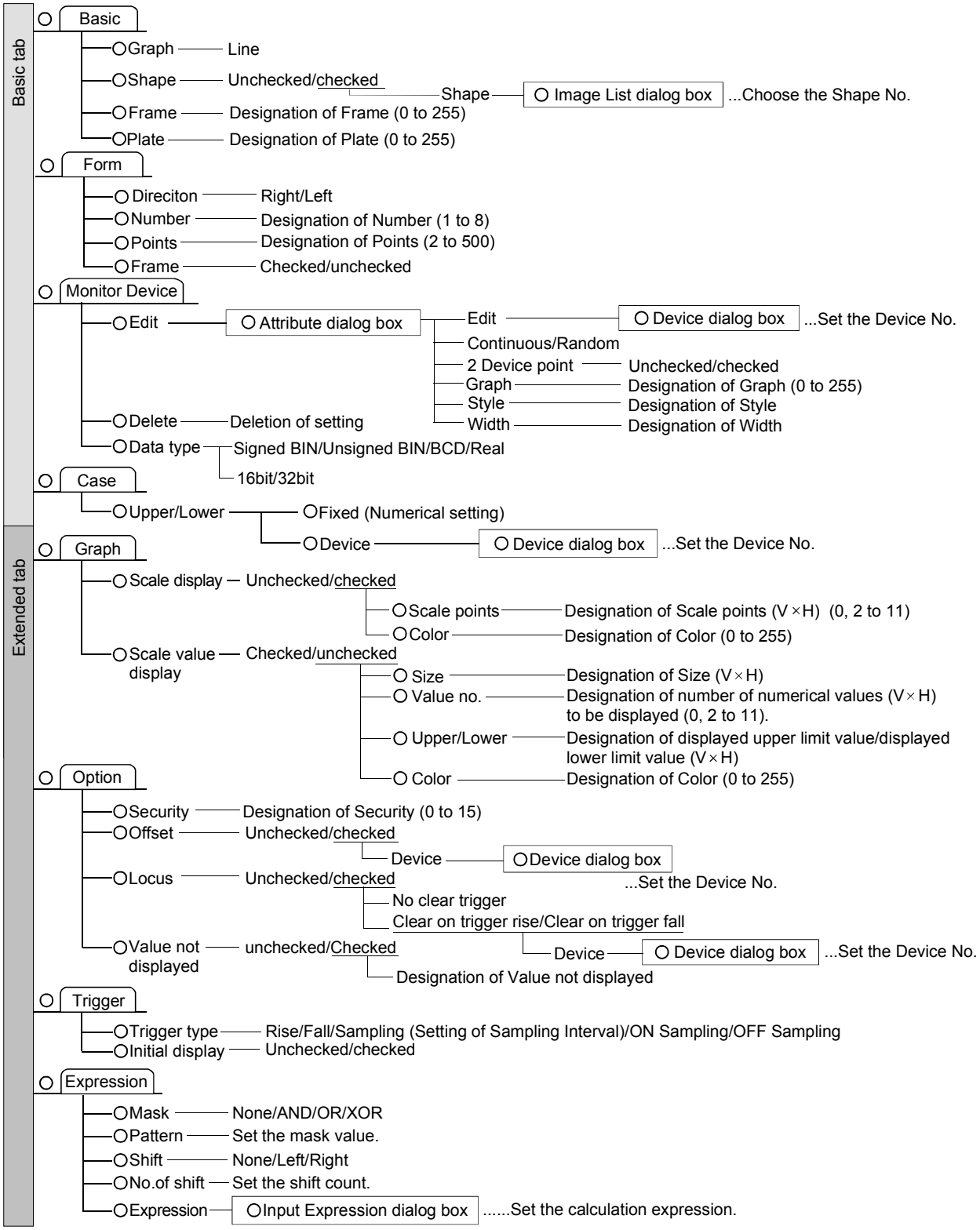
- Only one graph may be set to one project.
- It cannot be set to a window screen.
- When there is line graph setting, the window screen's overlap window 2 or test window cannot be displayed.
- The base screen where line graph setting has been made cannot be displayed as multiple called screens simultaneously by the screen call function.
- The maximum size of a line graph is equal to the maximum size of an overlap window.

(2) Setting items

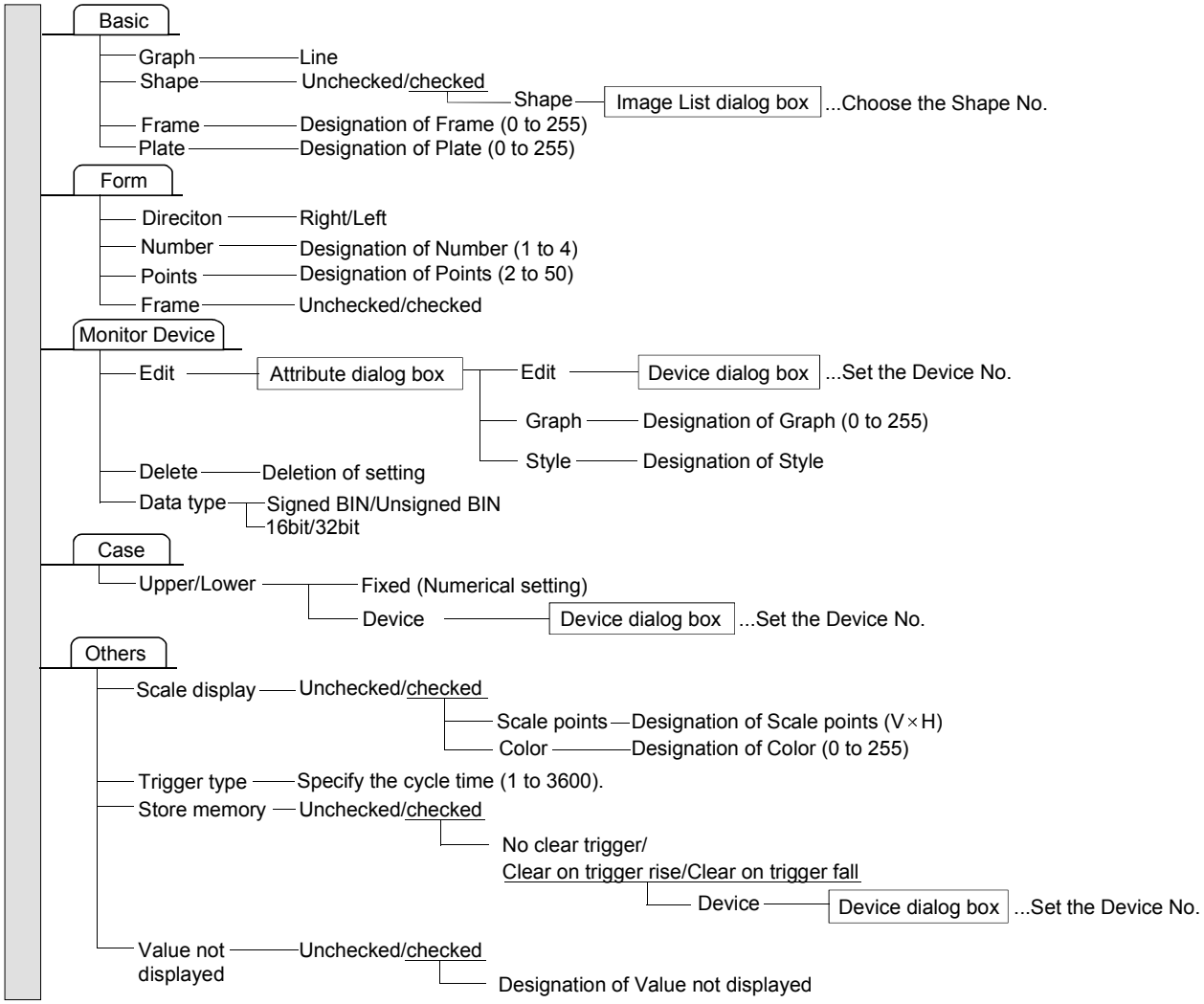
The line graph display function consists of the following setting items.

• "Line/Trend/Bar Chart" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up graph display"→"Setting up line graph display" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security, offset, expression and hidden values can be set.
- Up to eight graphs can be displayed.
- Up to 500 devices can be monitored with one graph.
- Scales and scale values can be set.
- Graph frame can be set.

(2) When using the GOT-F900 series
- Up to four graphs can be displayed.
- Up to 50 devices can be monitored with one graph.
- Scales can be set.
- Graph frame can be set.

(4) Clear ON trigger recognition timing

The timing when the GOT recognizes a clear ON trigger is the same as the timing set in "Trigger Type" (Trigger tab).
When "Sampling", "ON sampling" or "OFF sampling" has been set in "Trigger Type", hold the ON/OFF status of the device set to clear trigger at the sampling set in "Trigger Type" or longer.

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(5) Causes and measures when the line graph display is not updated in the set sampling cycle.

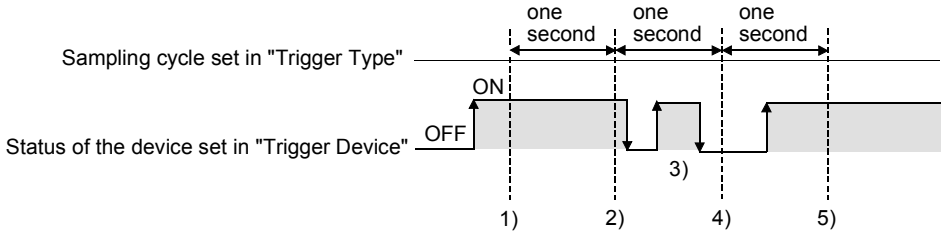
(a) Updated timing at setting "ON Sampling" or "OFF sampling"

When "ON sampling" or "OFF sampling" is set, there are cases the graph is not updated in the set sampling cycle.
The causes for this problem and the measures to be taken are explained below.

(i) Causes

The status of the device is checked at the each sampling cycle set in the "Trigger Type".
When the device condition is not satisfied at checking, the display is not updated.

(When setting both "Trigger Type" to "On Sampling" and sampling cycle to one second)



At the timing of 1), the line graph is updated.
At the timing of 2), the line graph is updated.
At the timing of 3), the line graph is not updated because is unmatchable to Sampling.
At the timing of 4), the line graph is not updated because is unmatchable to the device condition.
At the timing of 5), the line graph is updated.

(ii) Measures

The sampling cycle set using the "Trigger Type" is not depending on the status of the device.
(The sampling cycle is not changed even if turning on or off the device.)
To start the sampling using the device, set as follows.

1. Set "Rise" or "Fall" using "Trigger Type".
2. Program so that turn on or off the device at the timing to update the display using the sequence program.

(b) Updated timing when setting the either following sampling cycle, "Sampling", "ON Sampling" or "OFF Sampling"

If locus display is used when "Sampling", "ON Sampling" or "OFF Sampling" is set, the graph update timing will differ from the set sampling cycle.

(i) Without setting locus

Counting the sampling cycle is started and reset at the following timing.

- At line graph displaying (displaying by screen switching or security level change etc.)
- At security level change

(b) With setting locus

Counting the sampling cycle is started and reset at the following timing.

- At starting GOT
- At project download
- At build-in memory information displaying
- At execution of utility setup and message display switching (display language switching)

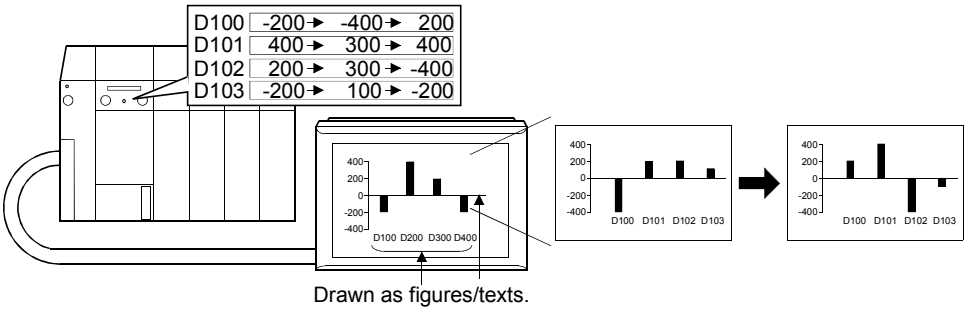
5.4.3 Bar graph display function (shows word device values on bar graph)

GOT-A900 series	○	GOT-F900 series	○

This function shows data stored in word devices on a bar graph.

(1) Function outline

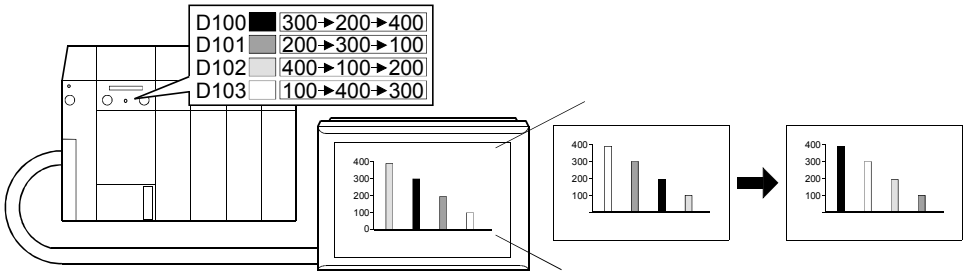
(a) Batch-collects the data stored in multiple word devices and shows them on a bar graph.



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph: Bar	<Monitor Device>tab	Device: D100 (Continuous)
<Form>tab	Number: 4	<Graph>tab (GOT-A900 series) <Others>tab (GOT-F900 series)	Scale display (Vertical): Scale points: 5 (Vertical) Scale value display (Vertical) ∗1 : Value no.: 5 (Vertical) Upper: 400 (Vertical) Lower: -400 (Vertical)
<Case>tab	Upper: 400 Lower: -400		

∗1: Scale value indication may be set for only the GOT-A900 series.

(b) Sorts the bar graph (ascending order, descending order) according to the word device values. (Only when the GOT-A900 series is displayed)



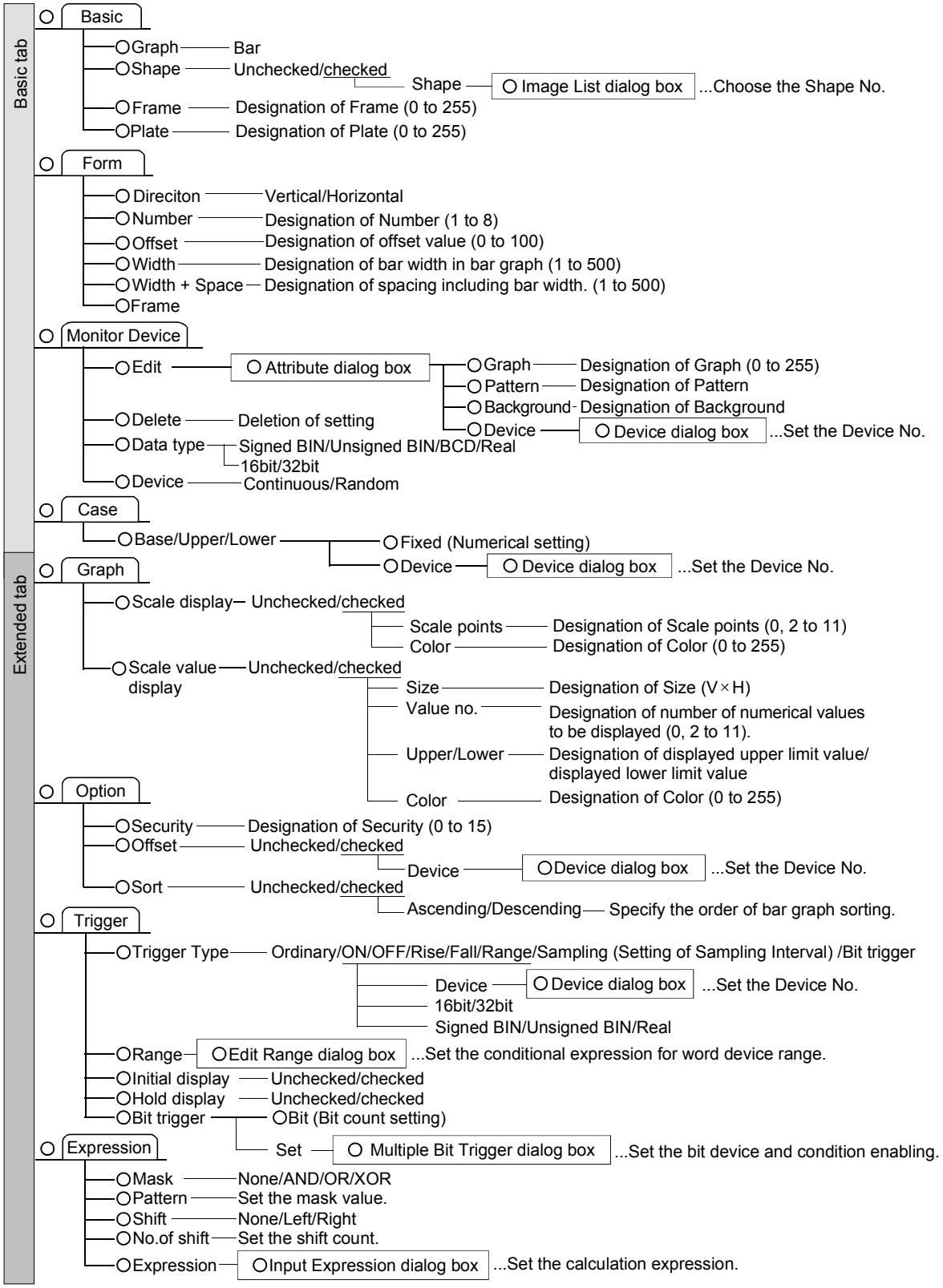
Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph: Bar	<Case>tab	Base : Fixed 0 Upper : Fixed 400 Lower : Fixed 0
<Monitor Device> tab	Device: D100 (Graph: 0) D101 (Graph: 3) D102 (Graph: 255)	<Graph>tab	Scale display (Vertical): Scale points: 5 (Vertical) Scale value display (Vertical) : Value no.: 5 (Vertical) Upper: 400 (Vertical) Lower: 0 (Vertical)
<Form>tab	Number: 3	<Option>tab	Sort: Ascending

(2) Setting items

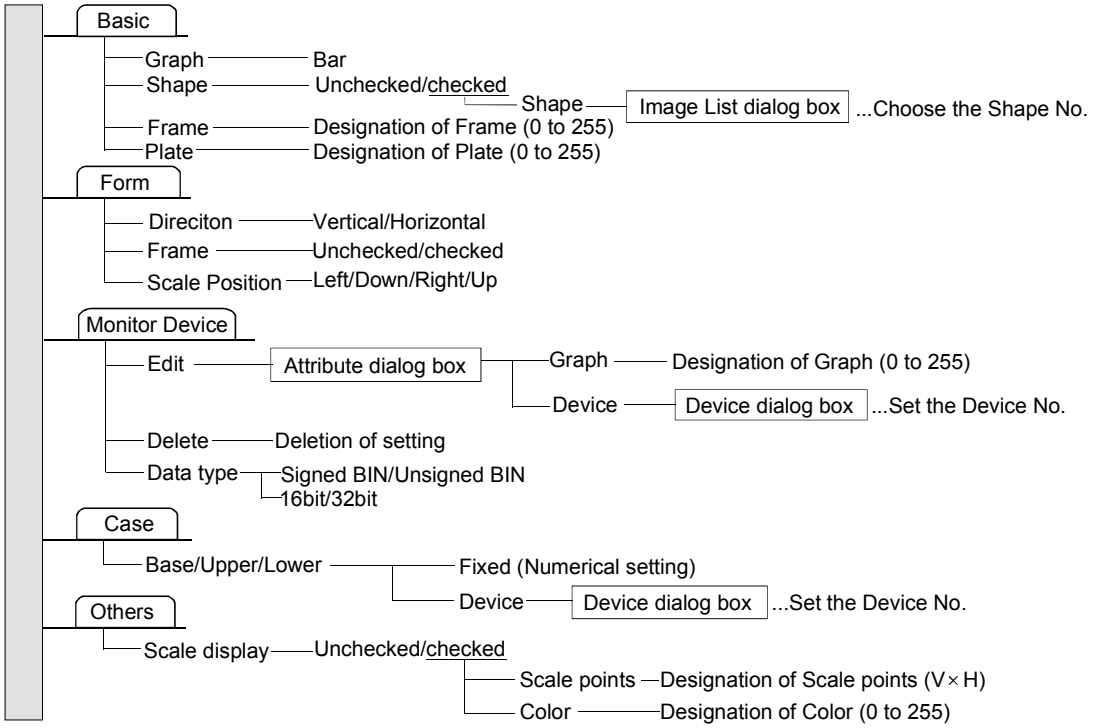
The bar graph display function consists of the following setting items.

• "Line/Trend/Bar Chart" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up graph display"→"Setting up bar graph display" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security, offset and expression can be set.
- Bar graphs can be displayed above/under the designated base value.
- Up to eight graphs (for eight devices) can be displayed.
- Graphs can be sorted in ascending/descending order.
- Scales and scale values can be set.
- Graph frame can be set.

(2) When using the GOT-F900 series
- Bar graphs can be displayed above/under the designated base value.
- Up to one graph (for one device) can be displayed.
- Scales can be set.
- Graph frame can be set.

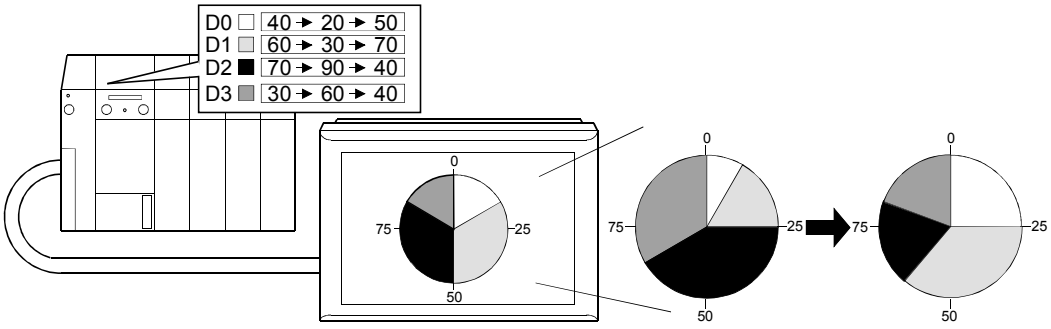
5.4.4 Statistical graph display function (shows word device values on statistical graph)

GOT-A900 series	○	GOT-F900 series	○

This function graphs the ratios of the collected word device data to the total.

(1) Function outline

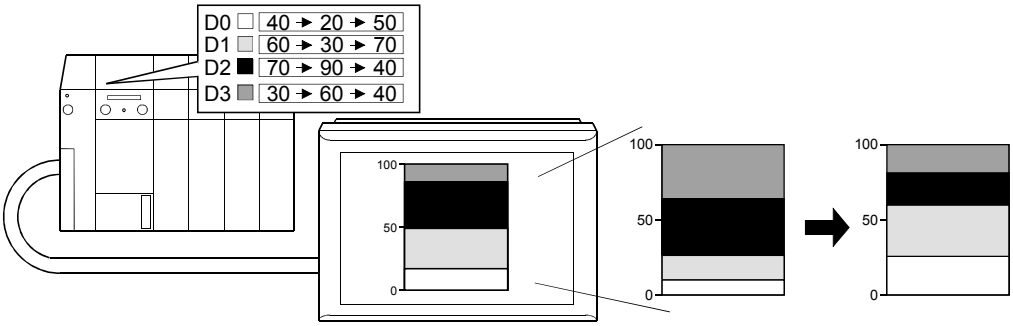
(a) Collects the data of multiple word devices and shows the ratios of the word device data to the total on a circle graph.



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph : Circle graph No. of Partitions : 4	<Division>tab	Device : D0 (Graph 255, Pattern 8) D1 (Graph 182, Pattern 8) D2 (Graph 109, Pattern 8) D3 (Graph 0, Pattern 8)
<Graph>tab	Scale display: Scale points: 4 Scale value display ∗1: Value no.: 4		

∗1: Scale value indication may be set for only the GOT-A900 series.

(b) Shows the ratios of the gathered multiple word device data to the total on a percentage bar graph.



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph : Rectangle graph No. of Partitions : 4	<Division>tab	Device : D0 (Graph 255, Pattern 8) D1 (Graph 182, Pattern 8) D2 (Graph 109, Pattern 8) D3 (Graph 0, Pattern 8)
<Graph>tab	Scale display: Scale points: 3 Scale value display ∗1: Value no.: 3		

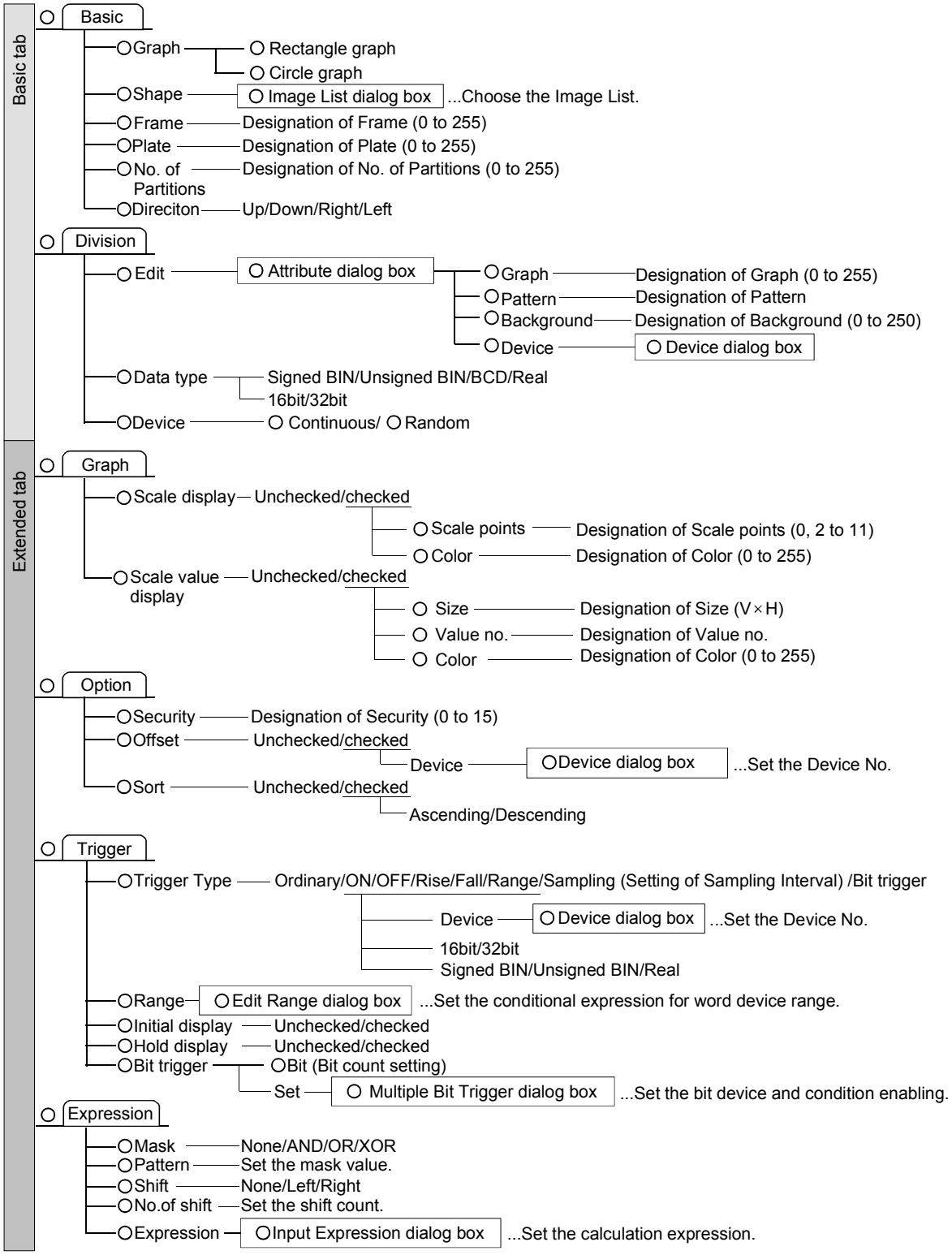
∗1: Scale value indication may be set for only the GOT-A900 series.

(2) Setting items

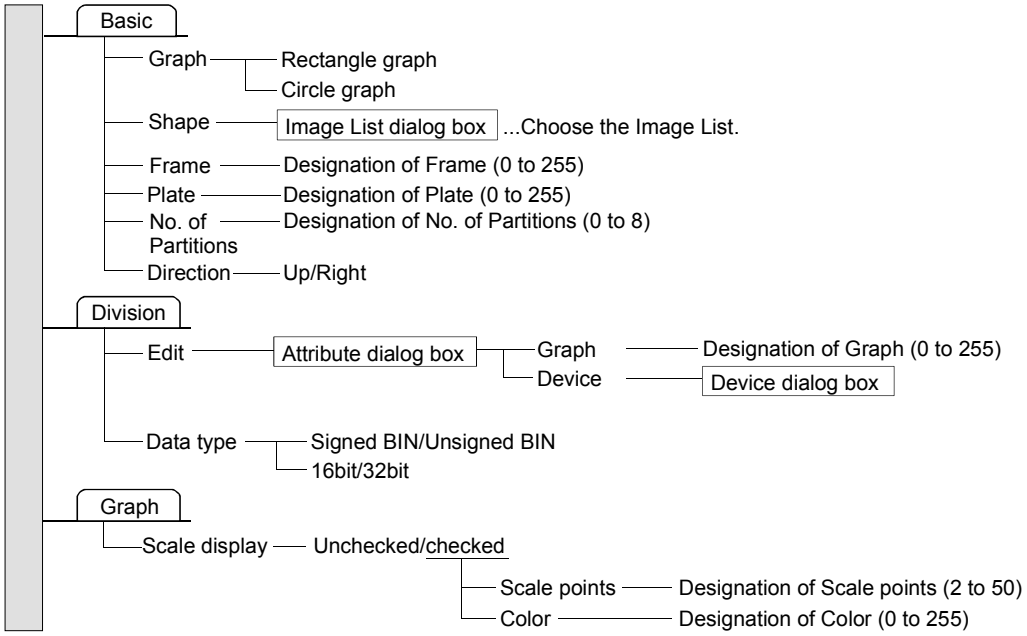
The statistical graph display function consists of the following setting items.

• "Statistics Chart" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up graph display"→"Setting up statistical graph display" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security, offset and expression can be set.
- Statistical graphs of up to 32 divisions (for 32 devices) can be displayed.
- Graphs can be sorted in ascending/descending order.
- Scales and scale values can be set.
- Rectangle graph or circle graph is available.

(2) When using the GOT-F900 series
- Statistical graphs of up to eight divisions (for eight devices) can be displayed.
- Graphs can be sorted in ascending/descending order.
- Scales can be set.
- Rectangle graph or circle graph is available.

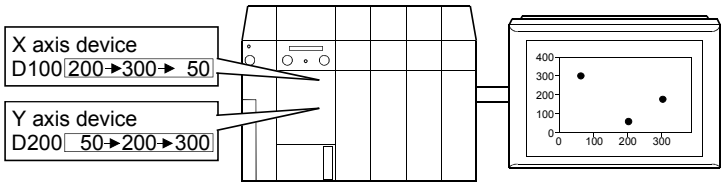
5.4.5 Scattered chart display function (shows word device values on scattered chart)

GOT-A900 series	○	GOT-F900 series	×

This function gathers data stored in word devices associated with the X and Y axes and shows them on a scattered chart.

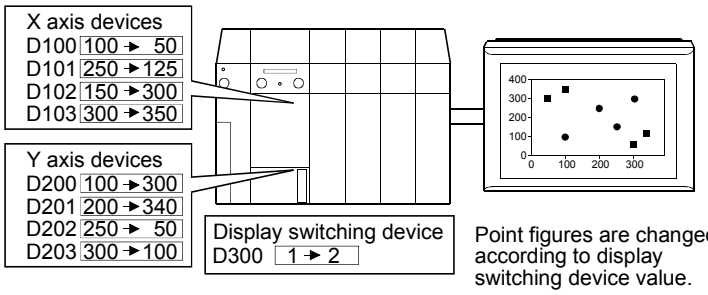
(1) Function outline

(a) Collects and shows the data of one point device. By updating the display with the previous display remaining, shows the variation of the point device value as a locus.



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph : Sample	<Device/Attribute> tab	X axis Device: D100 Y axis Device: D200
<Case>tab	X: Upper (400) X: Lower (0) Y: Upper (400) Y: Lower (0)	<Graph>tab	Scale display: Scale point: 5 × 5 Scale value display : Size: 5 × 5 Upper: 400 × 400 Lower: 0 × 0

(b) Batch-collects and shows the data of multiple point devices. By changing the display switching device value, shows different data as different point figures.

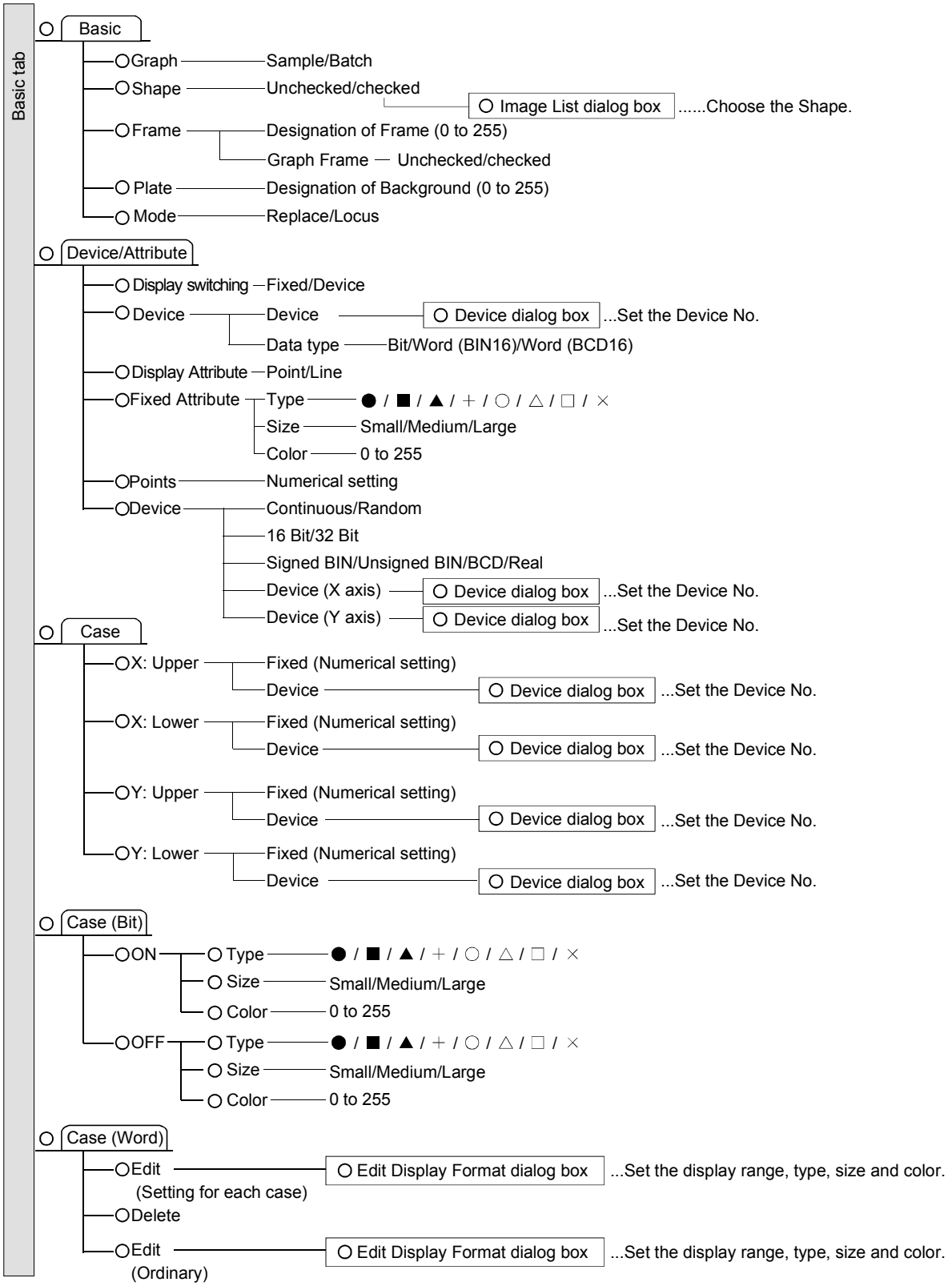


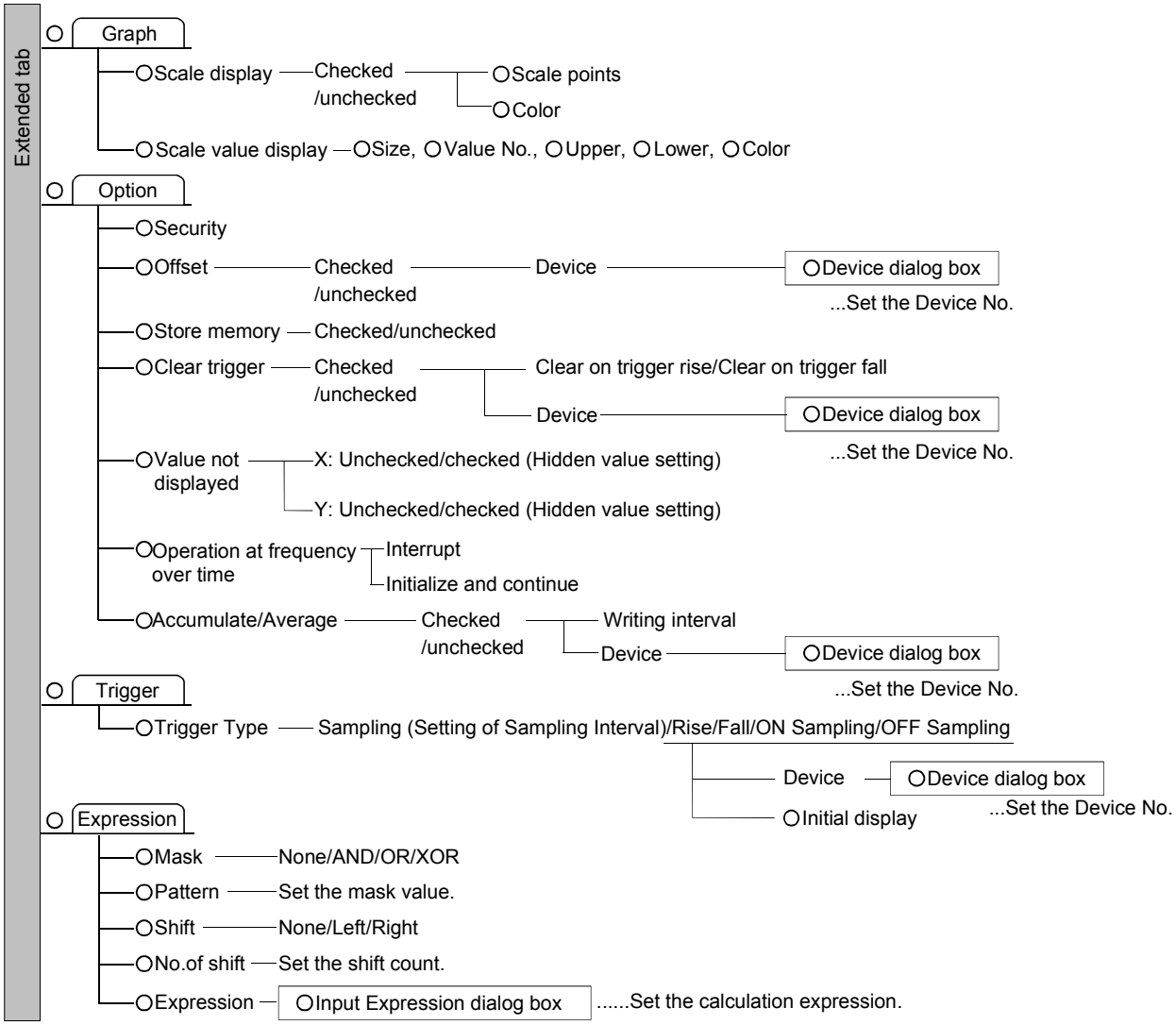
Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Graph : Batch Mode : Locus	<Device/Attribute> tab	Display trigger: "Device" (D300) Points: 4 X axis Device: D100, Y axis Device: D200
<Case(Word)>tab	Case1: Defined case (2==$V), Type: ■, Color: 224 Normally: Type: ●, Color: 255		
<Case>tab	X: Upper (400) X: Lower (0) Y: Upper (400) Y: Lower (0)	<Graph>tab	Scale display: Scale point: 5 × 5 Scale value display : Size: 5 × 5 Upper: 400 × 400 Lower: 0 × 0

(2) Setting items

The scattered chart display function consists of the following setting items.

• "Scatter Chart" dialog box





(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up graph display"→"Setting up scattered chart display" from Contents of Help.

POINT

- Security, offset and expression can be set.
- The scattered chart display function allows up to 24 points to be set on one screen.
- Make setting to avoid a superimpose window to be overlaid on the scattered chart which is not stored into memory.
  If it is overlaid, the overlaid scattered chart part is erased.

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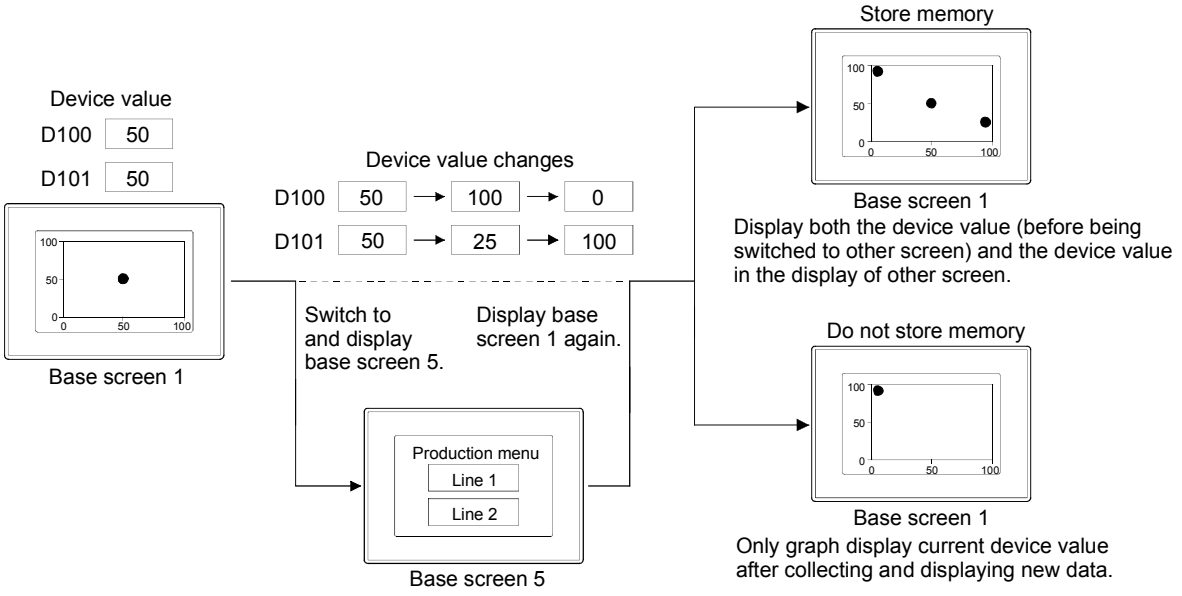
(4) Store memory

Check the store memory before collecting data after the screen has been switched to another.
Be sure to save device values into the internal memory of GOT.
The contents stored in the memory will be erased in the case of GOT reset or power OFF.
The setting for Store Memory is made on the Extended tab.
When no setting is made for Store Memory, the scatter graph executes data collection only when displaying the screen with the graph arranged. If switched to other screen, the collected data will be cleared.

Example: Screen switching operation
Graph type [Sample], X-device: D100, Y-device: D101



<The maximum sampling results which can be stored in the memory>
Up to 2000 points displayed in scatter graph can be saved in the internal memory.
The following shows the upper limit for each graph type of the scatter graph (sample, batch).

- Sample ..... 2000 times
- Batch ..... $\left(\frac{2000}{\text{Points}}\right)$ times (Round off the part after decimal point)

For the case that the number of displayed points exceed 2000, make setting for [Operation at frequency over time] on the Extended tab.

- Interrupt ..... Interrupts data collection
- Initialize and continue ..... Clears the internal memory, erase the scatter graph display and collects data again.

POINT

(1) An error message can be displayed when the storage sampling number has reached the maximum. (refer to Section 5.2.3)
(2) The data stored in memory will be erased according to the following timing.

- When the clear trigger condition is satisfied
- When the number of sampling data available for storage in memory exceeds the maximum (Only when setting [Operation at frequency over time] to [Initialize and continue])
- When GOT is reset or power supply is turned OFF
- Download of project
- Display of build-in memory information
- Execution of utility setup and message display switching (display language switching)

(5) Causes and measures when the graph display is not updated in the set sampling cycle.

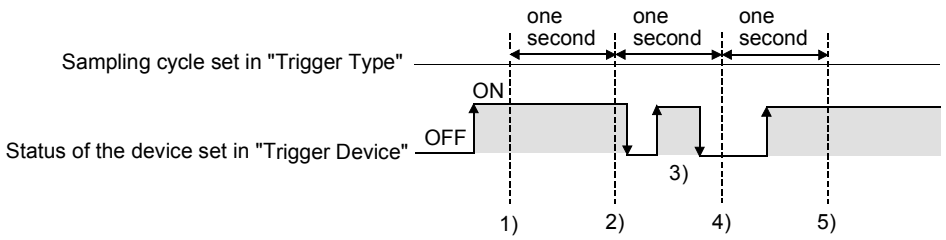
(a) Updated timing at setting "ON Sampling" or "OFF sampling"

When "ON Sampling" or "OFF Sampling" is set, there are cases the graph is not updated in the set sampling cycle.
The causes for this problem and the measures to be taken are explained below.

(i) Causes

The status of the device is checked at the each sampling cycle set in the "Trigger Type".
When the device condition is not satisfied at checking, the display is not updated.

(When setting both "Trigger Type" to "On Sampling" and sampling cycle to one second)



At the timing of 1), the scatter graph is updated.
At the timing of 2), the scatter graph is updated.
At the timing of 3), the scatter graph is not updated because is unmatchable to Sampling.
At the timing of 4), the scatter graph is not updated because is unmatchable to the device condition.
At the timing of 5), the scatter graph is updated.

(ii) Measures

The sampling cycle set using the "Trigger Type" is not depending on the status of the device.
(The sampling cycle is not changed even if turning on or off the device.)
To start the sampling using the device, set as follows.

1. Set "Rise" or "Fall" using "Trigger Type".
2. Program so that turn on or off the device at the timing to update the display using the sequence program.

(b) Updated timing when setting the either following sampling cycle, "Sampling", "ON Sampling" or "OFF Sampling"

If store memory is used when "Sampling", "ON Sampling" or "OFF Sampling" is set, the graph update timing will differ from the set sampling cycle.

(i) Without setting store memory

Counting the sampling cycle is started and reset at the following timing.

- At scatter graph displaying (displaying by screen switching or security level change etc.)
- At security level change

(ii) With setting store memory

Counting the sampling cycle is started and reset at the following timing.

- At starting GOT
- At project download
- At build-in memory information displaying
- At execution of utility setup and message display switching (display language switching)

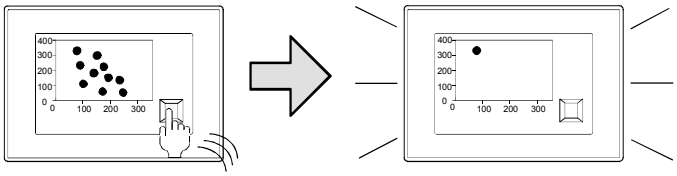
(6) Clear ON trigger recognition timing

The timing when the GOT recognizes a clear ON trigger is the same as the timing set in "Trigger Type" (Trigger tab).
When "Sampling", "ON sampling" or "OFF sampling" has been set in "Trigger Type", hold the ON/OFF status of the device set to clear trigger at the sampling set in "Trigger Type" or longer.

Example of holding the display for the sampling period set by [Display Trigger Type] or longer

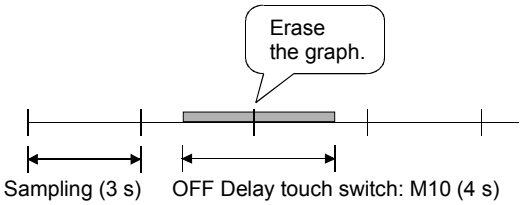
Clear Trigger	:	Set rise timing and M10 for the device
Display Trigger Type	:	Set to sampling (3 s)
Touch Switch	:	Set M10 for the device, bit momentary for Action and 4 s for OFF Delay

The condition of [Display Trigger Type]: Sampling (3 s) is met after pressing touch switch until the clear trigger (M10) turns off by the OFF Delay (4 s), and the graph is erased.



Touch the switch set for the clear trigger

The graph displaed previously erased.



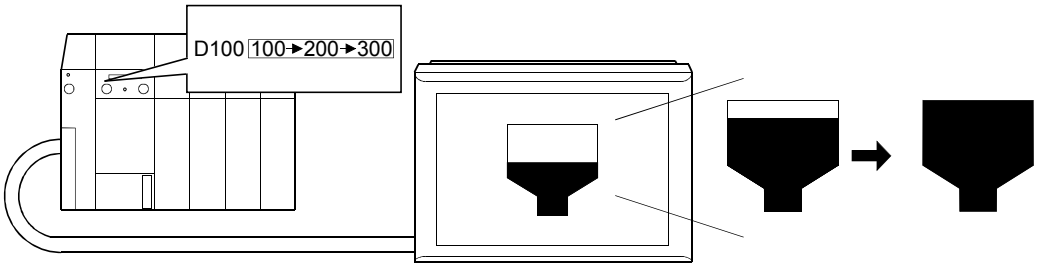
5.4.6 Level display function (shows a word device value as a level)

GOT-A900 series	○	GOT-F900 series	×

This function shows a word device value as a level at the ratio to the upper/ lower limit.

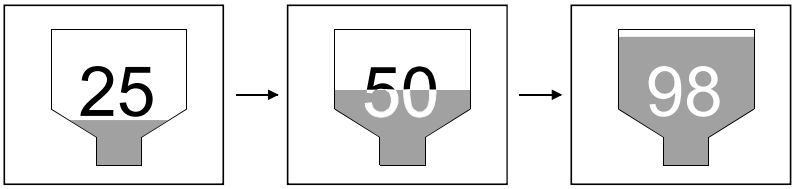
(1) Function outline

(a) Shows a word device value as a level in any closed figure at the ratio to the upper/lower limit.



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Device: D100	<Form>tab	Upper: 300 Lower: 0

(b) Used with the numerical display function (refer to Section 5.1.1) or comment display function (refer to Section 5.2.1).∗1



(Monitor device: D0)

Setting Portion	Settings
<Basic>tab	Device: D0

∗1: On an object of the numerical or comment display function, set the drawing mode (transparent/XOR) which is used to superimpose the object on the level display.

POINT

- Level display can be overlapped with a value or comment of the numerical or comment display function.
- Refer to Section 4.4.2 for overlapping with an object.

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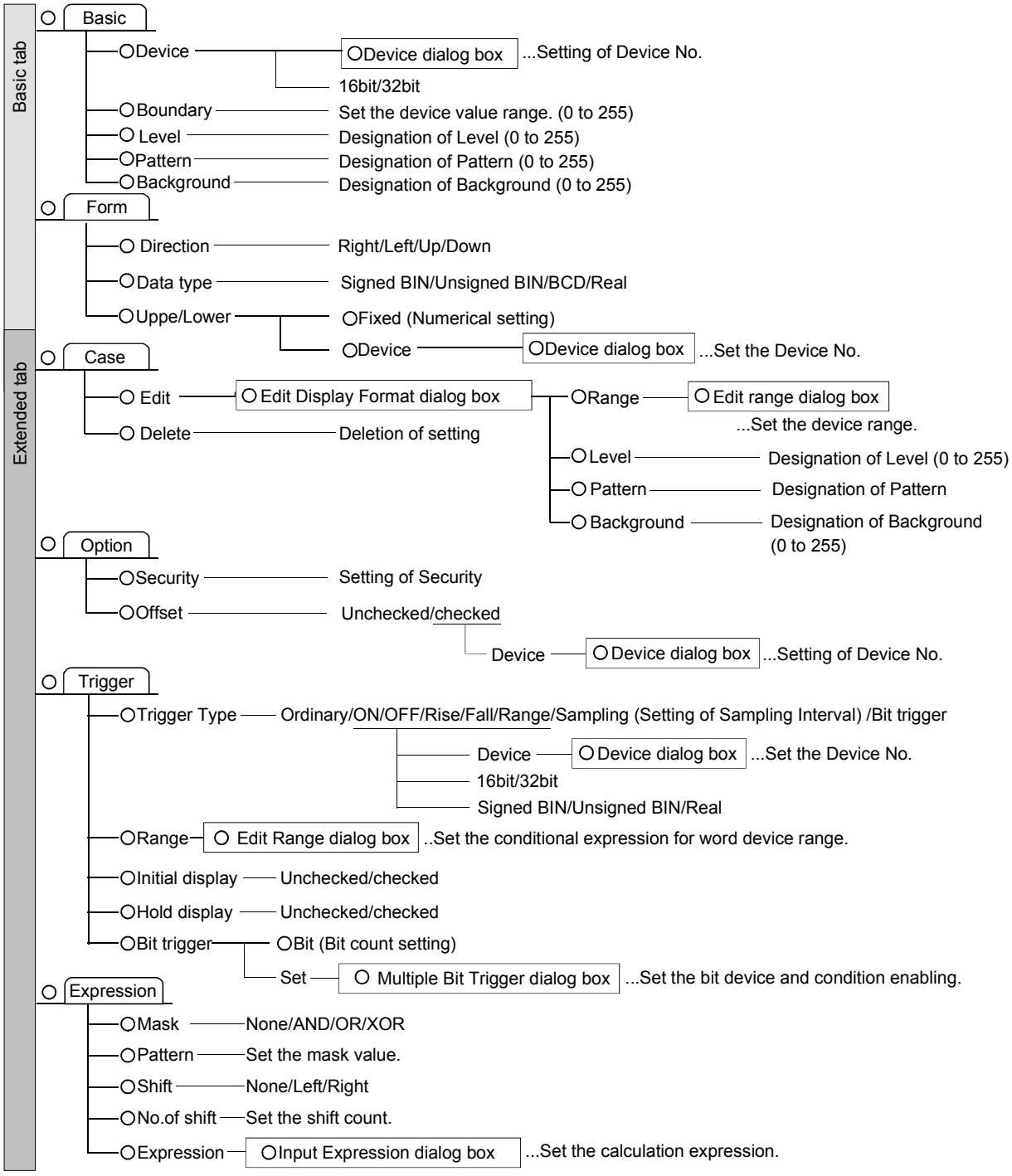
(2) Setting items

The level display function consists of the following setting items.

• "Level" dialog box



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up graph display"→"Setting up level display" from Contents of Help.

POINT

- Security, offset and expression can be set.
- A level can be displayed at top, bottom, left or right of a figure.
- The level display color and filling pattern can be changed when the monitor device value reaches a given value.

5.5 Touch Key Functions (When Touched, Touch Keys Perform such Functions as Device Value Change and Screen Switching)

GOT-A900 series	○	GOT-F900 series	○

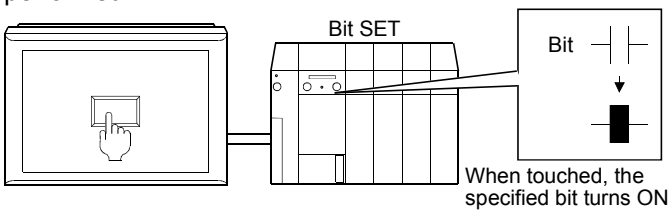
The touch functions are designed to perform the following operations when the corresponding touch keys are touched.

Function name	Operation	GOT-A900 series	GOT-F900 series	Refer to
Bit function	Turns the bit device ON/OFF by touching the key.	○	○	(a)
Word function	Changes the word device value by touching the key.	○	○	(b)
Base switching function	Switches the base screen by touching the key.	○	○	(c), (d), (e), (f), (g)
Window switching function	Switches the window screen by touching the key.	○	×	
Extended function	Switches to the extended function screen such as ladder monitor or test window by touching the key.	○	×	(h)
Station switching function	Switches the station by touching the key.	○	×	(i)
Creation of numerical/ASCII input key	Creates the key for numerical or ASCII input.	○	○	(j)

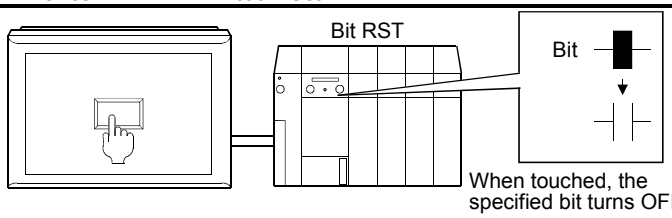
(1) Function outline

(a) Turns a bit device ON/OFF.

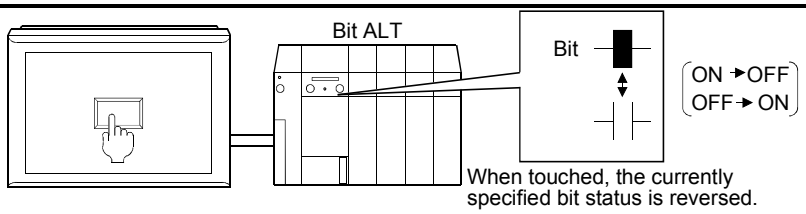
By changing the operation type, any of the following four operations can be performed.



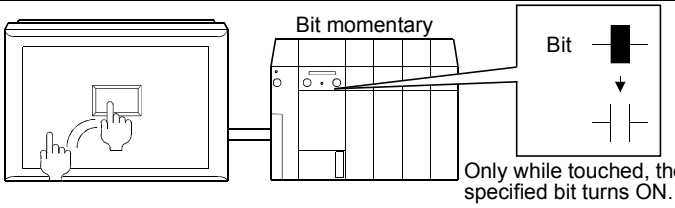
Setting Portion	Settings
<Action>tab	Bit Device: X1 Action: Set



Setting Portion	Settings
<Action>tab	Bit Device: X2 Action: Reset



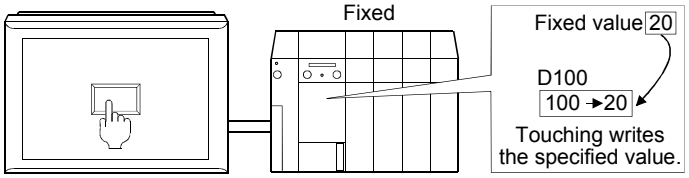
Setting Portion	Settings
<Action>tab	Bit Device: X3 Action: Alternate



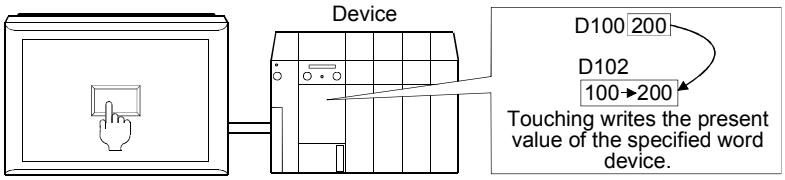
Setting Portion	Settings
<Action>tab	Bit Device: X4 Action: Momentary

(b) Changes the word device value.

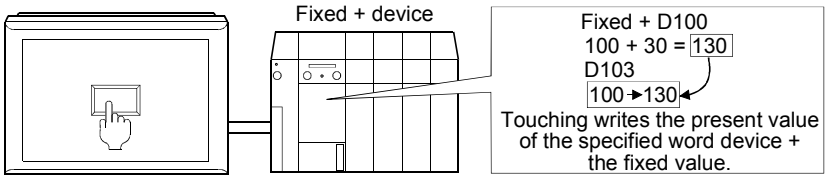
By changing the operation type, any of the following three operations can be performed.



Setting Portion	Settings
<Action>tab	Word Device: D101 Action: Fixed (20)

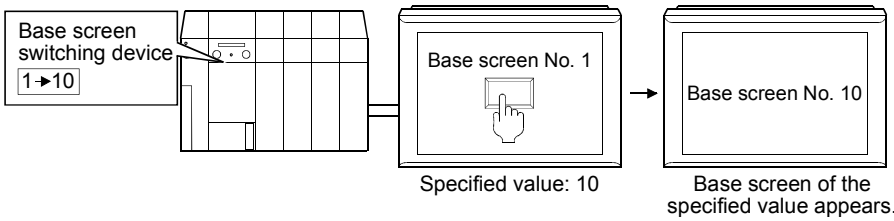


Setting Portion	Settings
<Action>tab	Word Device: D102 Action: Device (D100)



Setting Portion	Settings
<Action>tab	Word Device: D103 Action: Fixed (100) + Device (D100)

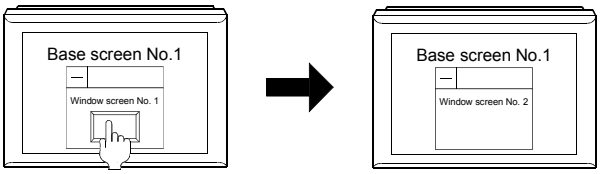
(c) Switches to the specified base screen.



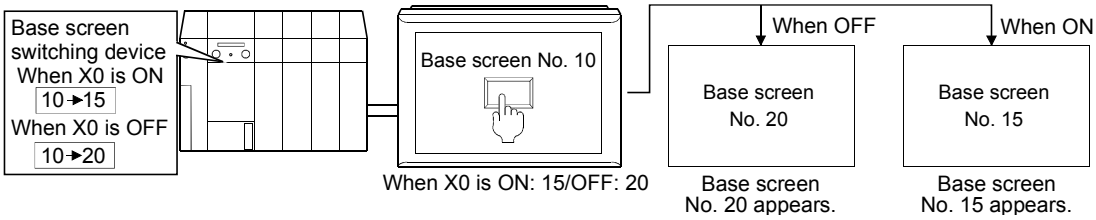
Setting Portion	Settings
<Action>tab	Base Basic Next screen: Fixed (10)

POINT

- Choosing window switching with the operation setting tab enables window screens to be switched.
- By setting this function to window screens, window screens can be switched.



(d) Turning the specified bit device ON/OFF switches between two different base screens.

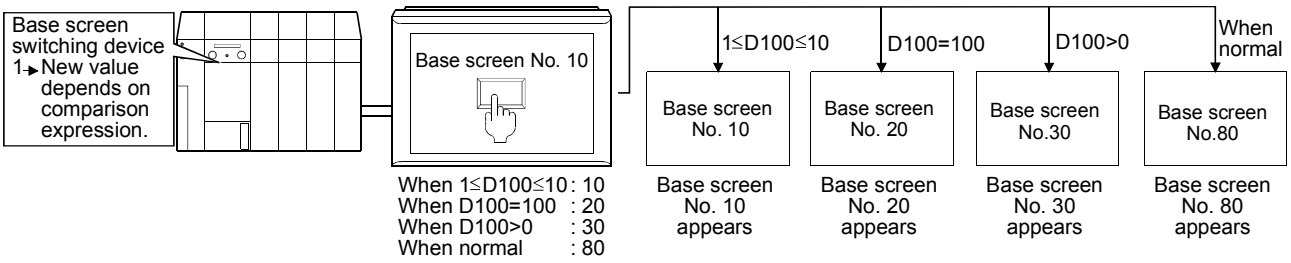


Setting Portion	Settings		
<Action>tab	Base	Basic	Next screen: Device (X0)
		Action	ON: No. (15) OFF: No. (20)

POINT

- Choosing window switching with the operation setting tab enables window screens to be switched.
- By setting this function to window screens, window screens can be switched.

(e) Switches the base screens according to the present value of the specified word device.

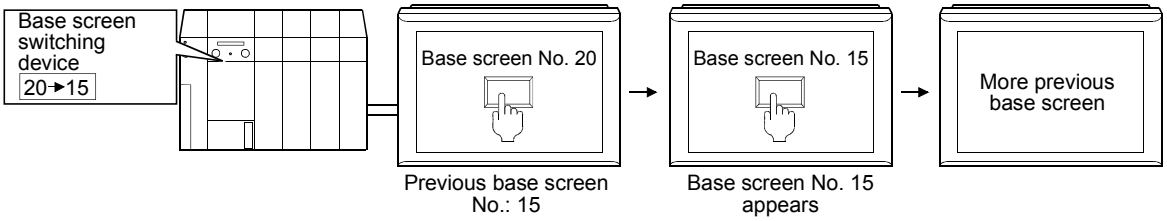


Setting Portion	Settings		
<Action>tab	Base	Basic	Next screen: Device (D100)
		Action	Range: 1<=$$<=10 No.: 10
			:$$=100 No.: 20
			:0<$$ No.: 30
			:Normally No.: 80

POINT

- Choosing window switching with the operation setting tab enables window screens to be switched.
- By setting this function to window screens, window screens can be switched.
- Up to 64 different comparison expressions (including those for normal setting) may be set.

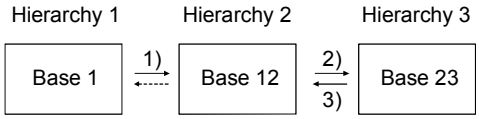
(f) Switches to the higher-level base screen.



Setting Portion	Settings		
<Action>tab	Base	Basic	Next screen: Previous

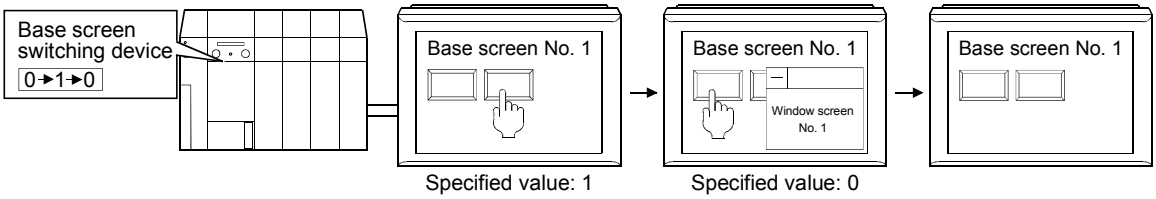
POINT

- The GOT stores the screen switching of base screens hierarchically.
  Pressing the touch switch display, i.e., switches to the base screen set as the upper tier.
  This cycle can be repeated up to 10 times.
  Example)



  When the screens are switched as shown above, 1) → 2) → 3), and then the touch switch on the base screen 12 is pressed, the base screen1, that is set as the upper tier, will be displayed.
- The level information is made invalid when the GOT is powered off.
  Note that if you switch power off, then on again on any midway level, the screen displayed first will be on the top level.

(g) Closes a window screen.

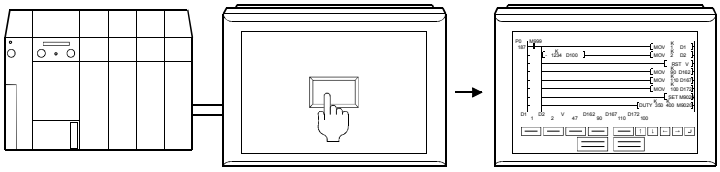


Setting Portion	Settings
<Action>tab	Window Basic Next screen: Fixed (1) Window Basic Next screen: Fixed (0)

POINT

By setting this function to window screens, window screens can be switched.

(h) Starts the ladder monitor function (e.g. extended function).



Setting Portion	Settings
<Action>tab	Exlended Extended action: Ladder monitor

POINT

The touch key (extended) function can be used to set the following different items.

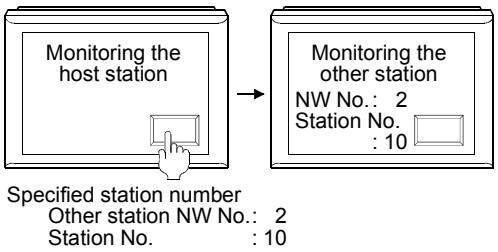
- Utility
- Ladder monitor∗1, ∗2
- Key window
- System monitor∗2
- Test window∗1
- Special function monitor∗1, ∗2
- Start hardcopy
- Abort hardcopy∗2
- Password
- Clock setting∗2
- Clean screen∗2
- Network monitor∗2
- Brightness adjustment∗2
- List editor∗2
- Motion monitor∗2
- Servo amplifier monitor

∗1 Cannot be set when the A95∗GOT/A956WGOT is used.
∗2 Cannot be used, if set, when GT SoftGOT is used.

(i) Performs the station switching function.

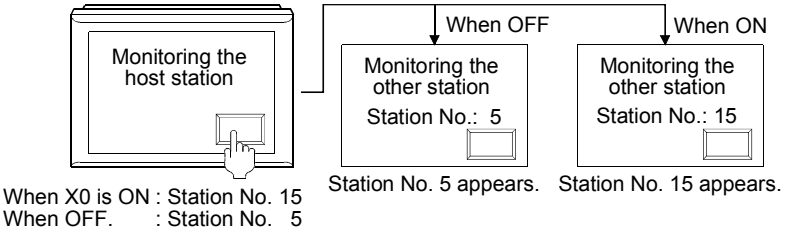
The station switching function allows multiple stations to be monitored on the same screen by switching the object device currently monitored on the data link/network system to the same device of a different station.

1) Switches the monitor destination to the specified station number.



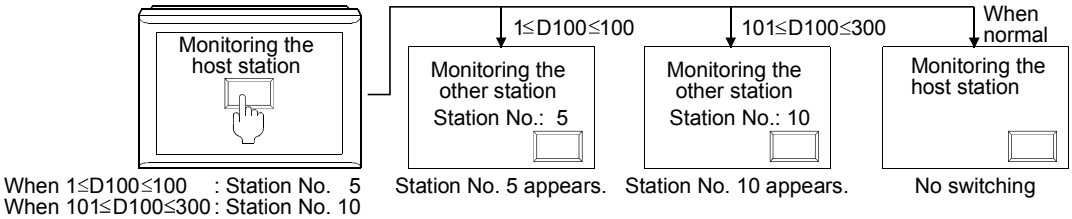
Setting Portion	Settings		
<Action>tab	Station No.	Basic	Next station: Other (NW No.: 2 Station No.: 10)
			Mode :All

2) Switches the monitor destination to the specified station number according to ON/OFF of the specified bit device.



Setting Portion	Settings		
<Action>tab	Station No.	Basic	Next station: Device(X0)
			Mode :All
		Action	ON: Station No.(15) OFF: Station No.(5)

3) Switches the monitor destination to the specified station number when the present value of the specified word device corresponds to the set comparison expression.



Setting Portion	Settings			
<Action>tab	Station No.	Basic	Next station: Device (D100)	
			Mode :All	
		Action	Range: 1<=$$<=100	Switching type: Other Station No.5
			: 101<=$$<=300	Switching type: Other Station No.10
			: Normally	Switching type: Host

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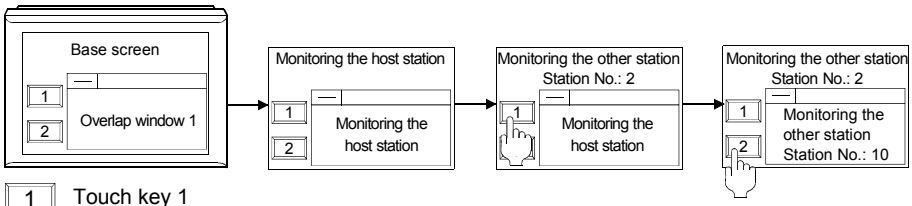
4) Switches between different station numbers according to the screen type (four types of base screen, overlap windows 1, 2, and superimpose window).

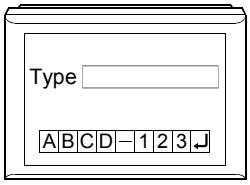


1 Touch key 1
Other station N/W No. :2
Mode : Screen (Base)

2 Touch key 2
Other station N/W No. :10
Mode : Screen (Overlap window 1)

Setting Portion	Settings			
<Action>tab	Touch key 1	Station No.	Basic	Next station: Other (NW No.: 2) Mode :Screen (Base)
	Touch key 2	Station No.	Basic	Next station: Other (NW No.: 10) Mode :Screen (Overlap window1)

(j) Creates keys for numerical and ASCII inputs.



Setting Portion	Settings			
<Action>tab	A	Key code: 0061H	1	Key code: 0031H
	B	Key code: 0062H	2	Key code: 0032H
	C	Key code: 0063H	3	Key code: 0033H
	D	Key code: 0064H	↵	Key code: 000DH
	—	Key code: 002DH		

POINT

- Refer to Appendix 3 for details of key codes.
- Numerical and ASCII input keys are supplied in the template of GT Designer.

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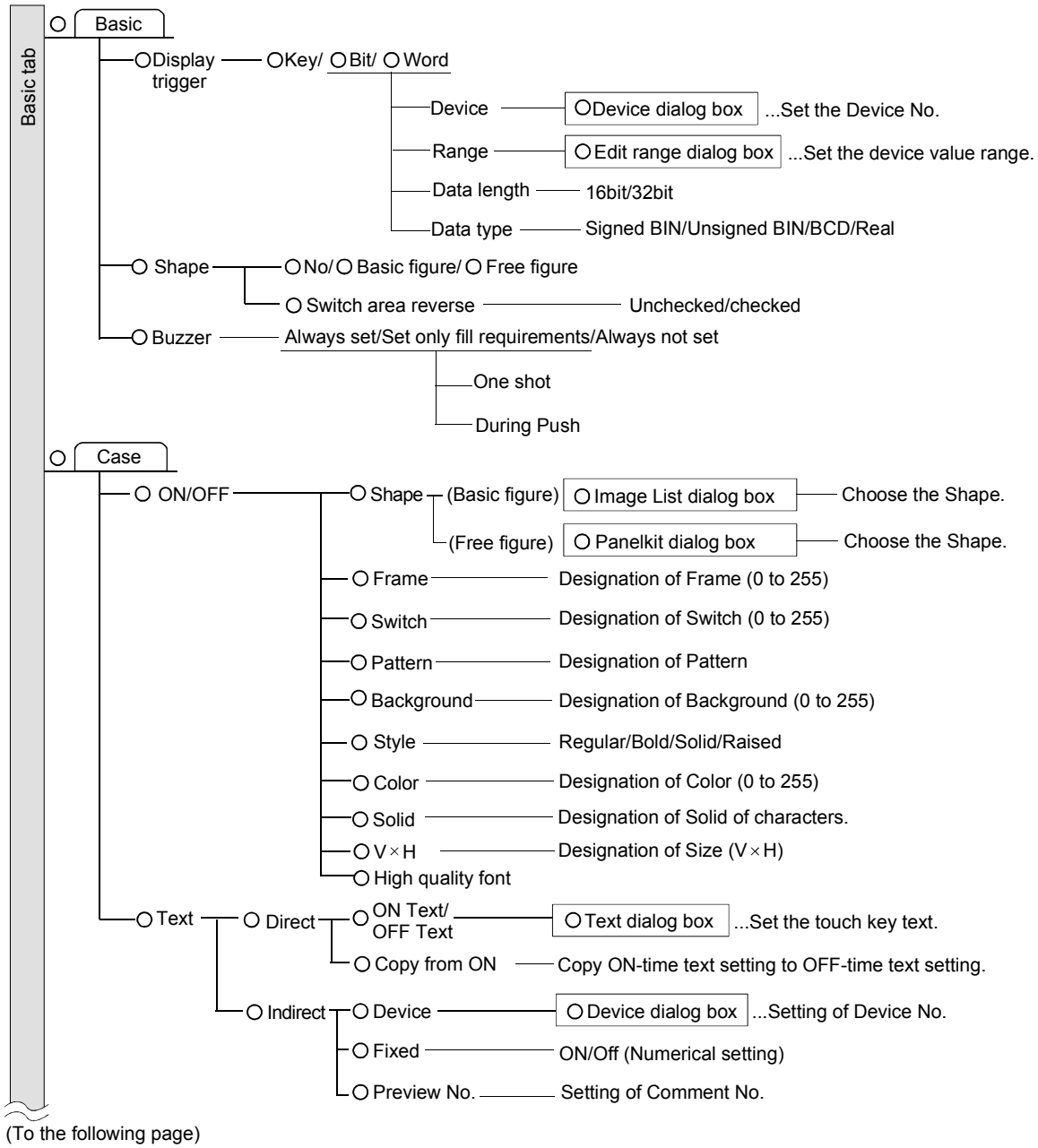
(2) Setting items

The touch key function consists of the following setting items.

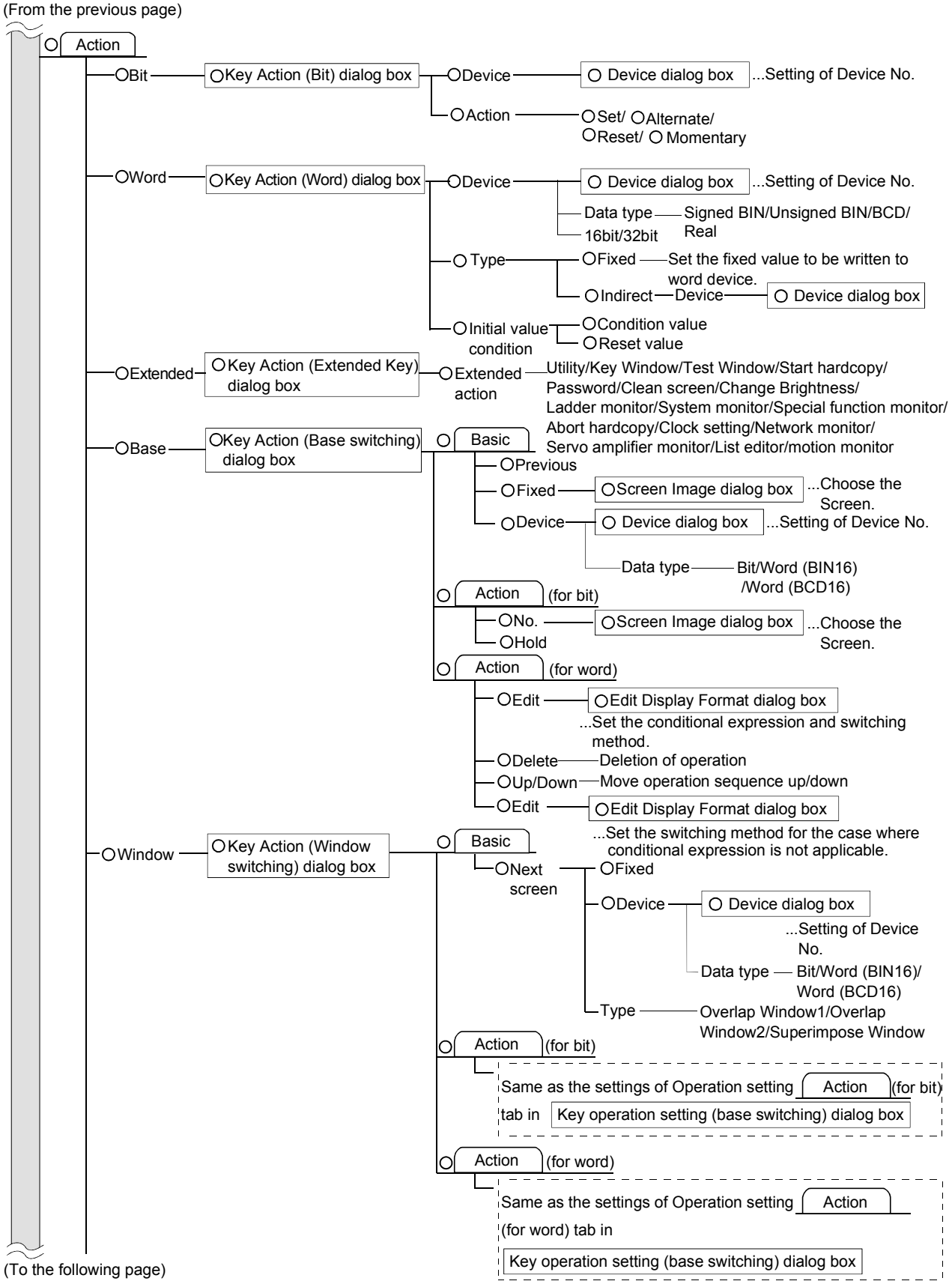
• "Touch key" dialog box

(a) When using the GOT-A900 series



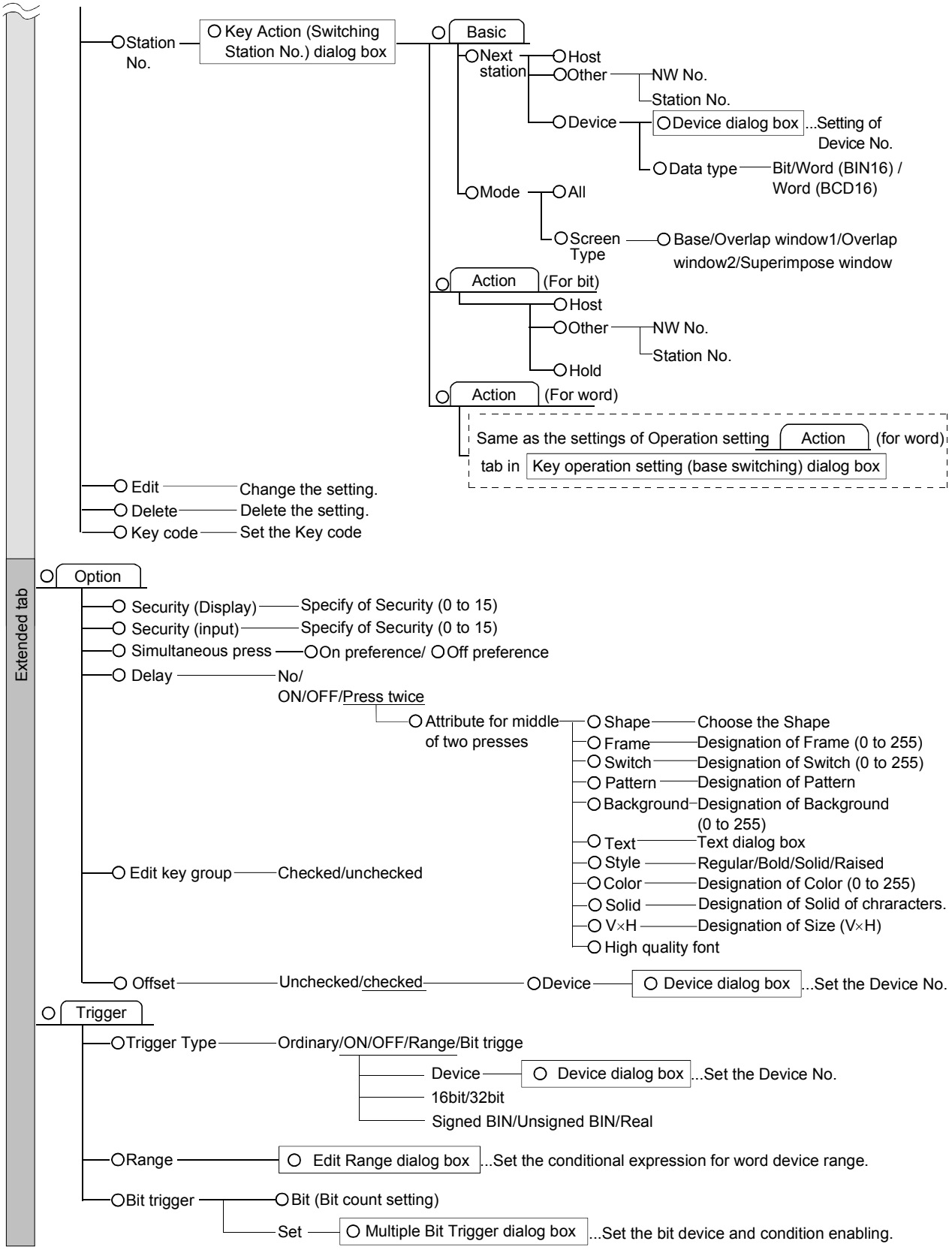
(To the following page)

(From the previous page)

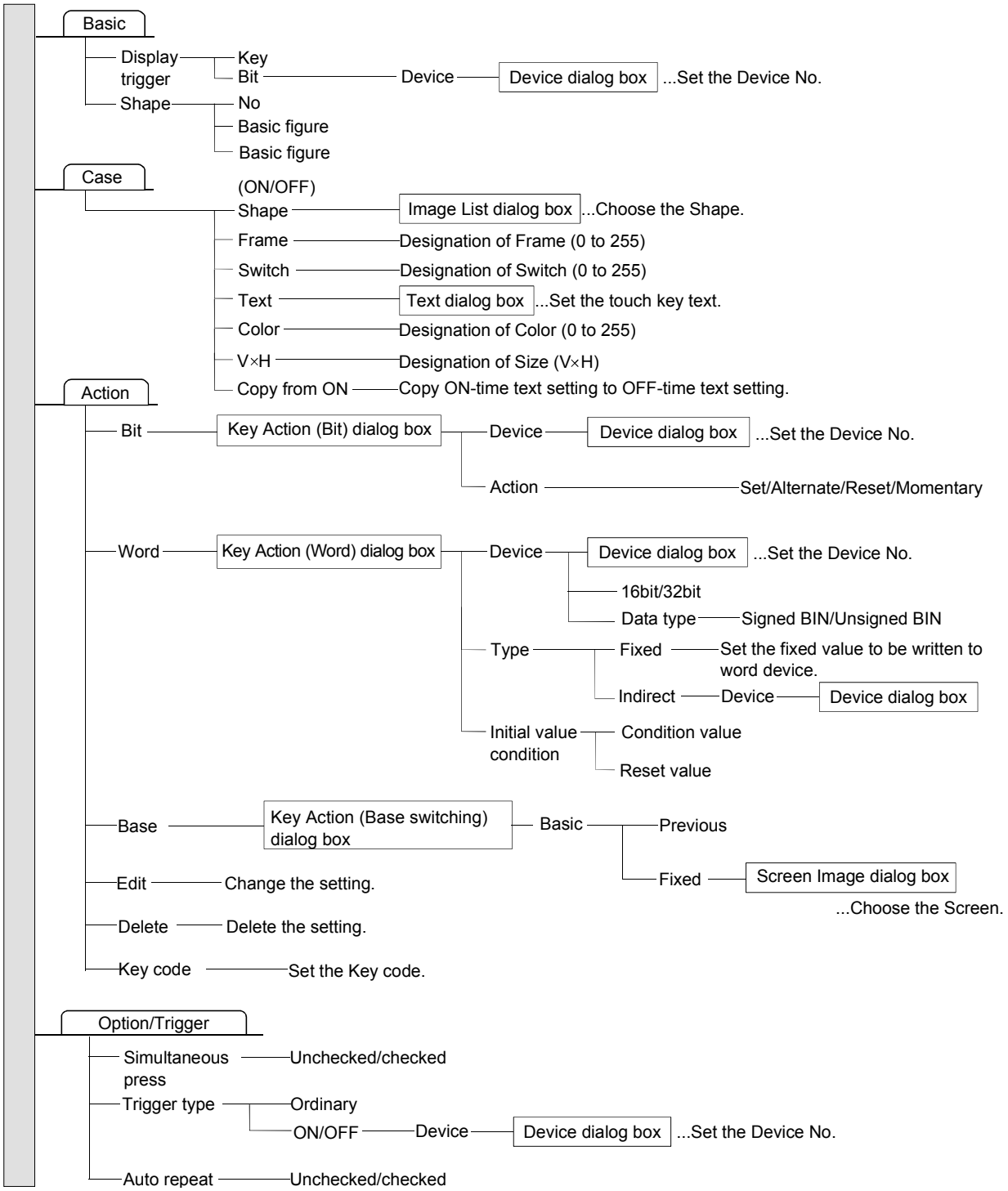


(To the following page)

(From the previous page)



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up touch key"→"Setting up touch key" from Contents of Help.

POINT

(1) When using the GOT-A900 series

- Security can be set to display/hide data and to enable/disable the touch key.
- Idling period from when the key is touched until operation starts (set period, touch again) can be set in increments of one second with a minimum value of one second. (Delay setting)
- Setting can be made to disable touch keys from being touched simultaneously.
- The following multiple functions can be set to one touch key. If the touch key is set as an extended key, multiple functions cannot be set.

Function	Quantity	Operation priority under multiple setting
Bit momentary	20	High
Bit SET	20	
Bit RST	20	
Bit ALT	20	
Word SET	20	
Base screen switching	1	↓
Window screen switching (overlap window 1)	1	
Window screen switching (overlap window 2)	1	
Window screen switching (superimpose window)	1	
Station switching	1	Low

5.6 Data Input Functions

The data input functions write any data to devices.
They are available in the following types.
• Numerical input function .....Writes any value to a device.
• ASCII input function .....Writes any key code to word devices.

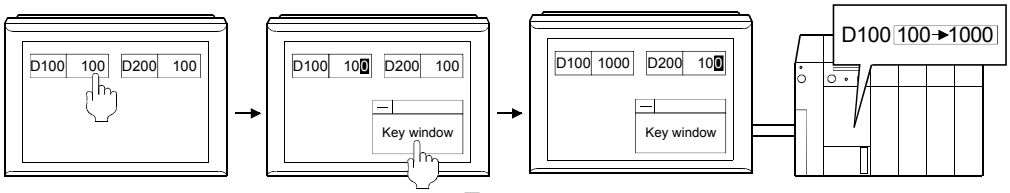
5.6.1 Numerical input function (writes any value to device)

GOT-A900 series	○	GOT-F900 series	○

This function writes any value to the specified word device.

(1) Function outline

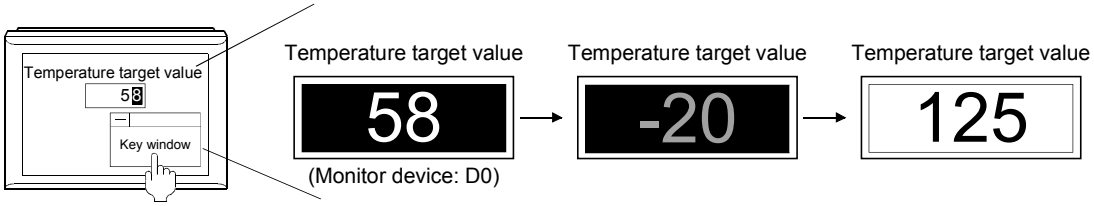
(a) Writes any value to a word device (D100).



Touch an input area to display the input key window. | Numerical input → ↵ | Move the cursor to the next input area.

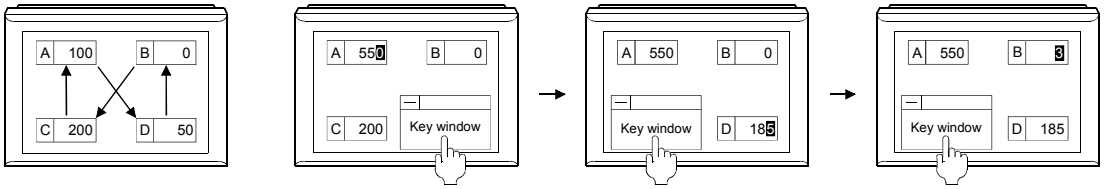
Setting Portion	Settings
<Basic>tab	Device: D100

(b) You can change the display color and attributes when entering a given value to the monitor device. (Only when the GOT-A900 series is used)



Setting Portion	Settings	Setting Portion	Settings
<Basic>tab	Device: D0 Shape: checked	<Case>tab	Case1: Defined case ($W<0), Numeral: 255 Case2: Defined case (100<$W), Numeral:0, Plate: 255

(c) You can set the input cursor display order as you like when there are multiple numerical input areas.



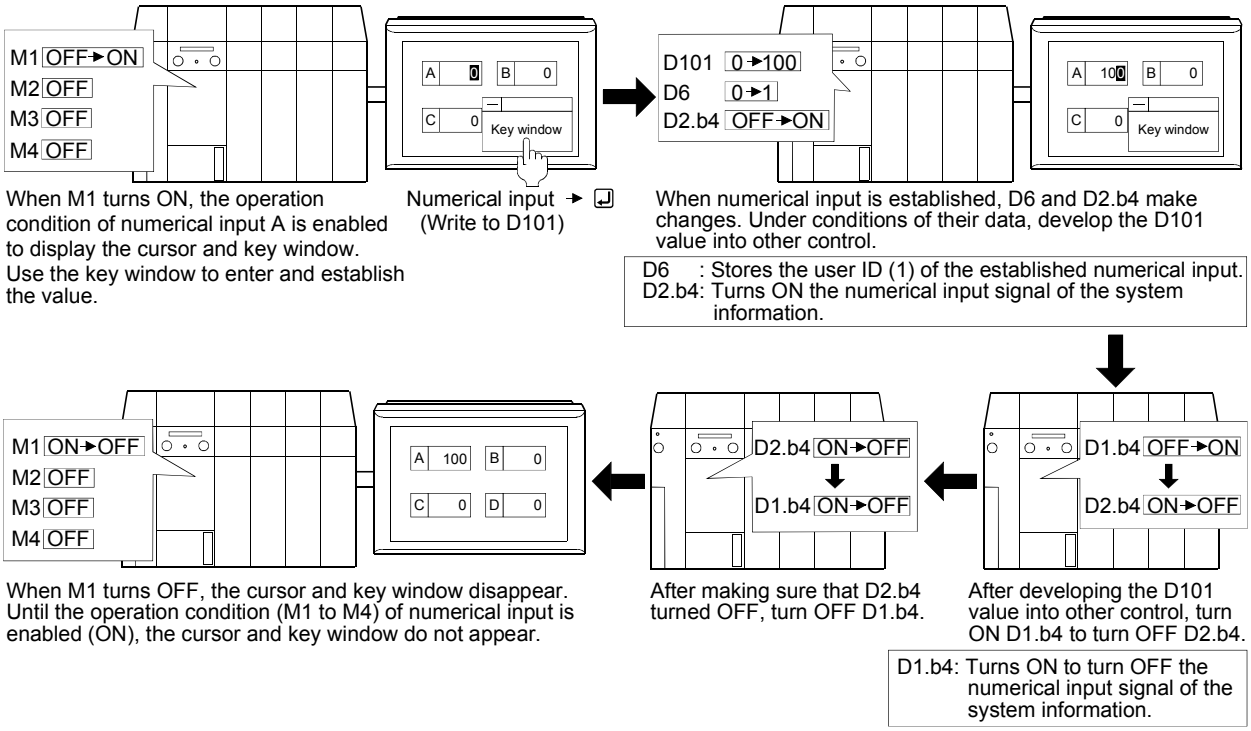
Input cursor moving path | Numerical input → ↵ Move the input cursor to D. | Numerical input → ↵ Move the input cursor to B. | Numerical input → ↵ Move the input cursor to C.

Item	Setting Portion	Settings	Setting Portion	Settings
Numerical Input A	<Basic>tab	Device: D101	<Option>tab	User ID: 1 Move destination ID: 4
Numerical Input B	<Basic>tab	Device: D102	<Option>tab	User ID: 2 Move destination ID: 3
Numerical Input C	<Basic>tab	Device: D103	<Option>tab	User ID: 3 Move destination ID: 1
Numerical Input D	<Basic>tab	Device: D104	<Option>tab	User ID: 4 Move destination ID: 2
Common	Screen auxiliary setting	Cursor Movement Defined key action: User ID order		

(d) Controls the input cursor position on the PLC CPU side and also develops the device value whose numerical input has been established into other control. (Only when the GOT-A900 series is used)
Use the system information function to make sure that the numerical input has been established.
Under the conditions of the "numerical input number storage area" and "numerical input signal" data, develop the numerical input value into other control.

[System information function devices used in this setting example]

Item	Description
D6: Numerical input number storage area	Stores the user ID of the established numerical input function.
D2.b4: Numerical input signal	Turns ON when the numerical input is established.
D1.b4: Numerical input completion signal	Turns ON to turn OFF the numerical input signal.



Item	Setting Portion	Settings	Setting Portion	Settings
Numerical Input A	<Basic>tab	Device: D101	<Option>tab	User ID: 1
	<Trigger>tab	Trigger type: ON, Device: M1		
Numerical Input B	<Basic>tab	Device: D102	<Option>tab	User ID: 2
	<Trigger>tab	Trigger type: ON, Device: M2		
Numerical Input C	<Basic>tab	Device: D103	<Option>tab	User ID: 3
	<Trigger>tab	Trigger type: ON, Device: M3		
Numerical Input D	<Basic>tab	Device: D104	<Option>tab	User ID: 4
	<Trigger>tab	Trigger type: ON, Device: M4		
Common	Project Auxiliary Setting dialog box	Action when condition success: Display cursor and key window. Action when condition fail: Erase cursor, key window and input object.	System Information dialog box	Read device: D1 Write device: D2

POINT

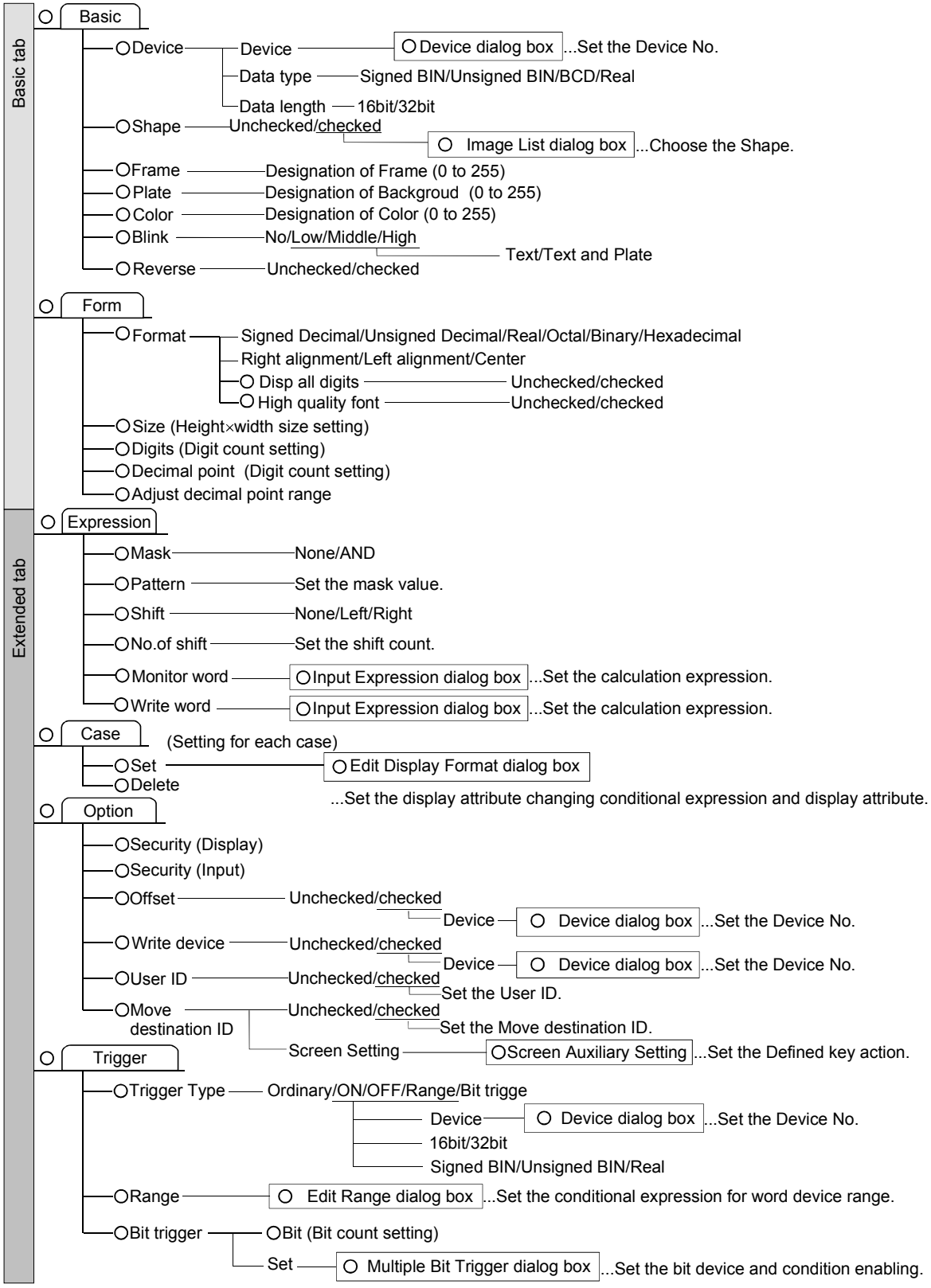
Refer to Section 5.8.2 for details of the system information function.

(2) Setting items

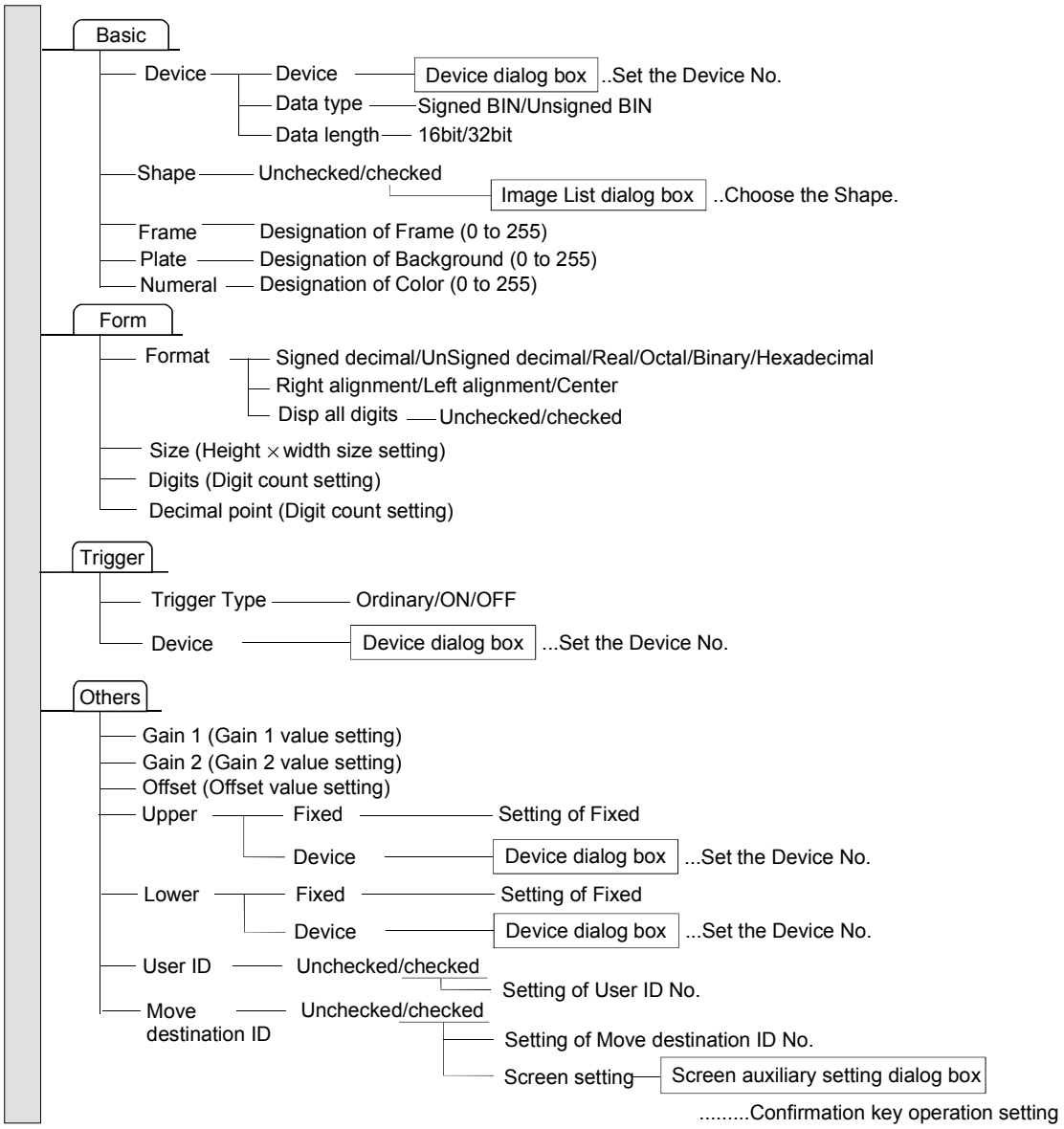
The numerical input function consists of the following setting items.

• " Numerical Input" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up Data input"→"Setting up numerical input" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security, offset and expression can be set.
- The system key window of the GOT is available for value input. (Input keys can be created freely.)
- Values including decimal points can be displayed or input.

(2) When using the GOT-F900 series
- The input keys of the F940GOT are available from the key window and GOT's system window.
- The input keys of the F930GOT are available from the GOT's system window only.

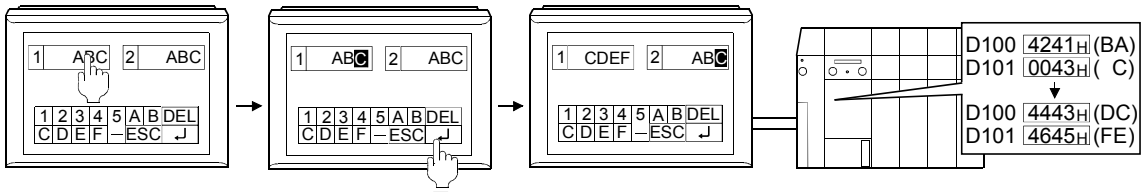
5.6.2 ASCII input function (writes any key code to word devices)

GOT-A900 series	○	GOT-F900 series	○

This function writes any key code to the specified word devices.

(1) Function outline

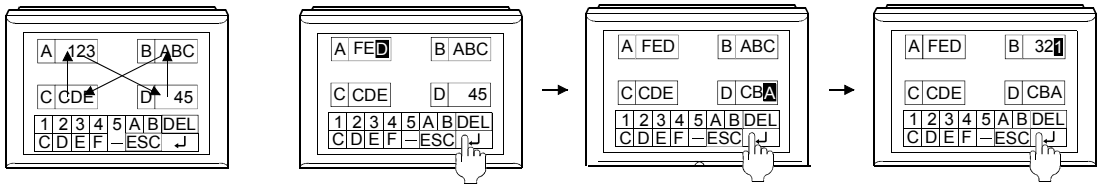
(a) Writes any key code to word devices, starting from the specified one (D100).



Touch an input area to display the cursor for input. | Text input → ↵ | Move the cursor to the next input area.

Setting Portion	Settings
<Basic>tab	Device: D100

(b) You can set the input cursor display order as you like when there are multiple ASCII input areas.



Input cursor moving path | Text input → ↵ Move the input cursor to D. | Text input → ↵ Move the input cursor to B. | Text input → ↵ Move the input cursor to C.

Item	Setting Portion	Settings	Setting Portion	Settings
Ascii Input A	<Basic>tab	Device: D10	<Option>tab	User ID: 1 Move destination ID: 4
Ascii Input B	<Basic>tab	Device: D20	<Option>tab	User ID: 2 Move destination ID: 3
Ascii Input C	<Basic>tab	Device: D30	<Option>tab	User ID: 3 Move destination ID: 1
Ascii Input D	<Basic>tab	Device: D40	<Option>tab	User ID: 4 Move destination ID: 2
Common	Screen auxiliary setting	Cursor Movement Defined key action: User ID order		

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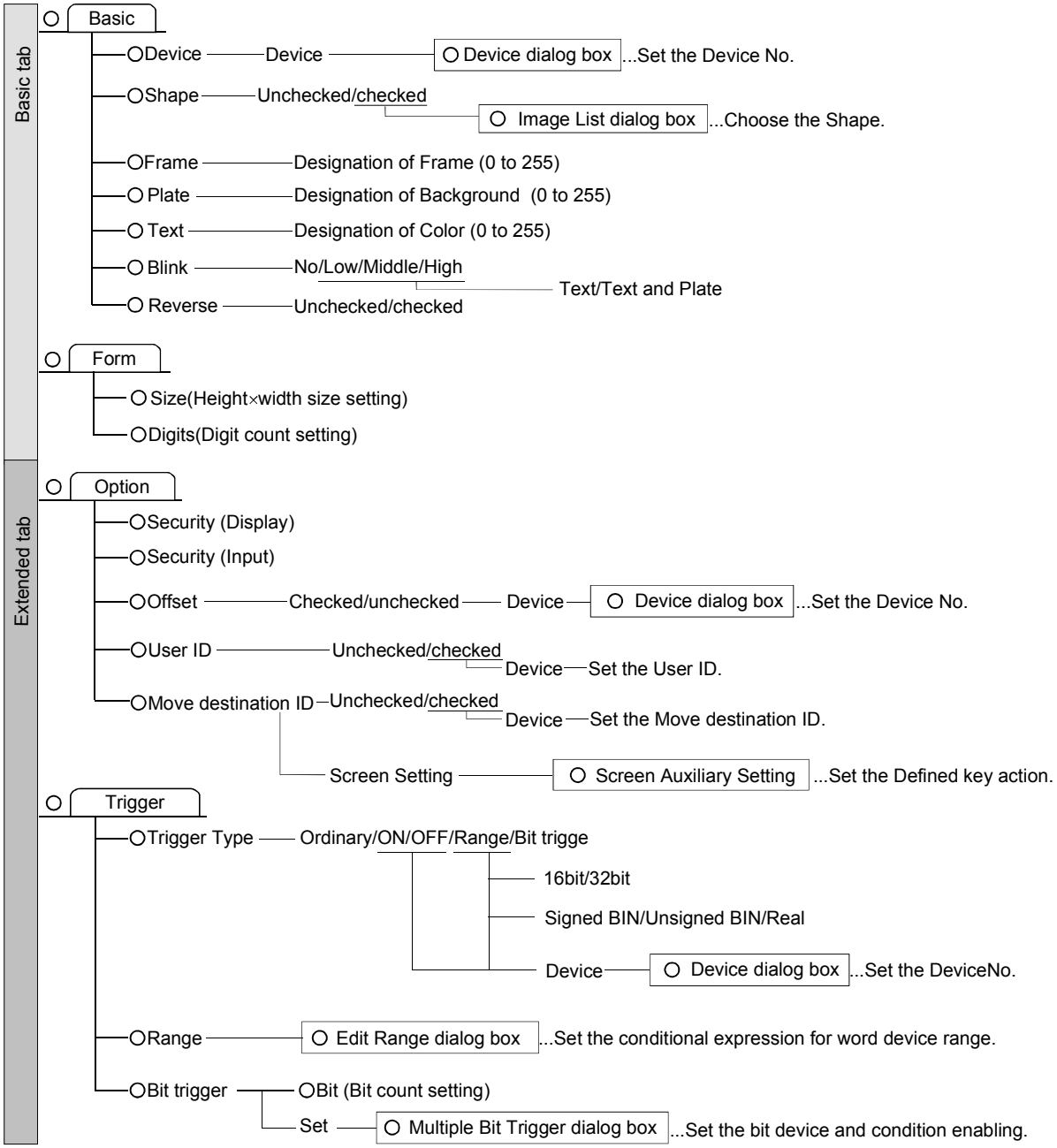
(2) Setting items

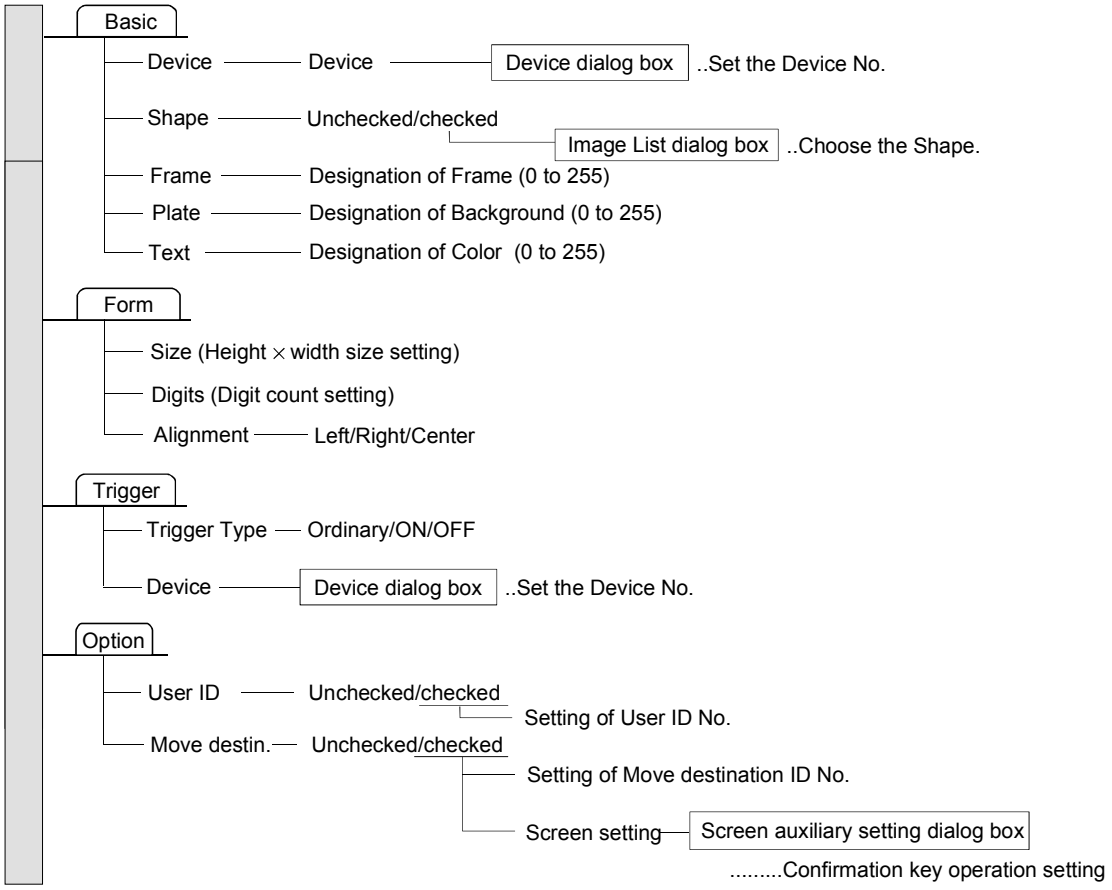
The ASCII input function consists of the following setting items.

• " Ascii Input" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up Data input"→"Setting up ASCII input" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Security and offset can be set.
- Input keys can be created freely.
- By setting the user ID and move destination ID, the position of the next input area can be set freely.

(2) When using the GOT-F900 series
- The input keys of the F940GOT are available from the key window and GOT's system window (10-key pad).
- The input keys of the F930GOT are available from the GOT's system window (10-key pad) only.
- Input keys can be created freely.
- By setting the user ID and move destination ID, the position of the next input area can be set freely.

5.7 Report Function (Prints Values Stored in Devices or Buffer Memory)

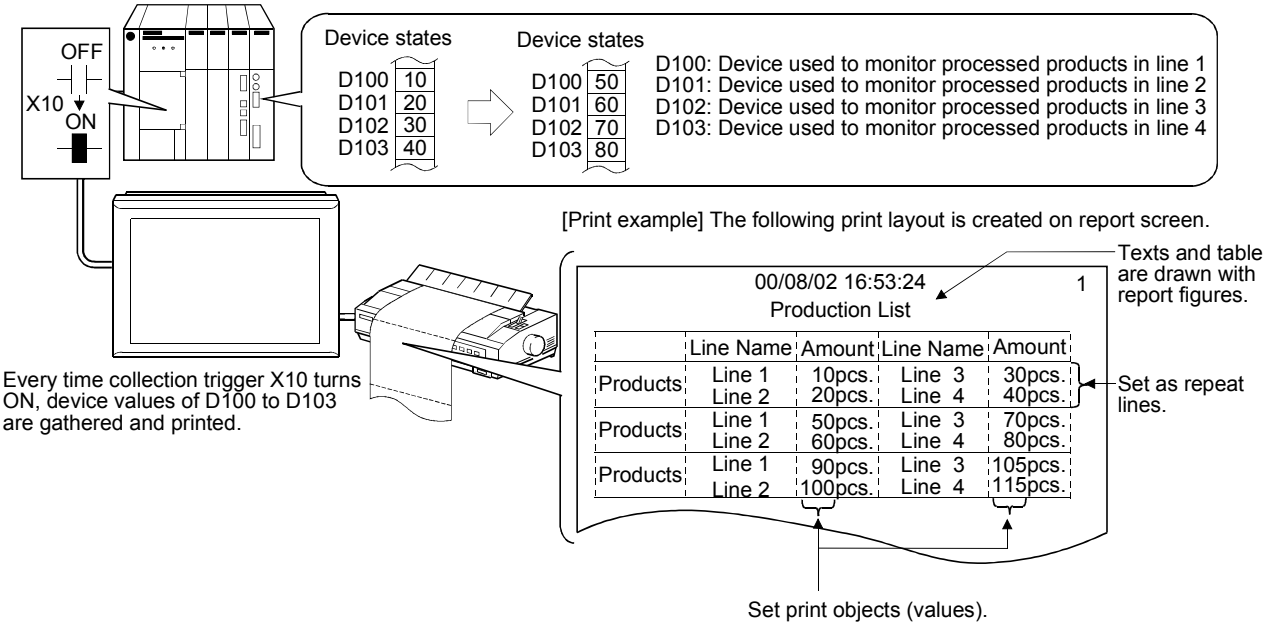
GOT-A900 series	○	GOT-F900 series	×

This function gathers and prints numerical data stored in the word devices or the buffer memory of a special function module every time a data collection trigger occurs, or prints numerical data and comments associated with bit device ON/OFF.

(1) Function outline

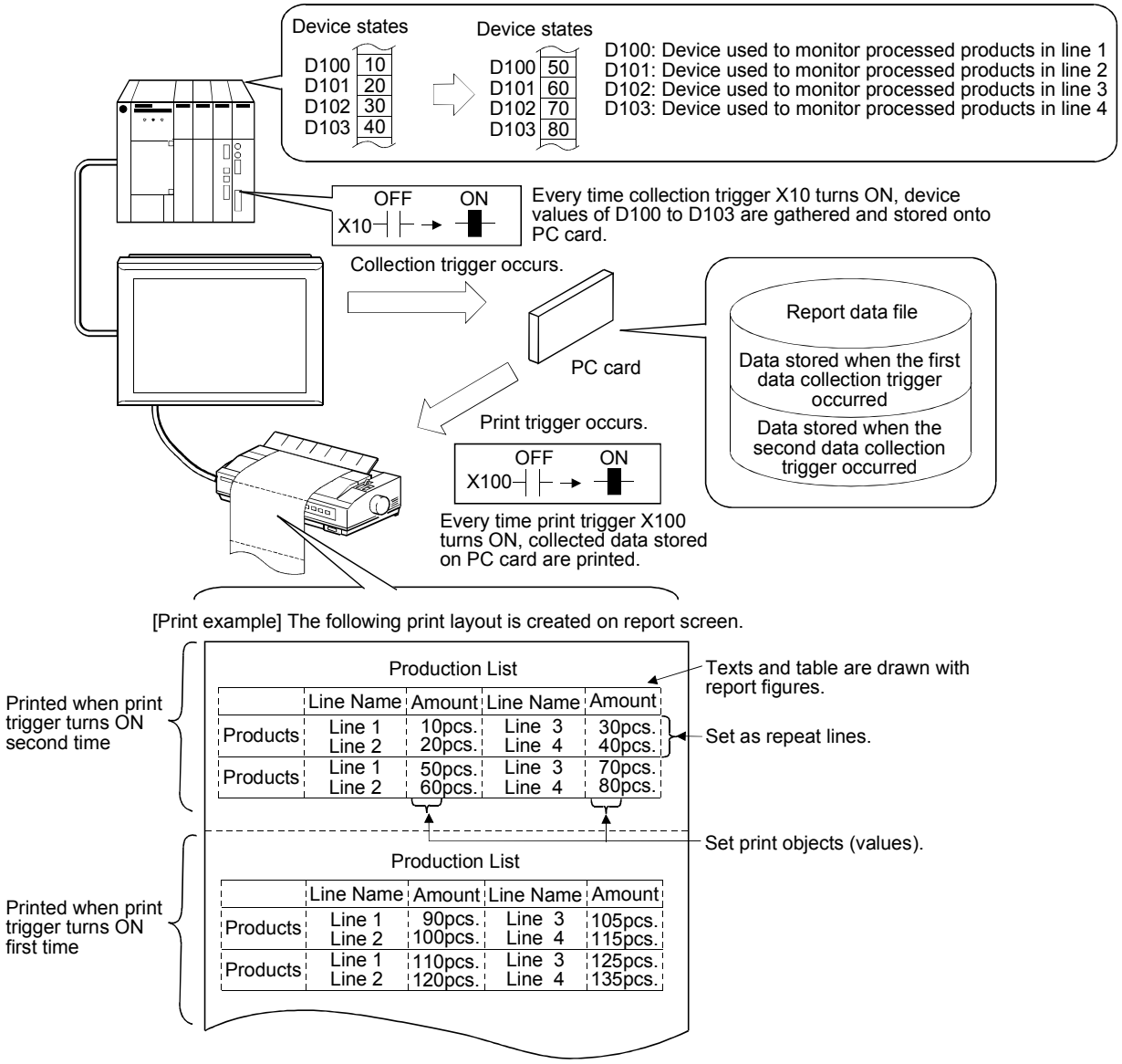
(a) Gathers and prints data per data collection trigger. (Real-time report)

The current data and next data are printed continuously without the printer paper page being renewed.



Setting Portion		Settings
Report Comment Setting dialog box		Trigger watch cycle: 3 minutes (Initial)
Edit Parameter dialog box	<Format/Trigger tab>tab	Report style : Real/cont. Page No. : print (at right top) Collect trigger type : Rise (X10)
Numerical Print dialog box	<Basic>tab	Set to D100, D101, D102 and D103, respectively. Device : D100 to D103 Print style : Unsigned decimal Digits : 3

(b) Gathers and stores data onto the PC card per data collection trigger. Then, prints the data stored on the PC card when a print trigger occurs. (Logging report)
Before printing, the printer paper page is renewed.



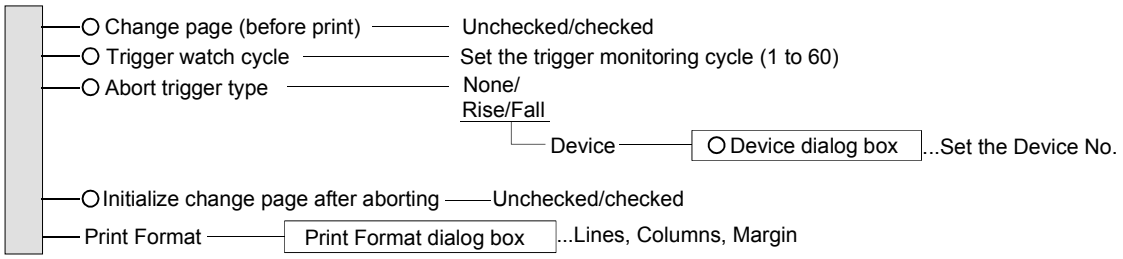
Setting Portion		Settings
Report Comment Setting dialog box		Trigger watch cycle: 3 minutes (Initial)
Edit Parameter dialog box	<Format/Trigger tab>tab	Report style : Log/page Page No. : Not print Collect trigger type : Rise (X10) Print trigger : Rise (X100)
	<Log>tab	Report num. : 1 Sampling num. : 2 Over processing : Overwrite Delete trigger type : Print
Numerical Print dialog box	<Basic>tab	Set to D100, D101, D102 and D103, respectively. Device : D100 to D103 Print style : Unsigned decimal Digits: 3

(2) Setting items

The report function consists of the following setting items.

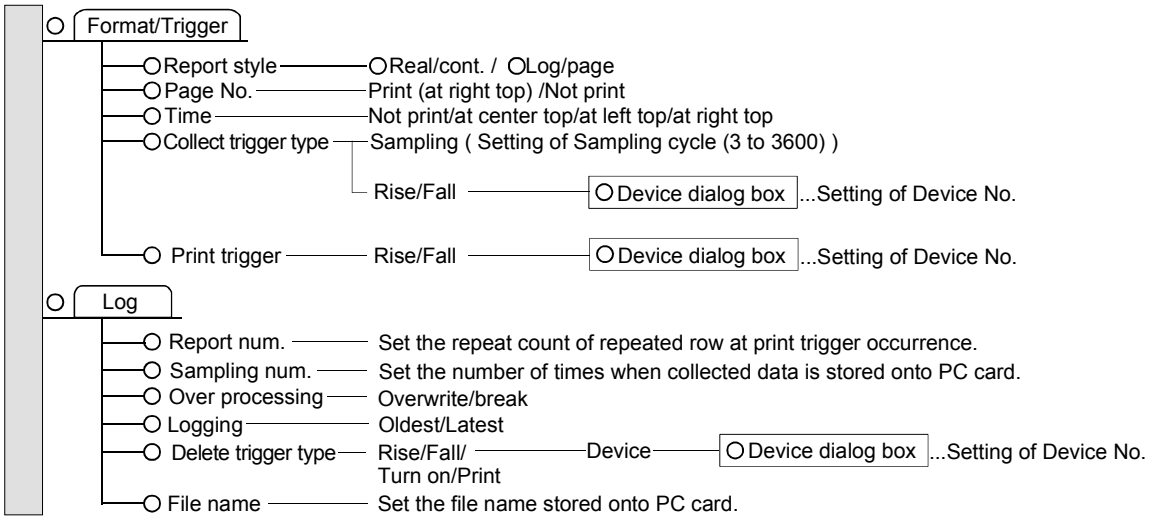
• [Report Common Setting] dialog box

Make setting used commonly to all report screens.



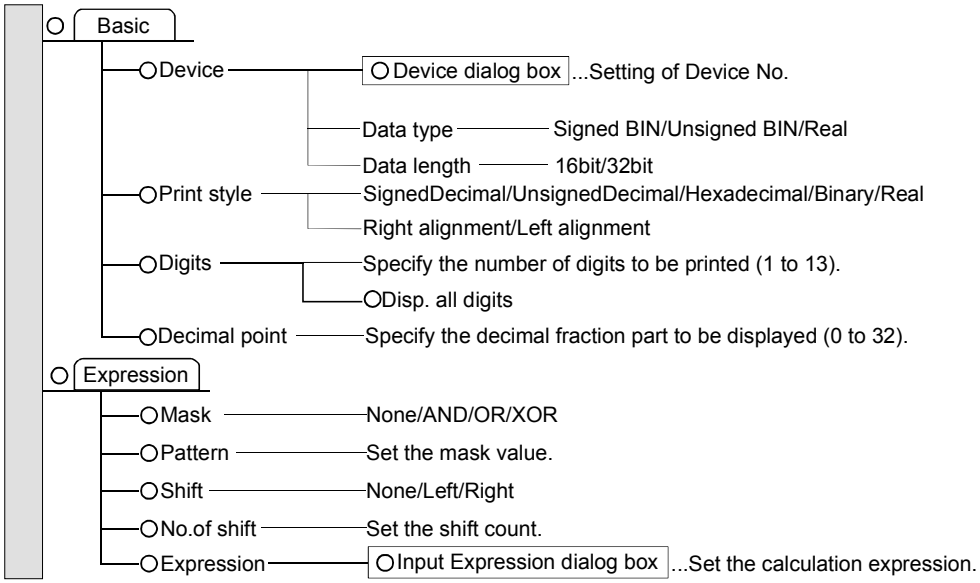
• [Edit Parameter] dialog box

Set the report type and operations to each report screen.



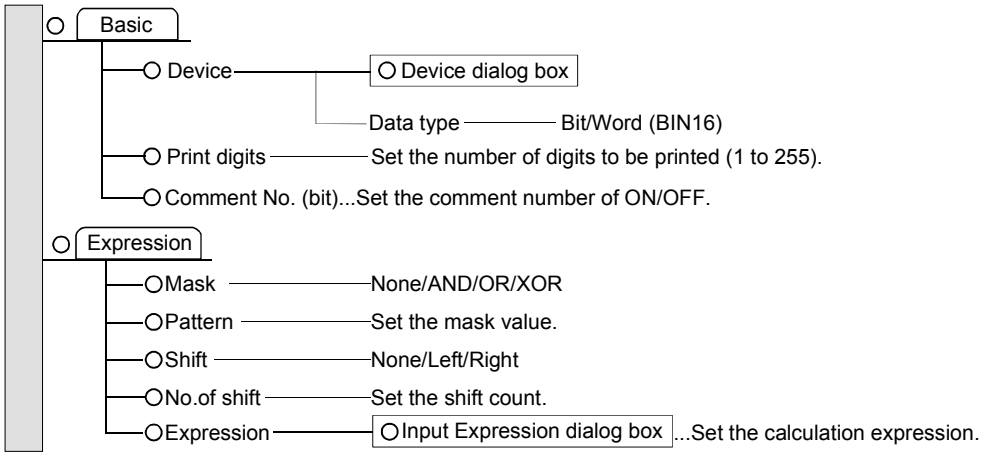
• [Numerical Print] dialog box

Set the print position, print device, print format and others of the numerical data to be printed on report paper.



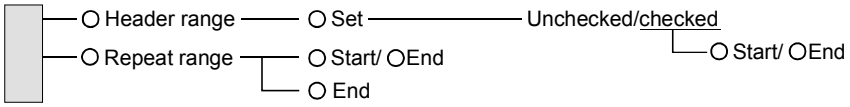
• [Comment Print] dialog box

Set the print position, print device, print format and others of the comment data to be printed on report paper.



• [Header/Repeat Range] dialog box

Set the header (title, etc.) range on the report screen and the range where printing will be repeated per data collection trigger.



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up Report Function"→"Introduction-Report Function" from Contents of Help.

POINT

- For restrictions on the report function, refer to Section 4.3.1.
- You can print the numerical data of word devices and special function module's buffer memory in decimal or hexadecimal.
- You can print numerical data and comments associated with bit ON/OFF.
- You can print the rules and characters drawn on the report screen. It should be noted that the report screen displays all rules in continuous line but vertical rules are actually printed as "-----".
- You can register data of up to eight reports (eight report screens) to a single project.
- You can set up to 256 points of print objects (values, comments) on a single report screen.
- You can perform data operations..

5.8 Other Object Functions

This section explains the objects which have various functions other than the monitor and data input functions. There are the following other object functions.

- Hardcopy function.....Prints a displayed monitor screen on a printer.
- System information function.....Confirms the GOT operating status on the PLC CPU.
- Observe status function.....Writes to the PLC CPU when a condition is enabled.
- Floating alarm function .....Causes comments associated with ON bit devices to flow from right to left on a base screen.
- Recipe function .....Writes the specified data to devices or writes and saves device values in the specified device range to a PC card.
- Sound function .....Plays the touch sound of a touch key or a sound (sound file in WAV form) in the observe status function.
- Test function.....Shows a test window during monitor screen display to allow a device value to be changed.
- Barcode function.....Writes the data read with a barcode reader to the PLC CPU.
- Operation panel function .....Enables operation from an external operation panel connected to the GOT.
- Time action function.....Performs device write or similar operations at the specified times of day on the specified days of week.
- Sampling function .....Gathers data at specified intervals or on bit condition and shows them as a graph.
- Script function .....Controls a GOT display under the GOT side program (script).
- Video display function.....Displays the picture taken with a video camera in the GOT video window.
- RGB window display function...Displays the personal computer screen on the GOT.

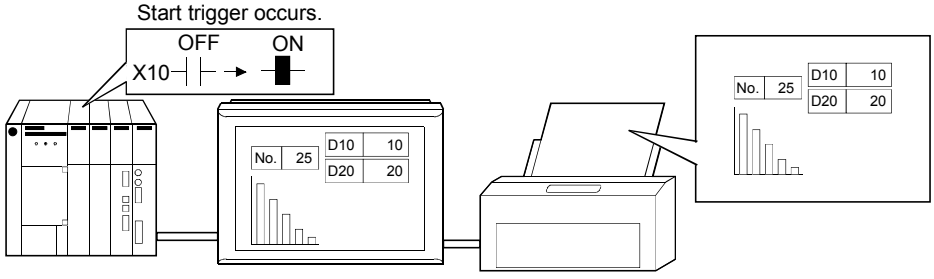
5.8.1 Hardcopy function (prints a monitor screen or converts it into image file)

GOT-A900 series	○	GOT-F900 series	○

This function prints the current monitor screen of the GOT on a printer or saves it onto a PC card.

(1) Function outline

(a) Prints the current monitor screen of the GOT on a printer according to ON/OFF of a bit device.

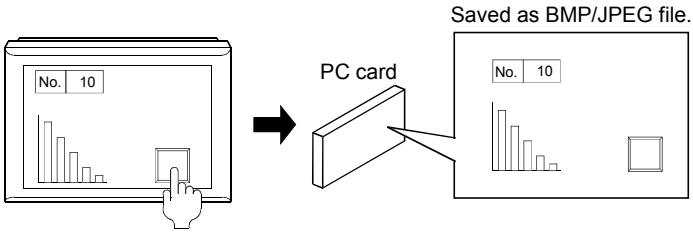


Setting Portion	Settings
Hardcopy dialog box	Start trigger: X10

POINT

- When turning on or off the hard copy start trigger or abort trigger with a specified bit device, keep the ON or OFF status of the specified bit device for the period set at Trigger Watch Cycle or more.
- When the touch key function is used to turn ON the hardcopy starting trigger, set the operation type to "Bit SET" or "Bit ALT". If you set it to "Bit momentary", the hardcopy function is not performed.
- If operate (touch) the touch switch when the bit device for hardcopy start trigger is turned ON and the hardcopy is about to start, the hardcopy function is not performed.
- The hard copy function may not be started if the GOT screen is being operated. In such a case, execute the hard copy function again after the GOT screen operation.

(b) Saves the current monitor screen of the GOT onto a PC card in BMP/JPEG format.
Instead of a bit device, a touch key (extended) may also be used to determine the save timing. (Both the PC card saving and touch key (extended) functions may be used only when the GOT-A900 series is used)



Touch the touch key (extended). ＊1

Setting Portion	Settings
Hardcopy dialog box	Target: PC card (PCMCIA)

＊1: Set the operation setting of the touch key to the extended (hardcopy) function.

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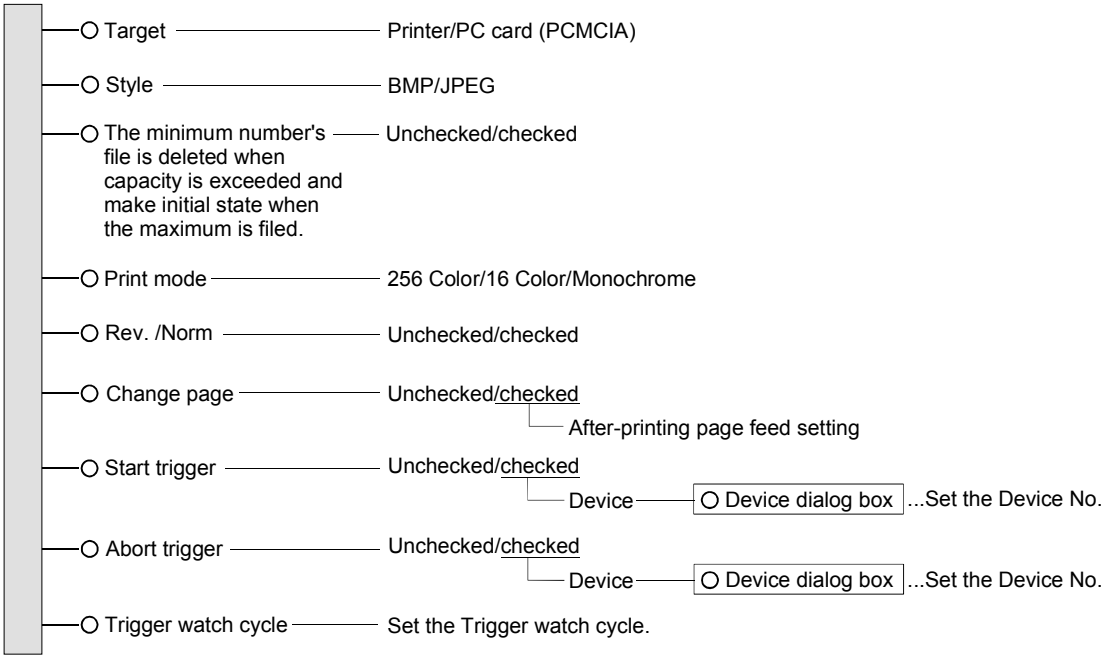
(2) Setting items

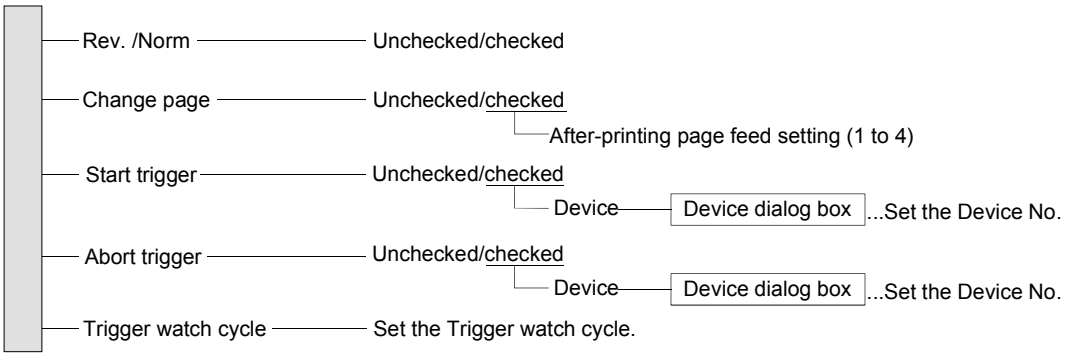
The hardcopy function consists of the following setting items.

• "Hardcopy" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up Other Object Function"→"Setting up Hardcopy" from Contents of Help.

POINT

(1) When using the GOT-A900 series

- For restrictions on the hardcopy function , refer to Section 4.3.1.
- When using the hardcopy function, always install the extended function operating system (ESC printer/PCL printer) to the GOT.
- If a hardcopy is executed with the GOT in the screen save status, video pictures will not be output correctly in hardcopy. When making a hardcopy of the monitor screen which displays a video picture, start a hardcopy after making sure that the GOT is not in the screen save status.

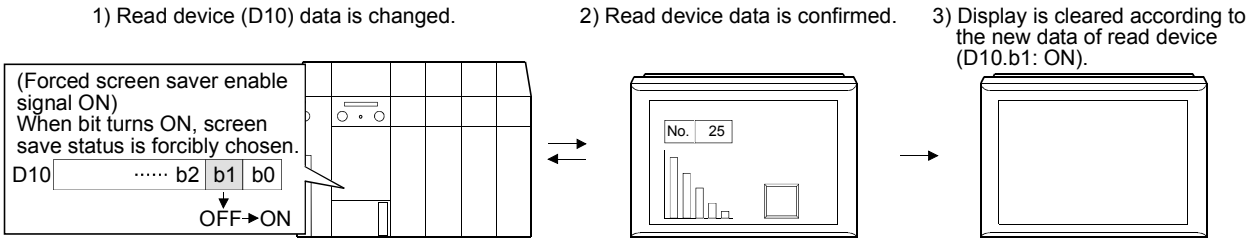
5.8.2 System information function (confirms the GOT operating status on the PLC CPU)

GOT-A900 series	○	GOT-F900 series	○

This function confirms the GOT operating status on the PLC CPU or transmits the information on the GOT900 series operating status from the PLC CPU to the GOT.

(1) Function outline

(a) Reads information on the GOT operating status from the PLC CPU and controls the GOT operating status.



Setting Portion	Settings
System Information dialog box	System Signal 1: D10

POINT

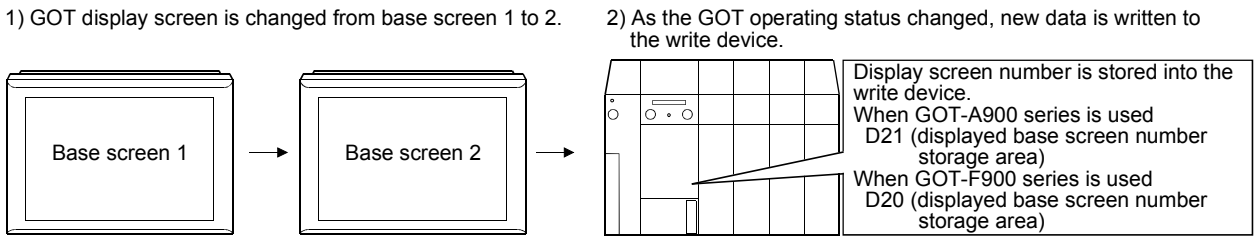
The GOT reads the following GOT operation states from the PLC CPU.

- Automatic screen saver disable signal
- Key code read completion signal
- Barcode input disable signal
- Key-in disable signal
- Hardcopy monochrome print signal
- GOT error reset signal
- Buzzer output signal
- Current Recipe No. ＊2
- Forced screen saver enable signal＊1
- Numerical input read completion signal＊1
- Barcode input read completion signal
- Hardcopy setting enable signal
- Hardcopy reverse video signal
- External I/O function's output signal area
- Buzzer one-shot output signal

＊1 System information with which GOT-F900 series is compatible

＊2 System information with which only GOT-F900 series is compatible

(b) Writes the GOT operating status to the PLC CPU.



Setting Portion	Settings
System Information dialog box	<GOT-A900 Series> System signal 1: D20 On-screen Base Screen Number: Checked <GOT-F900 Series> On-screen Base Screen Number: D20

POINT

The following information can be written to the PLC CPU every time the GOT operating status changes.

- GOT error code
- On base screen number∗1
- On window screen number
- Numerical value input number
- Current cursor position∗1
- Hardcopy output signal
- Recipe processing signal
- GOT error detection signal
- Printer error detection signal
- Barcode input signal∗1
- Human sensor detection signal
- Currently printed report number
- Superimposed screen number 1 ∗2
- Superimposed screen number 2 ∗2
- Input completion object ID ∗2
- PC card battery error detection signal
- GOT ready signal
- Key code input signal
- Numerical value input signal∗1
- Previous cursor position
- Key code input signal
- Previous numerical value input
- Current numerical value input
- Cursor position numeric value input
- Hardcopy sub-signal
- Report output signal
- Grip switch hold-down status (A950 handy GOT, F940 handy GOT only)
- Key window output signal

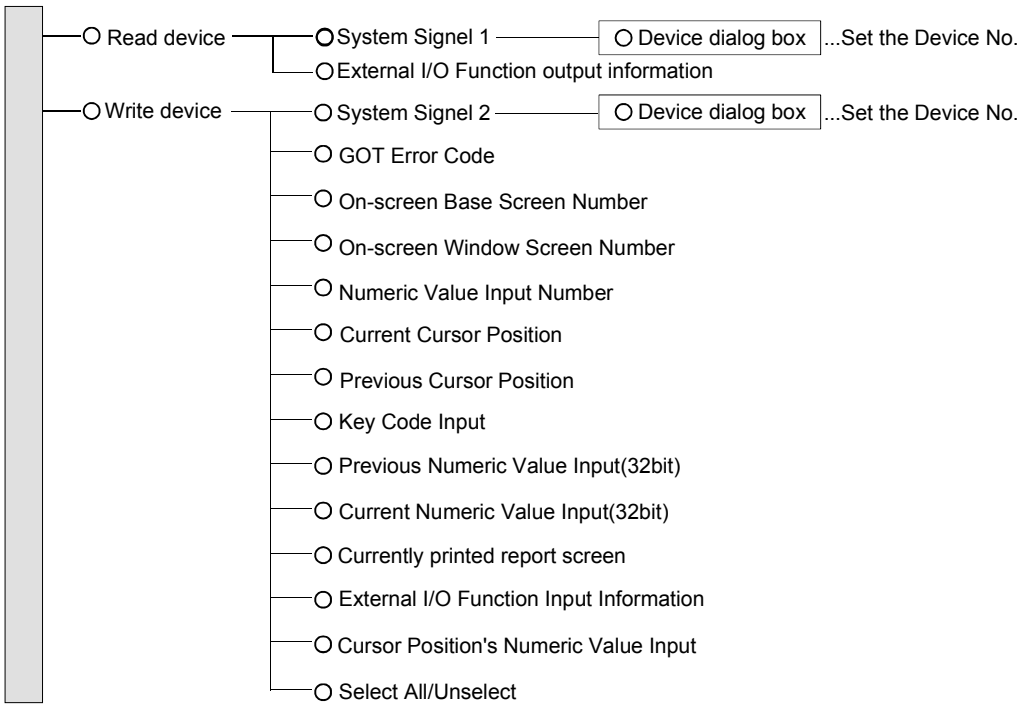
∗1 System information with which GOT-F900 series is compatible
∗2 System information with which only GOT-F900 series is compatible

(2) Setting items

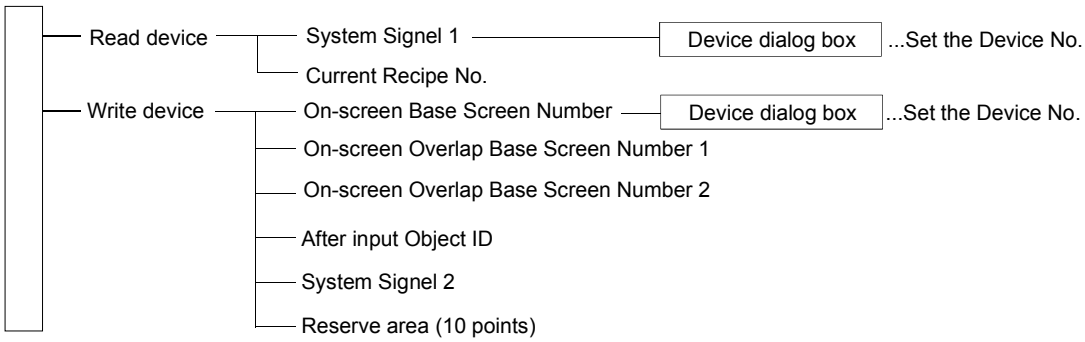
The system information function consists of the following setting items.

- "System Information" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up Other Object Function"→"Setting up GOT Action (System information)" from Contents of Help.

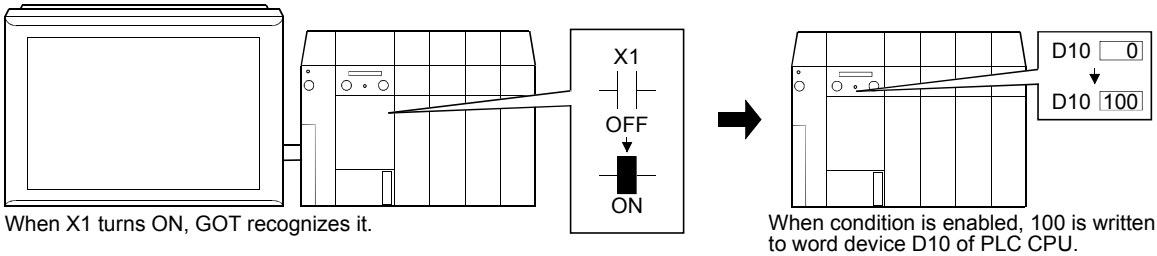
5.8.3 Observe status function (writes to the PLC CPU when the specified condition is enabled)

GOT-A900 series	○	GOT-F900 series	○

This function writes data to the PLC CPU or performs GOT operation when the specified condition is enabled, e.g. when the specified bit device turns ON/OFF or the specified word device value falls within the specified range (only when the GOT-A900 series is used). Two modes are available in this function: to perform write/operation when the specified condition is enabled, independently of the display monitor screen (per project); and to perform write/operation for each display screen when the specified condition is enabled (per screen).

(1) Function outline

(a) When the specified bit device X1 turns ON (condition), writes 100 to D10 (write).



When X1 turns ON, GOT recognizes it.

When condition is enabled, 100 is written to word device D10 of PLC CPU.

Setting Portion		Settings
Observe Status dialog box <Project>tab	Trigger/Action dialog box	
	<Trigger>tab	Trigger 1: ON Device: X1
	<Action>tab	Action : Word set (16bit) Device : D10 Fixed : 100

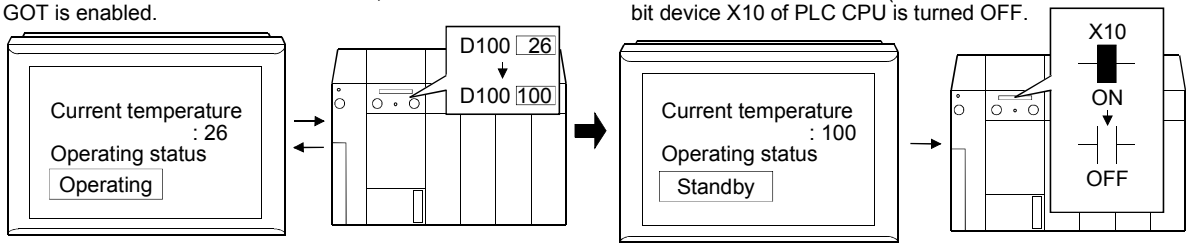
POINT

- The observe status function can perform the following write/operation.
- Turn ON a bit device only while the condition is enabled. (Momentary)
- Turn ON a bit device. (Bit SET)
- Turn OFF a bit device. (Bit RST)
- Reverse the current status of a bit device. (Bit ALT)
- Write a value to a word device. (Word SET)
- Play a sound file with an external speaker. (Only when the GOT-A900 series is used)

(b) When the value of the specified word device D100 falls within the the specified range (100 or more) (condition), turns OFF X10 (write). (Only when the GOT-A900 series is used)

When D100 value rises to or above 100, condition set to GOT is enabled.

When condition is enabled (D100 value rises to or above 100), bit device X10 of PLC CPU is turned OFF.



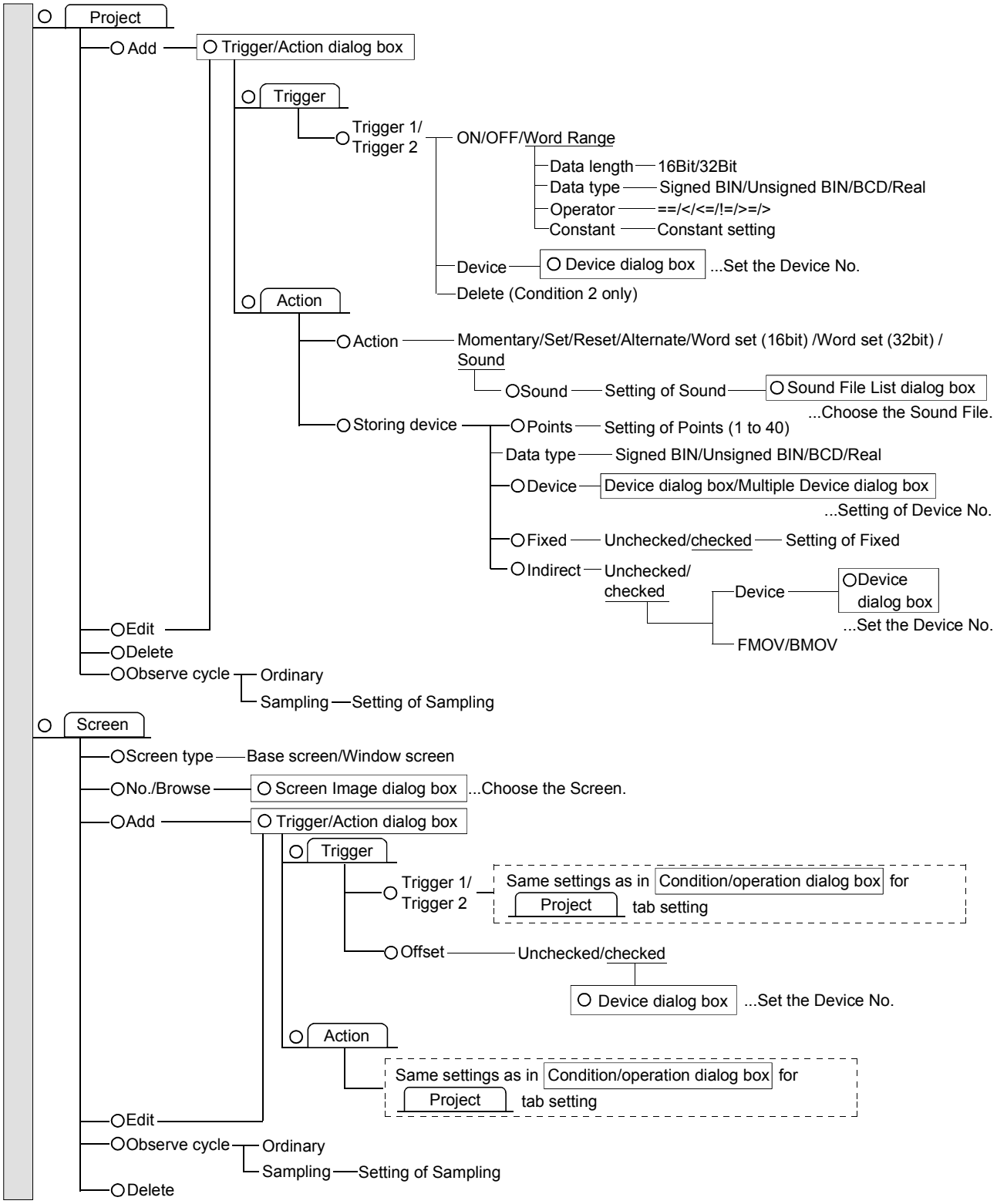
Setting Portion		Settings
Observe Status dialog box <Project>tab	Trigger/Action dialog box	
	<Trigger>tab	Trigger 1: Word Range Device: D100 Range: D100>=100
	<Action>tab	Action : Reset Device : X10

(2) Setting items

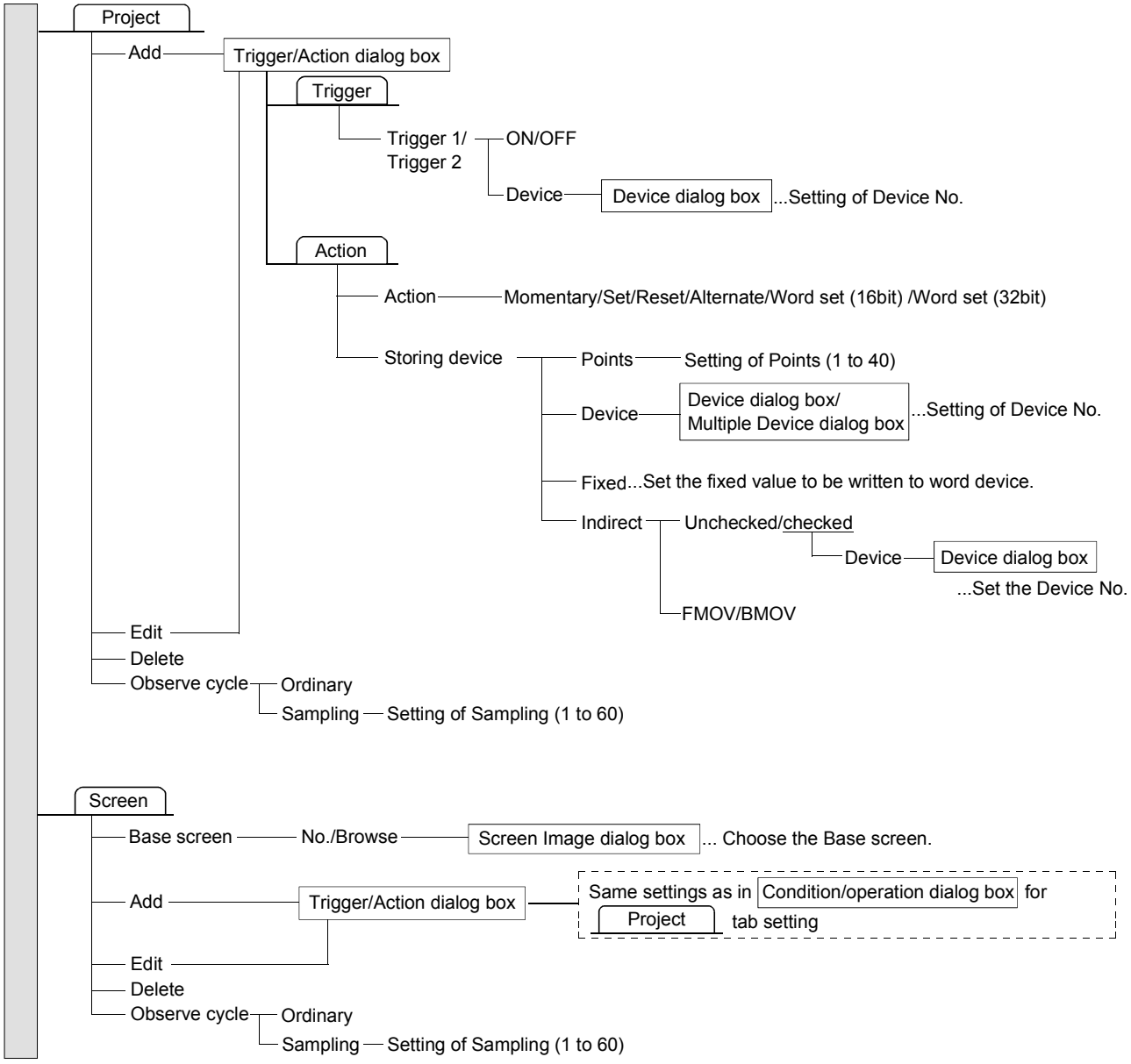
The observe status function consists of the following setting items.

• "Observe Status" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



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(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up Other Object Function"→"Setting up Status Observation Function" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Up to two bit/word devices can be specified as conditions.
- Only one type of write/operation can be specified for the set condition.
- Up to 512 points of "condition + write/operation" can be specified for each project and each screen (up to 512 points per screen).
- Monitoring operation of the condition device may cause a delay in object display on the GOT screen.
  Monitoring operation takes longer as the total number of condition device points increase or the monitoring intervals shorten. Be careful for setting.

(2) When using the GOT-F900 series
- Up to two bit/word devices can be specified as conditions.
- Only one type of write/operation can be specified for the set condition.
- Up to 40 points of "condition + write/operation" can be specified for each project and each screen (up to 40 points per screen).
- Monitoring operation of the condition device may cause a delay in object display on the GOT screen.
  Monitoring operation takes longer as the condition bit device points increase (the number of device points will be up to 80 if project-based or screen-based settings overlap) or the monitoring intervals shorten. Be careful for setting.

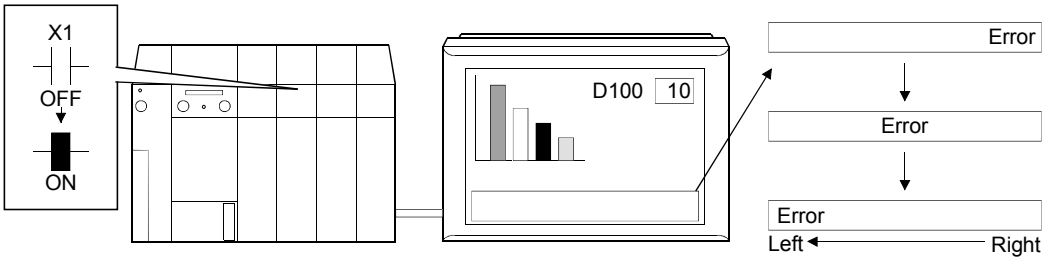
5.8.4 Floating alarm function (causes comments to flow from right to left on a base screen)

GOT-A900 series	○	GOT-F900 series	○

This function causes comments associated with multiple bit devices to flow from right to left on a base screen in occurrence order of comments corresponding to the bit devices which are ON.
Comments keep flowing until the ON bit devices turn OFF.

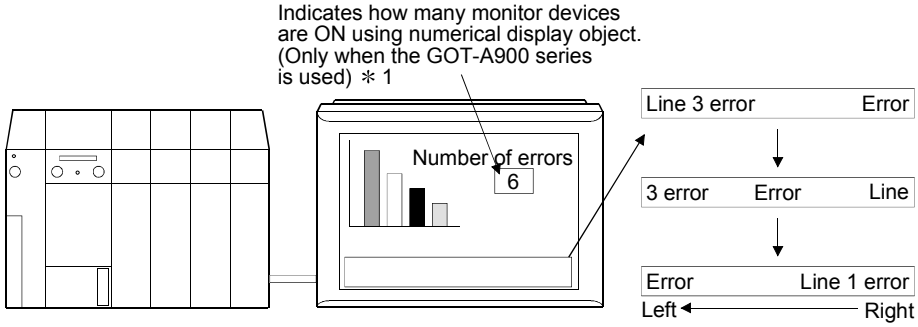
(1) Function outline

(a) When a bit device X1 turns ON, a comment indicating error occurrence associated with the bit device X1 flows.



Setting Portion	Settings
Floating Alarm dialog box	Device: X1
Screen Auxiliary Setting dialog box	Carry out display of alarm flow: checked

(b) When comments are associated with multiple bit devices, the comments flow from right to left on a base screen in occurrence order of comments corresponding to the bit devices that currently are ON. Simultaneously, how many monitoring bit devices are ON is also checked.
(How many devices are ON is monitored only when the GOT-A900 series is used)



Setting Portion	Settings
Floating Alarm dialog box	Device points : 8 Continuous device : X1 Storage device D10
Screen Auxiliary Setting dialog box	Carry out display of alarm flow: checked

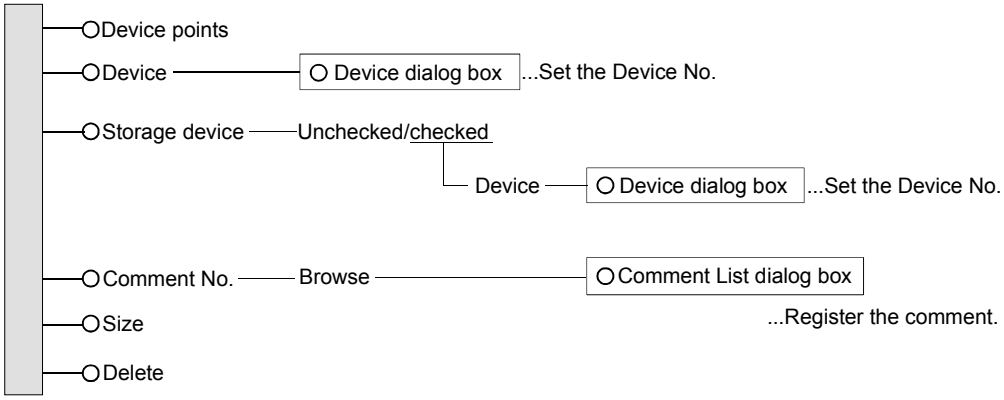
∗1: Set the numerical display monitor devices to the occurrence count storage device (D10).

(2) Setting items

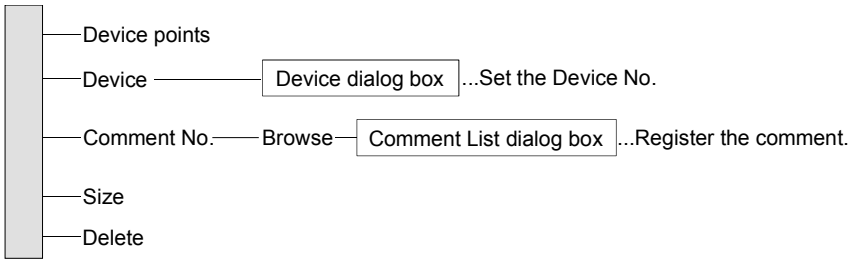
The floating alarm function consists of the following setting items.

• "Floating Alarm" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up Other Object Function"→"Setting up Floating Alarm Function" from Contents of Help.

POINT
• Devices to be monitored are common to all screens, but whether floating alarms are displayed or not can be set for each base screen. • Floating alarms appear at the bottom of the screen.

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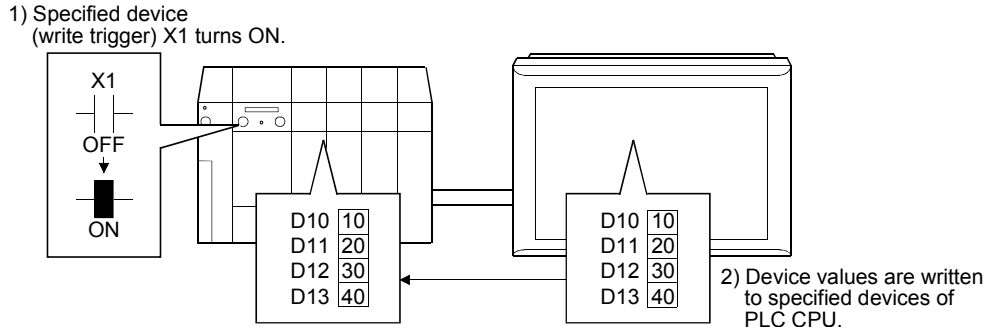
5.8.5 Recipe function (reads/writes values in the specified device range)

GOT-A900 series	○	GOT-F900 series	○

This function writes/reads device values to/from the specified devices of the PLC CPU on the specified condition (device ON/OFF).
The read data are stored as indicted below depending on whether the GOT is the GOT-A900 series or GOT-F900 series.
• GOT-A900 series: Stored onto a PC card in CSV format (except A950 handy GOT)
• GOT-F900 series: Stored into the GOT.

(1) Function outline

(a) Turns ON the specified device X1 at a machining start or the like to write the initial device values of the PLC CPU from the GOT.

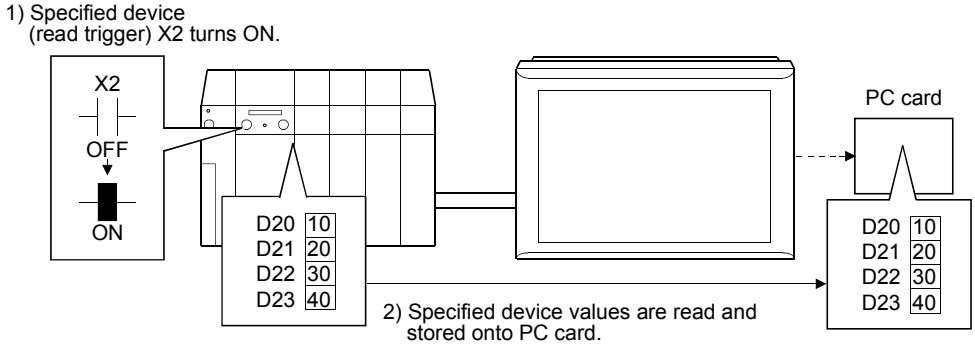


Setting Portion		Settings
Recipe Attribute dialog box	<Operation Contents>tab	Device: D10 Device points: 4
	<Write Trigger>tab	Trigger 1 X1 ON time
	<Recipe Device>tab	Recipe Device D10: 10, D11: 20, D12: 30, D13: 40

POINT

Device values may also be written to the specified devices of the PLC CPU from a PC card fitted to the GOT. (Only when the GOT-A900 series (except the A950 handy GOT) is used)

(b) Turns ON the specified device X2 at a machining end or the like to store the specified device values at machining end onto a PC card.
(Only when the GOT-A900 series (except the A950 handy GOT) is used)

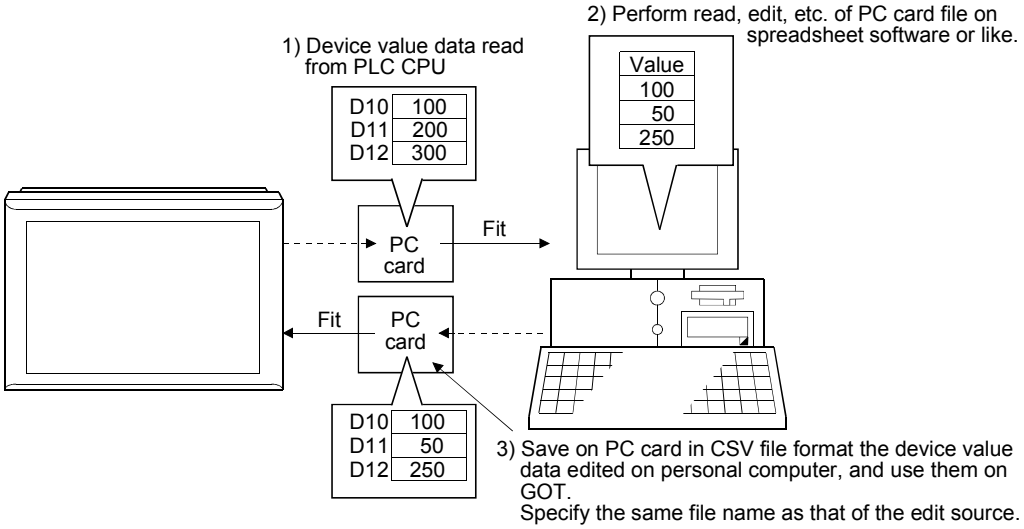


Setting Portion		Settings
Recipe Attribute dialog box	<Operation Contents>tab	Device : D20 Device points : 4 PC card : Use (Not set recipe device value)
	<Read Trigger> tab	Trigger 1 X2 ON time

POINT

Periodically writing device states to a PC card in the method (b) to back up the data enables a return to the status (b) when a next startup or the like is made in the method (a).
(For the GOT-F900 series, both the read and write triggers should be set in the recipe operation setting since the read data are stored into the GOT.)

(c) Using the spreadsheet or similar software of the personal computer, edit the device values read from the PLC CPU and saved on the PC card as a CSV format file.
(Only when the GOT-A900 series (except the A950 handy GOT) is used)



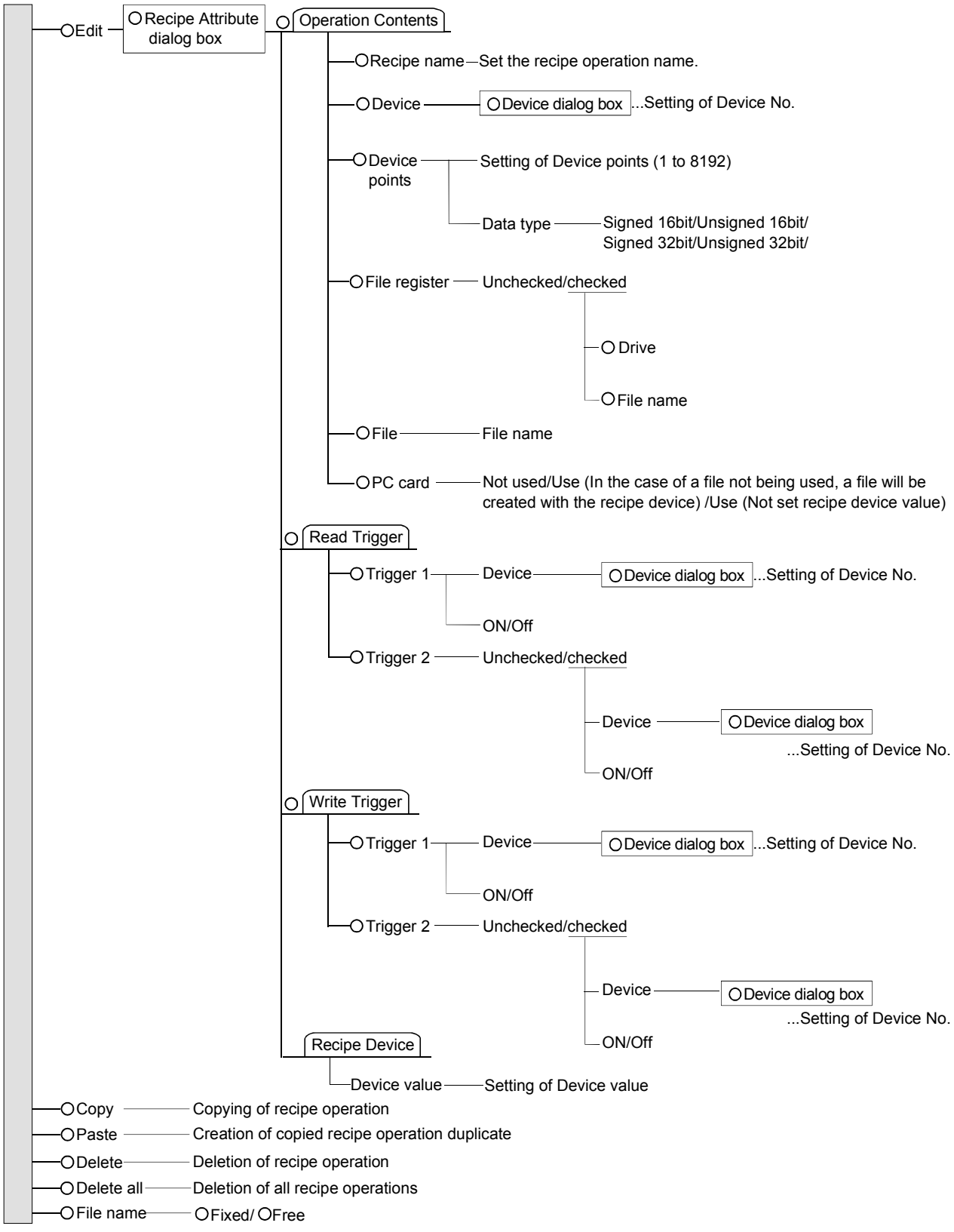
Setting Portion		Settings
Recipe Attribute dialog box	<Operation Contents>tab	Device points: 3 Device: D10 PC card: Use
	<Read Trigger> tab	Trigger 1 X2 ON time

(2) Setting items

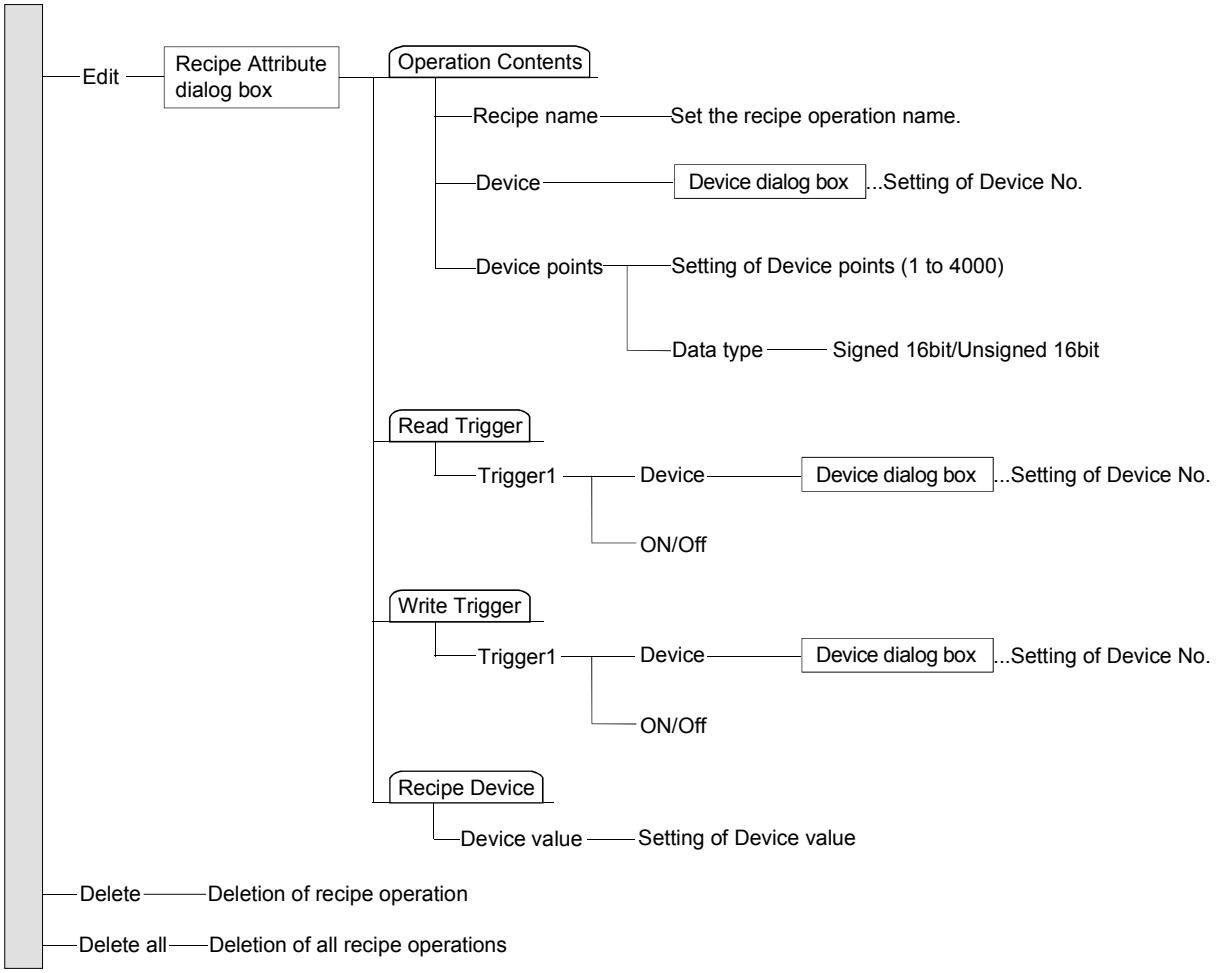
The recipe function consists of the following setting items.

• "Recipe" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up Other Object Function"→"Setting up Recipe" from Contents of Help.

POINT

(1) When using the GOT-A900 series
- Up to two devices can be specified as conditions.
- For restrictions on the recipe function, refer to Section 4.3.1.

(2) When using the GOT-F900 series
- Up to two devices can be specified as conditions.

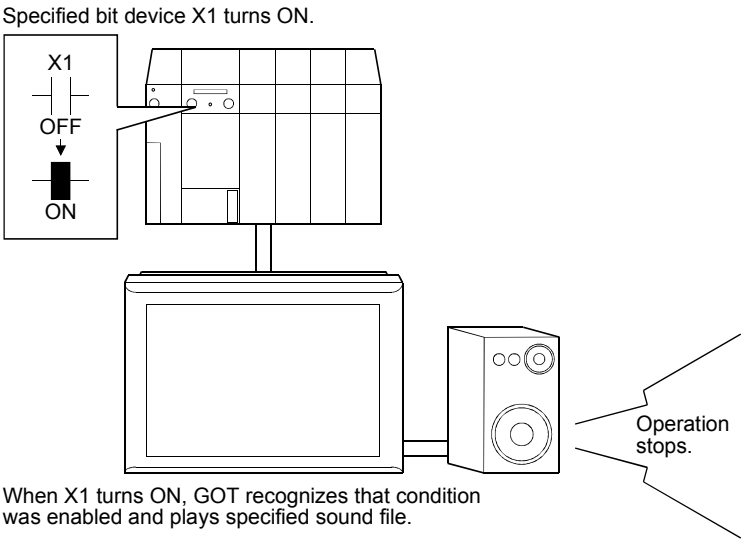
5.8.6 Sound function (plays a sound on GOT)

GOT-A900 series	○	GOT-F900 series	×

Set WAV format sound files to play sounds as error warning messages and touch sounds provided when touch keys are touched.

(1) Function outline

(a) When playing a sound file with the observe status function
(Condition: When the bit device X1 turns ON, a sound file is played.)



Setting Portion			Settings
Sound File List dialog box			Click the Edit button to register the WAV format file as a sound file.
Observe Status dialog box	Trigger/Action dialog box		
		<Trigger>tab	Trigger 1 : ON Device : X1
		<Action>tab	Action : Sound

POINT

To play a WAV format sound file when a touch key is touched, turn on the [Change touch key sound] check box in the [Project Auxiliary Setting] dialog box to make setting.

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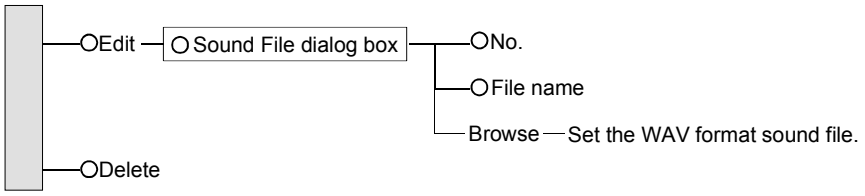
(2) Setting items

The sound function consists of the following setting items.

• "Sound File List" dialog box



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up Other Object Function"→"Creating Sound Files" from Contents of Help.

POINT

• For restrictions on the sound function, refer to Section 4.3.1.

• Sound files that can be played on the GOT are in the [8.000kHz, 16 bits, monaural] audio format. However, most of the sound files used generally are created in other audio formats.
Hence, when using generally used sound files on the GOT, they must be converted into the GOT format using general-purpose sound editing software (e.g. "Sound Recorder" of Windows® 95).
For conversion, refer to the help of GT Designer.

• Sound files of within eight seconds can be played on the GOT.
Data longer than eight seconds will be cut.

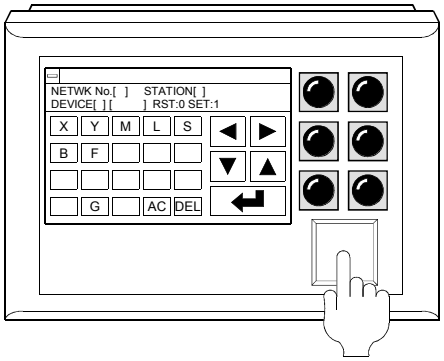
5.8.7 Test function (changes the device value of the PLC CPU)

GOT-A900 series	○	GOT-F900 series	×

This function shows a test window during monitor screen display to change a device value.
(This function is available while the ladder monitor function is used.)

(1) Function outline

(a) Touch a touch key to show a test window and change a device value.



Setting Portion		Settings
Touch Key dialog box	<Action> tab	Exlended: Test Window

POINT

- The device types whose values can be changed with the test function are as follows.
  - Bit device ON/OFF
  - Word device's current value change
  - Timer/counter's set value change
  - Buffer memory's current value change
- For restrictions on the test function, refer to Section 4.3.1.

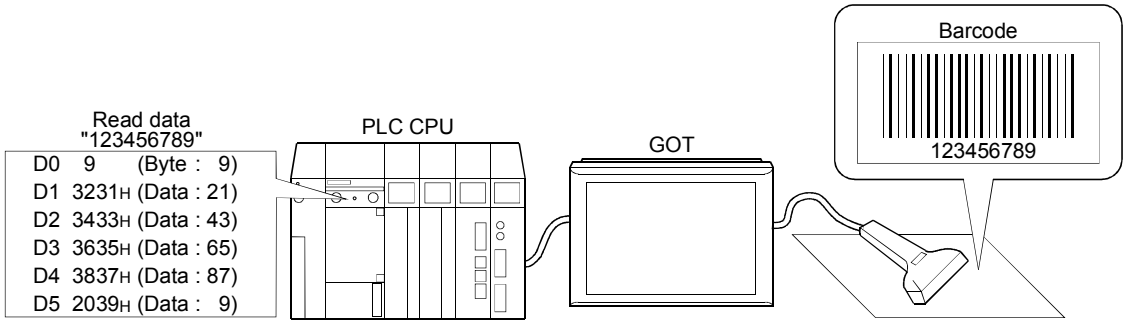
5.8.8 Barcode function (writes data read with barcode reader to PLC CPU)

GOT-A900 series	○	GOT-F900 series	○

This function writes to the PLC CPU the data which are read with a barcode reader connected to the GOT.

(1) Function outline

(a) Reads barcode data with a barcode reader and writes them to the specified devices (D0 to D5) of the PLC CPU.

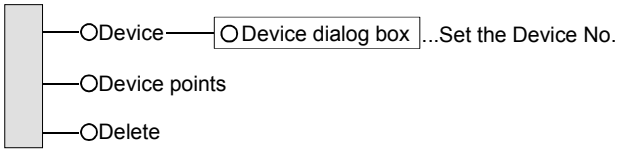


Setting Portion	Settings
Barcode dialog box	Device : D0 Device points : 6

(2) Setting items

The barcode function consists of the following setting items.

• "Barcode" dialog box



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up Other Object Function"→"Setting up Barcode" from Contents of Help.

POINT
For restrictions on the barcode function, refer to Section 4.3.1.

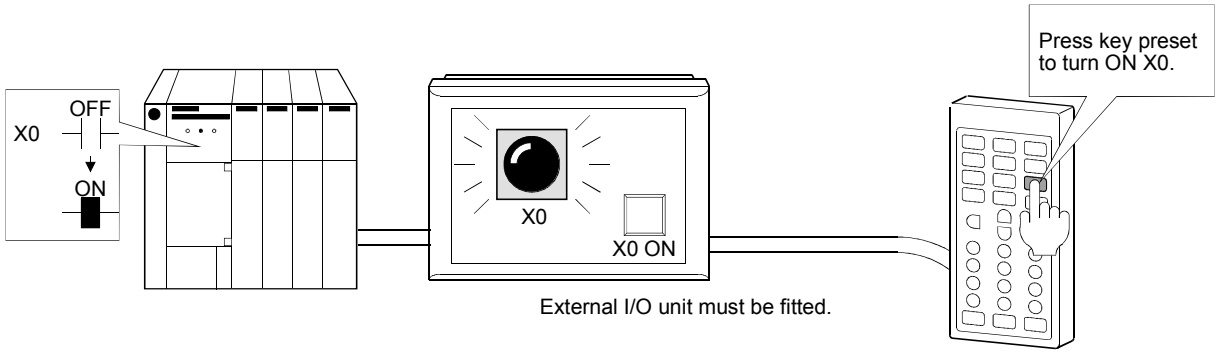
5.8.9 Operation panel function (operates GOT externally)

GOT-A900 series	○	GOT-F900 series	×

This function writes touch inputs, numerical inputs, screen switching, etc. to devices from outside the GOT using an operation panel.

(1) Function outline

(a) Turns ON the bit device X0 of the PLC CPU from an operation panel outside the GOT.

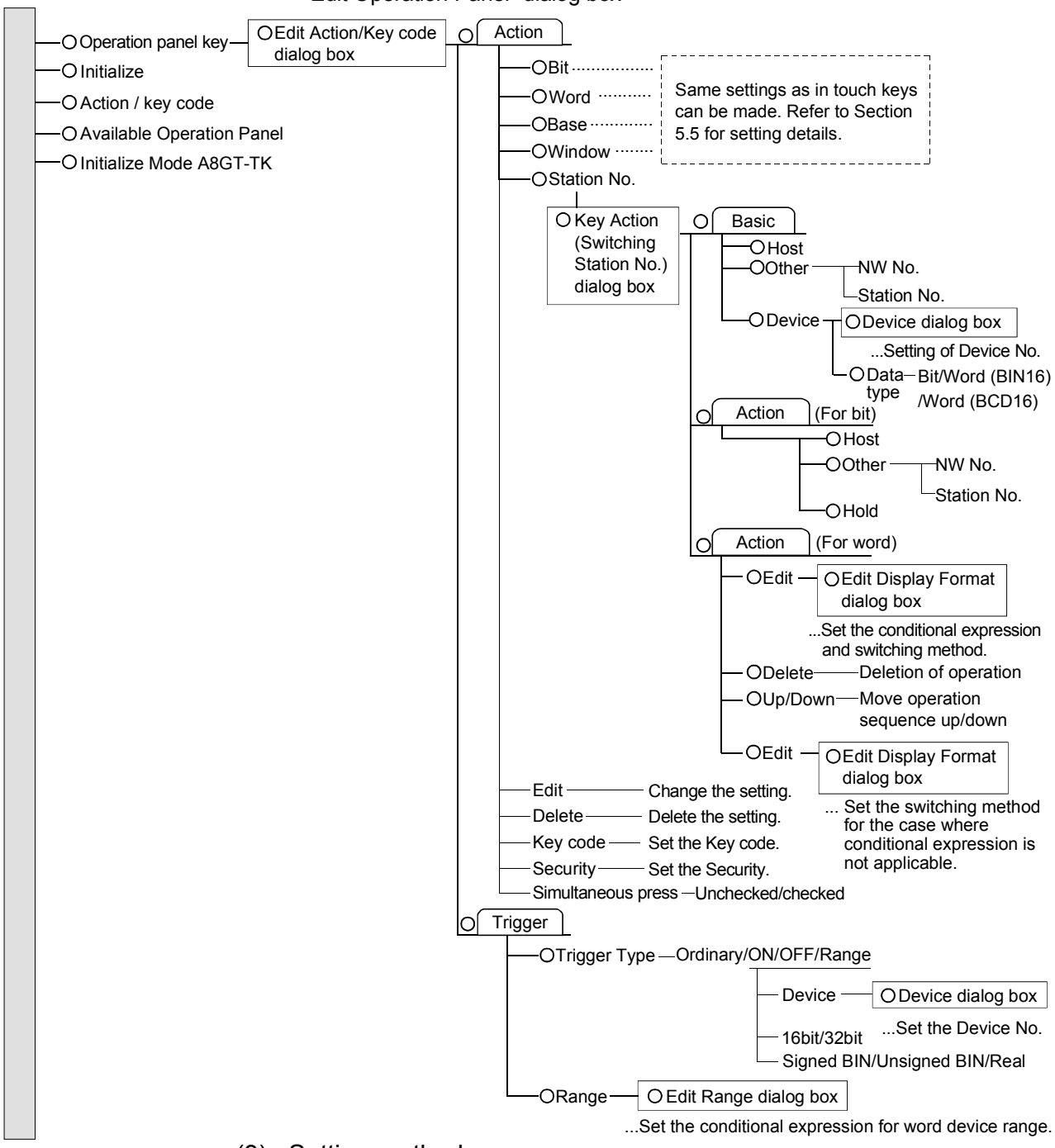


Setting Portion		Settings
Edit Operation Panel dialog box		Available Operation Panel : Checked Key : X39
Edit Action/Key code dialog box	<Action> tab	Bit Device : X0 Action : Set

(2) Setting items

The operation panel function consists of the following setting items.

• "Edit Operation Panel" dialog box



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up Other Object Function"→"Setting up Operation Panel" from Contents of Help.

POINT

- For restrictions on the operation panel function, refer to Section 4.3.1.
- The operation panel is incompatible with the operation screens dedicated to the utility menu, system monitoring function, ladder monitoring function, special module monitoring function, list editor function and motion monitor function.
- If you have pressed the touch key and operation panel at the same time, both are made valid and the one detected first is processed first.

5.8.10 Time action function (performs specified operation at preset time)

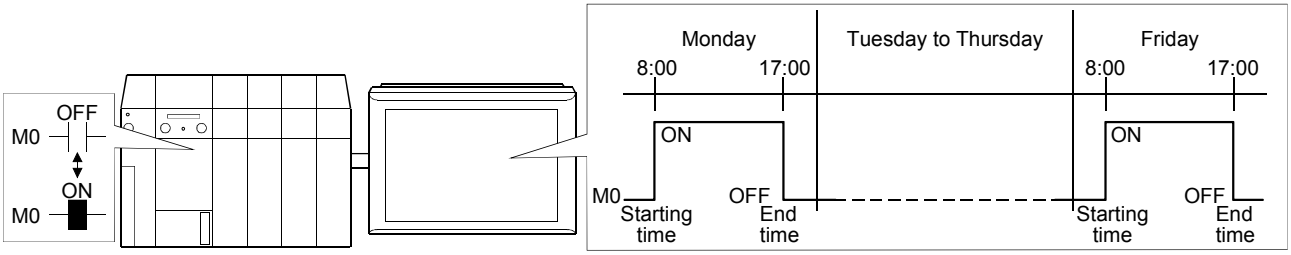
GOT-A900 series	○	GOT-F900 series	○

This function performs the following operations at the preset times of day on the preset days of week.

- Turns a bit device ON/OFF.
- Writes a value to a word device. (GOT-A900 series only)
- Plays a sound file from an external speaker. (GOT-A900 series only)

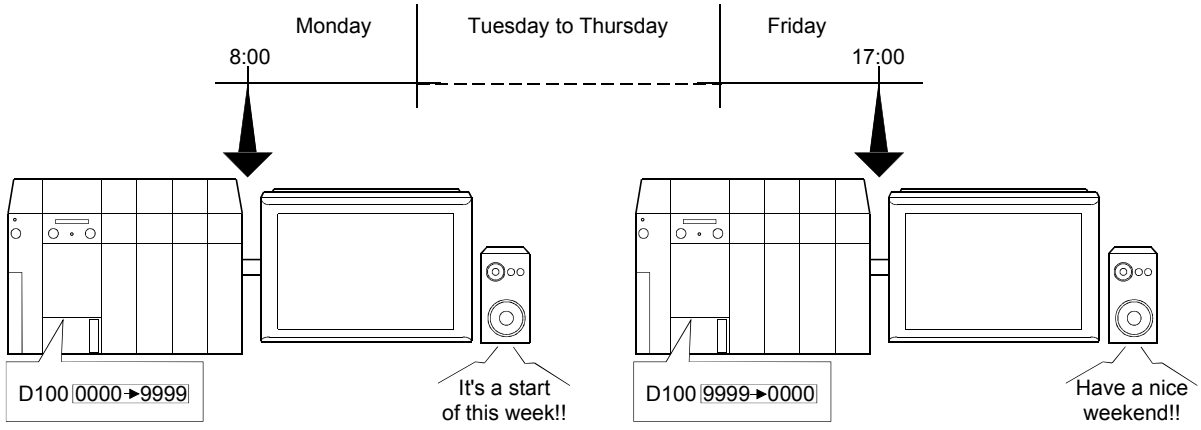
(1) Function outline

(a) Holds M0 ON between 8:00 AM and 5:00 PM from Monday to Friday.



Setting Portion	Settings
<Time>tab (GOT-A900 series only)	Mode: Daily, Start: 8h 0min Mon/Tue/Wed/Thu/Fri, End: 17h 0min.
<Time>tab (GOT-F900 series only)	Start: 8h 0min. 0sec. Mon/Tue/Wed/Thu/Fri, End: 17h 0min. 0sec.
<Action>tab	Bit Device: M0

(b) Plays sound 1 and writes "9999" to D100 at 8:00 AM on Monday, and plays sound 2 and writes "0" to D100 at 5:00 PM on Friday.
(GOT-A900 series only)



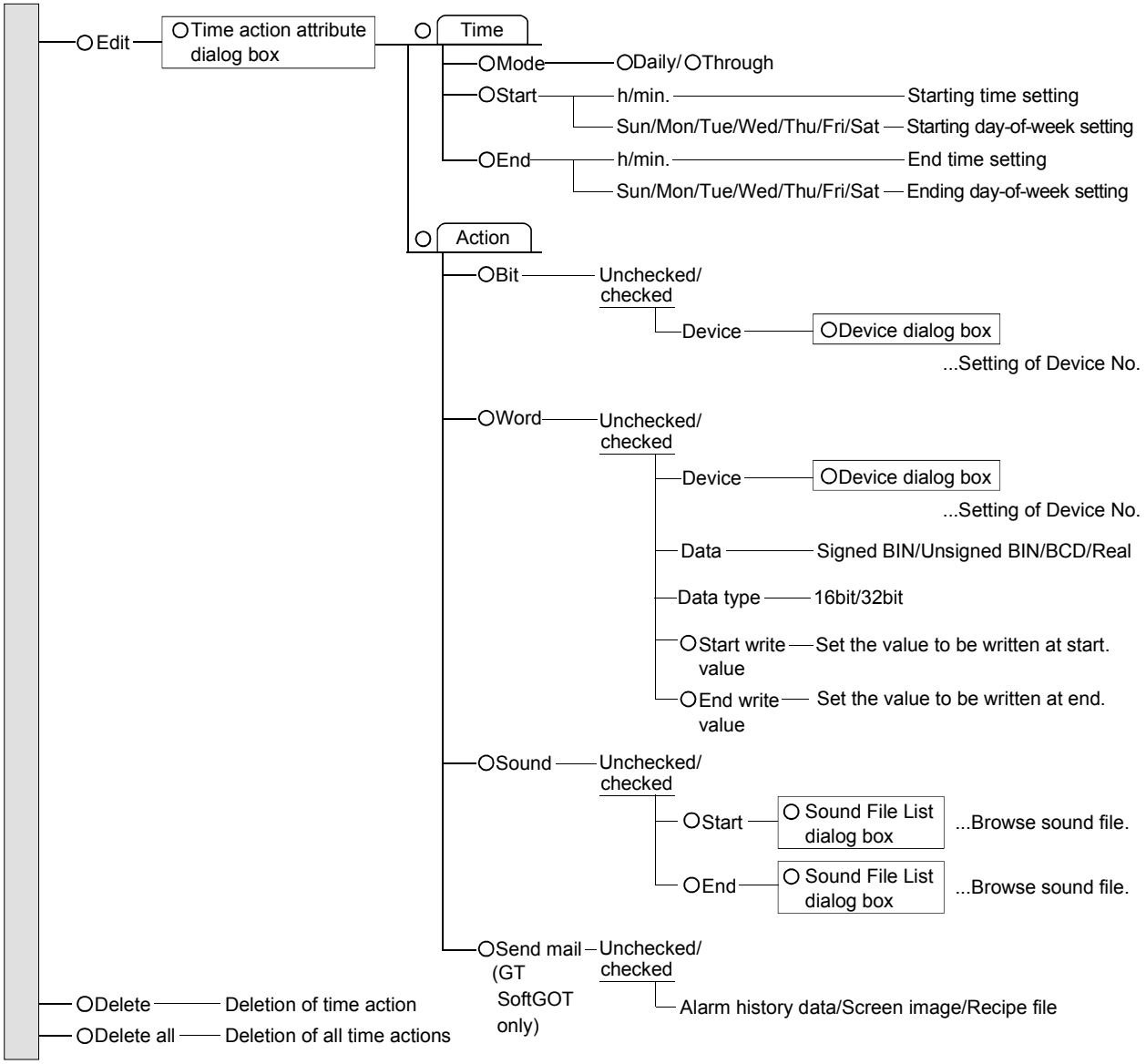
Setting Portion	Settings
<Time>tab	Mode: Through, Start: 8h 0min Mon, End: 17h 0min Fri
<Action>tab	Word Device: D100, Start write value: 9999, End write value: 0 Sound Start: 1, End: 2

(2) Setting items

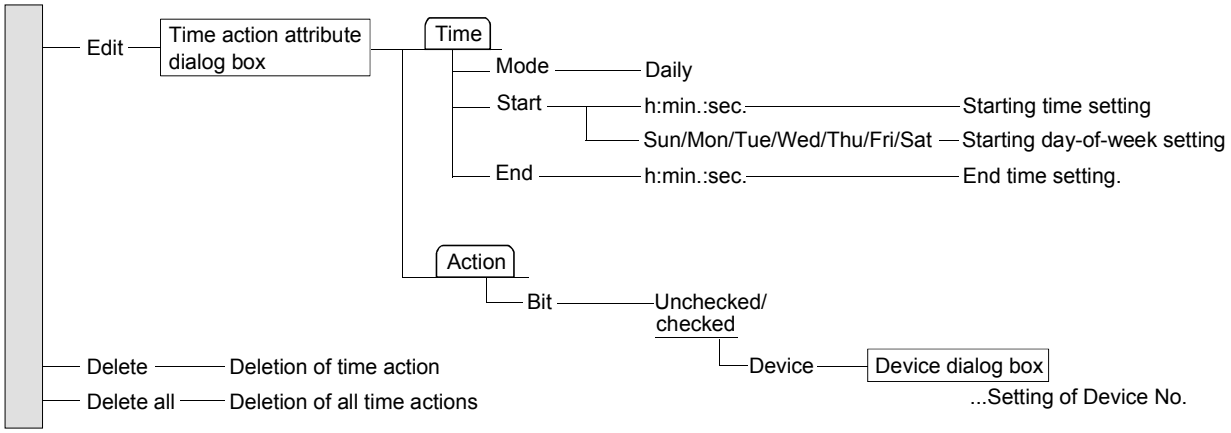
The time action function consists of the following setting items.

• "Time action" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Setting up Other Object Function"→"Setting up Time action" from Contents of Help.

POINT

(1) When using the GOT-A900 series

- Up to 32 points can be set to one project.
  Also, "bit", "word" and "sound output" can be set together per point.
- For restrictions on the time action function, refer to Section 4.3.1.
- You can send various data, such as the alarm history data, recipe file and screen image, as electronic mail. (GT SoftGOT only)
  For details of the mail sending function, refer to the GT SoftGOT Version 5 Operating Manual.

(2) When using the GOT-F900 series

- Up to 8 points can be set to one project.

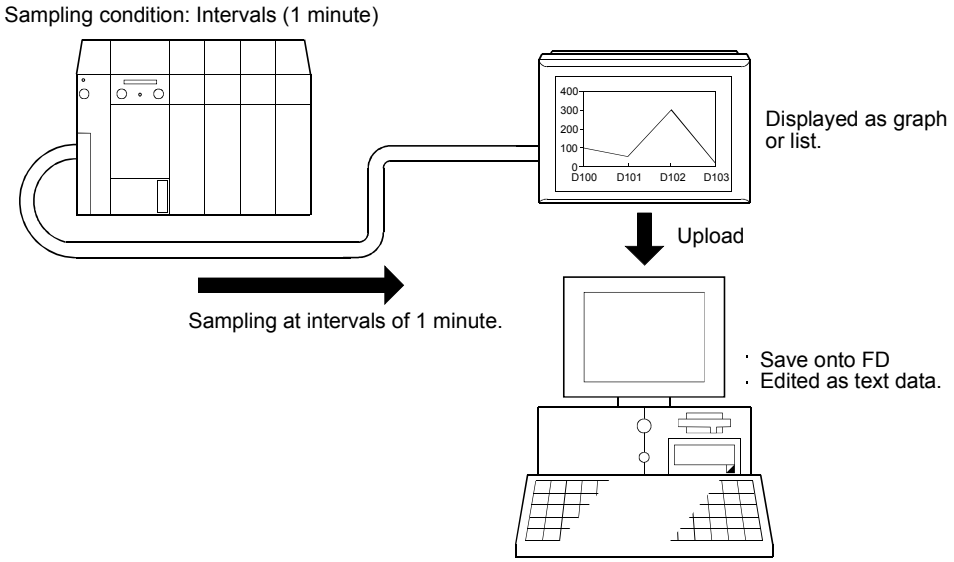
5.8.11 Sampling function (reads PLC CPU data under specified condition)

GOT-A900 series	×	GOT-F900 series	○

This function collects data stored in word devices at specified intervals or on bit condition.

(1) Function outline

(a) Samples four consecutive devices, starting from the specified word device (D0).
Sampling results can be displayed on the GOT in list or graph format.
Also, they may be read to GT Designer and saved onto FD or processed as text data on a personal computer.



Setting Portion	Settings	
Sampling dialog box	Device	: D0
	Trigger	: Cycle (1 min.)
	Use Sampling	: checked

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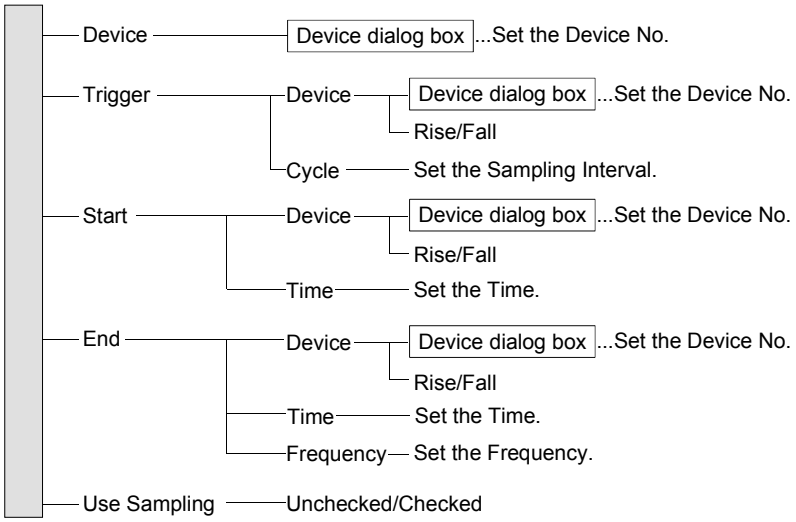
(2) Setting items

The sampling function consists of the following setting items.

• "Sampling" dialog box



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up Other Object Function"→"Setting up Sampling" from Contents of Help.

POINT
Sampling results can be printed by a printer connected to the GOT. (This cannot be performed when the PLC is connected by RS-232C communication.)

5.8.12 Script function (exercises display control under GOT program)

GOT-A900 series	○	GOT-F900 series	×

This function controls a GOT display under the GOT's original programs (hereafter abbreviated to scripts).
Using the GOT side scripts to exercise GOT display control, load on the system side (PLC CPU, microcomputer, etc.) display can be reduced significantly.

POINT

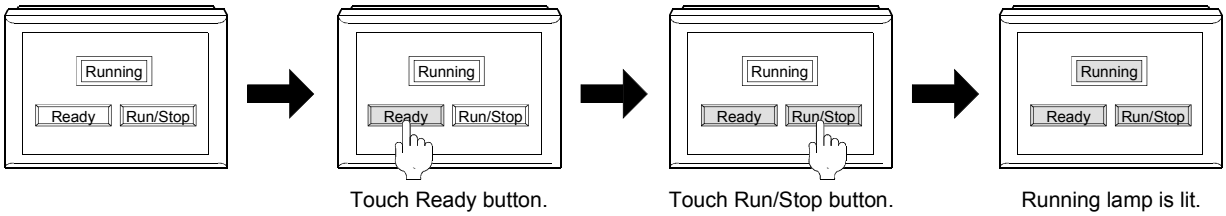
Refer to "Chapter7 Script functions" for details of the script function. This chapter provides details on the specifications, setting procedures, program examples and troubleshooting of the script function.
Also refer to Section 7.4 for the setting methods of specific examples explained in the function outline and the program data of scripts.

(1) Function outline

Using the script function enables the following display controls.

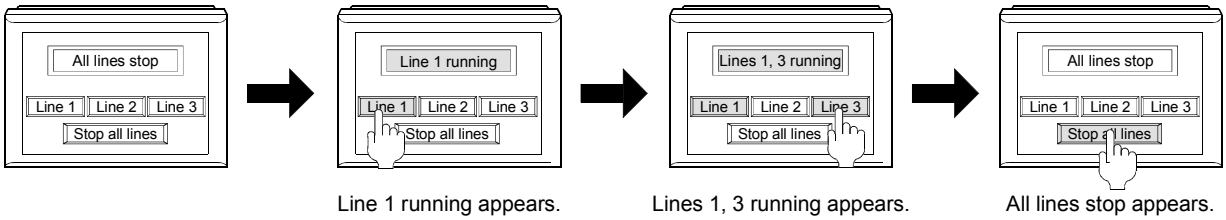
(a) Touch keys with interlock functions

The Running lamp is lit when the Ready and Run/Stop switches turn ON.



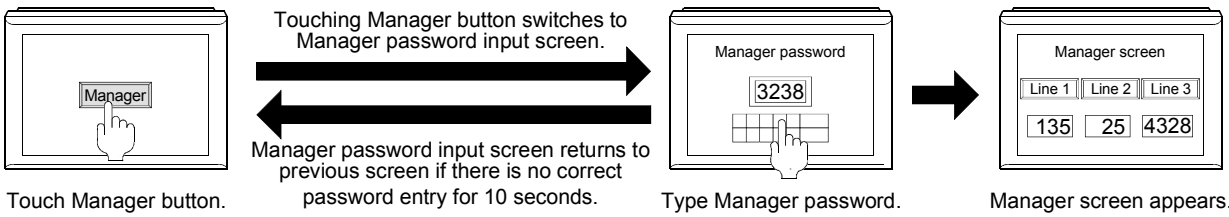
(b) Lamp which changes in display text under multiple conditions

Operation controls of lines are exercised with corresponding touch keys and the control states of the three lines are represented by one lamp.



(c) Password input screen with clock limit function

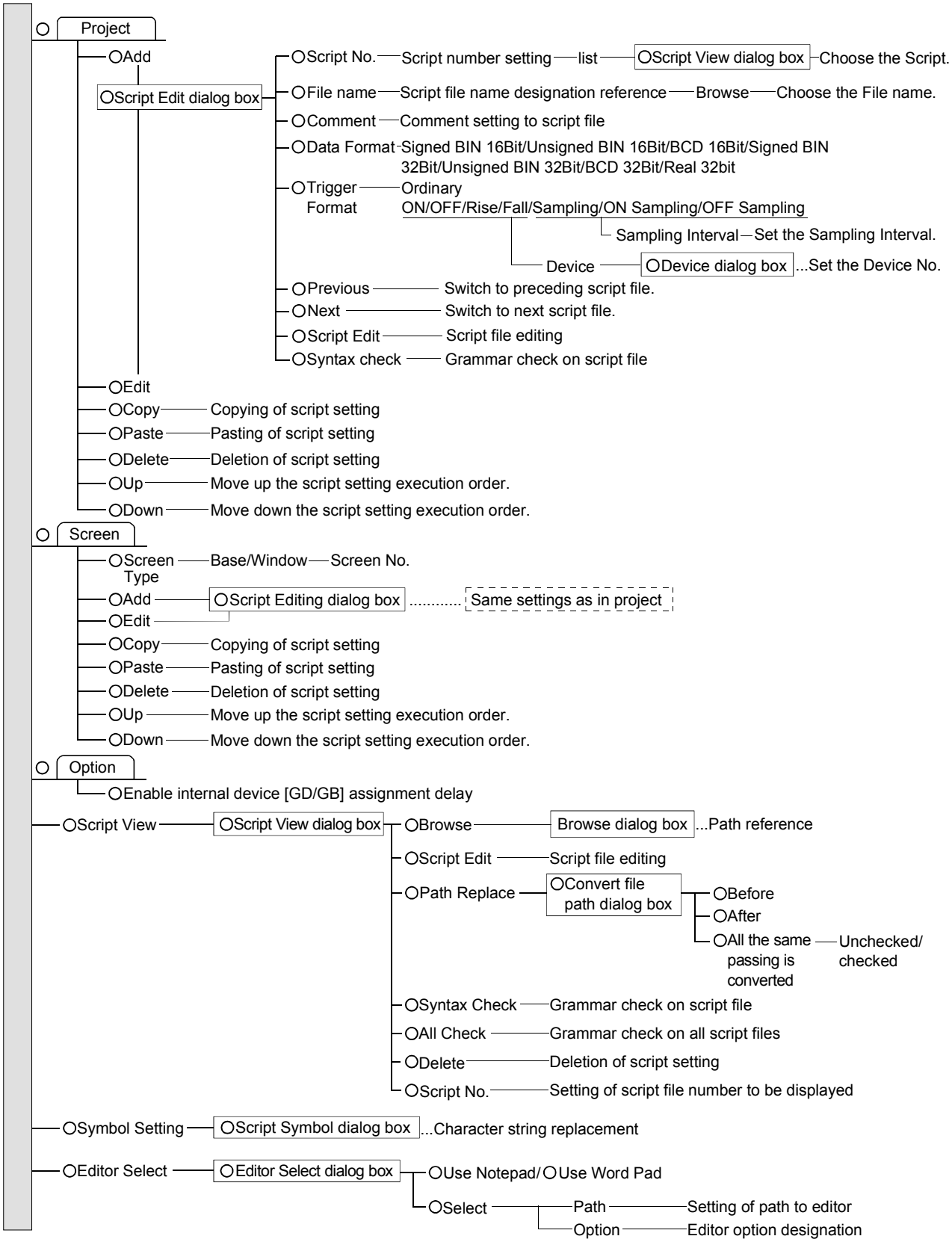
The password input screen returns to the previous screen if a correct password is not entered within 10 seconds after it appeared.



(2) Setting items

The script function consists of the following setting items.

• "Script setting" dialog box



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].
2) Choose "Setting up Other Object Function"→"Setting up Script" from Contents of Help.

(4) Update timing when the trigger type is set to [Sampling], [Cycle during ON] or [Cycle during OFF]

The sampling cycle counting is started when the trigger condition is satisfied.
When the trigger type is set to [Cycle during ON] and the sampling cycle is set to 10 seconds, for example, the script will be executed 10 seconds after the device set at [Trigger Device] turns on. (When the trigger device turns off after 10 seconds, the script will not be executed.)
When the trigger condition is not satisfied, counting of the sampling cycle will be reset.

5.8.13 Video display function

GOT-A900 series	○	GOT-F900 series	×

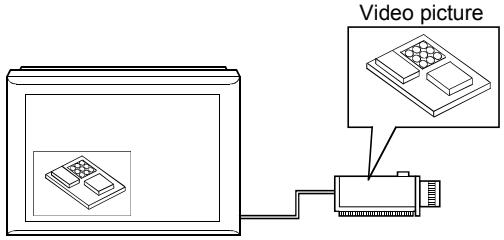
This function displays the picture taken with a video camera in the GOT video window.

POINT
Refer to Section 4.1.4 for details of video windows used in the video display function.

(1) Function outline

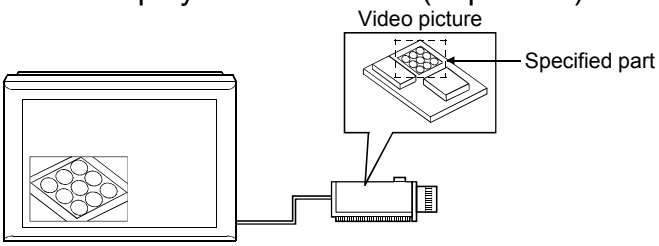
(a) The picture taken with a video is displayed on the GOT as-is. (Full mode)

In the full mode, up to four video windows can be displayed at the same time.



Setting Portion		Settings
Switching Screen dialog box	<Video/RGB> tab	Video window/RGB screen: Selection Device: D100

(b) The specified part of the picture taken with a video can be displayed on the GOT. (Clip mode)



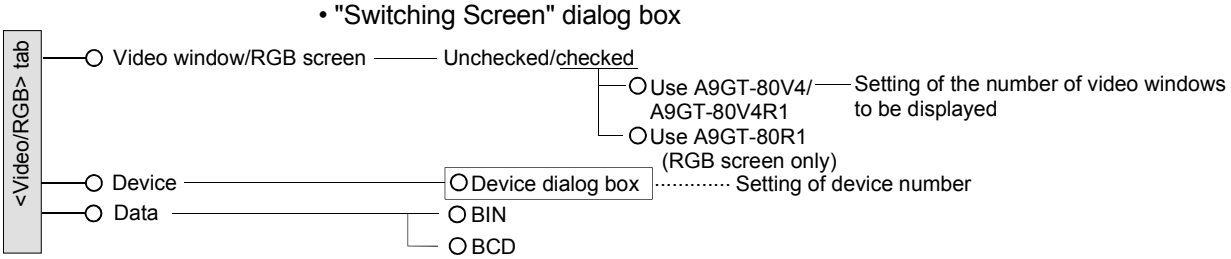
Setting Portion		Settings
Switching Screen dialog box	<Video/RGB> tab	Video window/RGB screen: Selection Device: D100

∗1: Two or more video windows cannot be displayed in the clip mode.

(2) Setting items

The video display function consists of the following setting items.

• "Switching Screen" dialog box



(3) Setting method

Refer to the following items of the help for details of the settings.

1) Choose [Help]-[Firstly].

2) Choose "Setup operations using the "Common" menu"→"Setting up screen switching devices".

POINT
Video windows can be used with the A985GOT-V only.

5.8.14 RGB screen display function

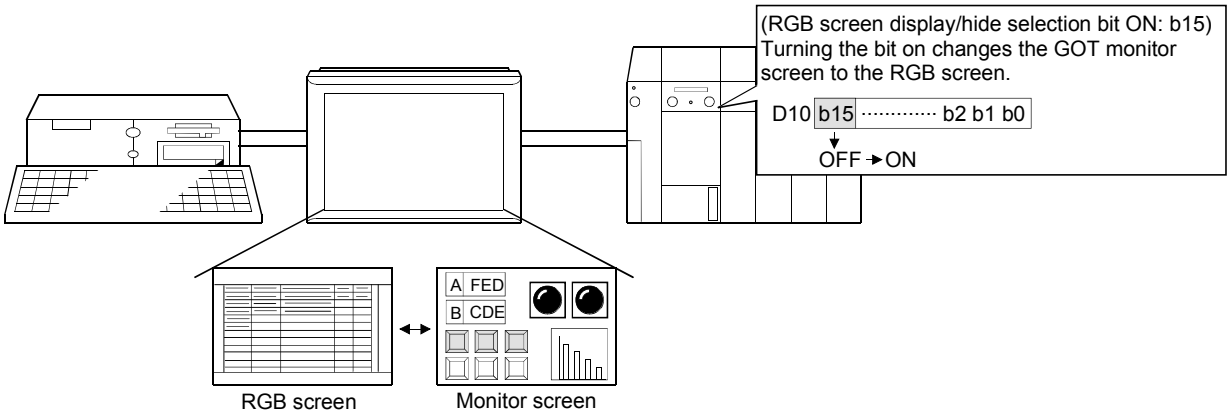
GOT-A900 series	○	GOT-F900 series	×

This function displays a personal computer screen on the GOT.

POINT
Refer to Section 4.1.5 for details of the RGB screen.

(1) Function outline

(a) When the RGB display controlling bit turns on, the screen of a personal computer is displayed on the GOT.



Setting Portion		Settings
Switching Screen dialog box	<Video/RGB> tab	Video window/RGB screen: Selection RGB screen: Selection Device: D100

(2) Setting items

The setting items of the RGB window display function are the same as those of the video display function.

Refer to Section 5.8.13.

(3) Setting method

Refer to the following items of the help for details of the settings.

1) Choose [Help]-[Firstly].

2) Choose "Setup operations using the "Common" menu"→"Setting up screen switching devices".

POINT
The RGB window display can be used with the A985GOT-V only.

5.9 Useful Functions

The following functions are useful.

- Screen call function..... Reduces project data capacity.
- Security function..... Limits users.
- Offset function..... Shows multiple devices by setting of one device.
- Expression function..... Processes PLC CPU operation on GOT.
- Station number switching function... Switches the monitor destination to the same device of another station number.

5.9.1 Screen call function (reduces project data capacity)

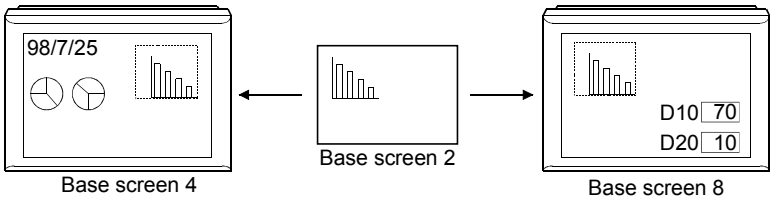
GOT-A900 series	○	GOT-F900 series	○

This function shows other called screens over a basic screen as a single screen.

(1) Function outline

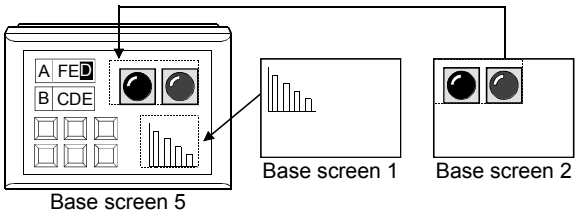
(a) Shows the same display information on multiple screens.

Necessary screen memory space/display setting is for one screen only.



Setting Portion	Settings
Base screen 4 call setting dialog box	Screen type: Base screen No.: 2
Base screen 8 call setting dialog box	Screen type: Base screen No.: 2

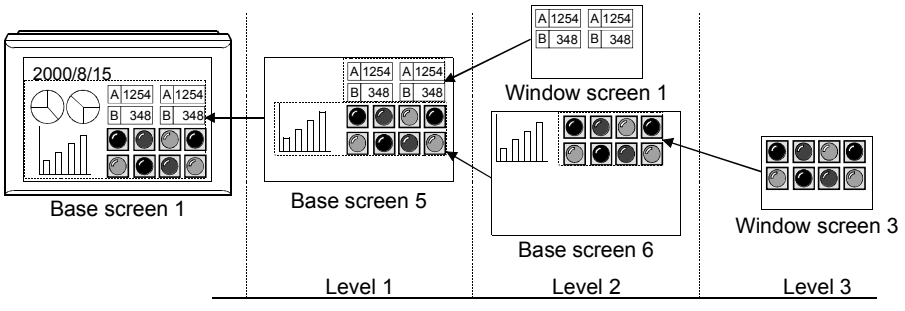
(b) Shows multiple called screens on a single screen.



Setting Portion	Settings
Base screen 5 call setting dialog box	Screen type: Base screen No.: 1
	Screen type: Base screen No.: 2

(c) Shows a screen having a layered (nest) structure.

As a single screen can display up to 16 levels of nesting, screen design of high freedom can be performed. (Only the GOT-A900 series)



Setting Portion	Settings
Base screen 1 call setting dialog box	Screen type: Base screen No.: 5
Base screen 5 call setting dialog box	Screen type: Base screen No.: 6
	Screen type: Window screen No.: 1
Base screen 6 call setting dialog box	Screen type: Window screen No.: 3

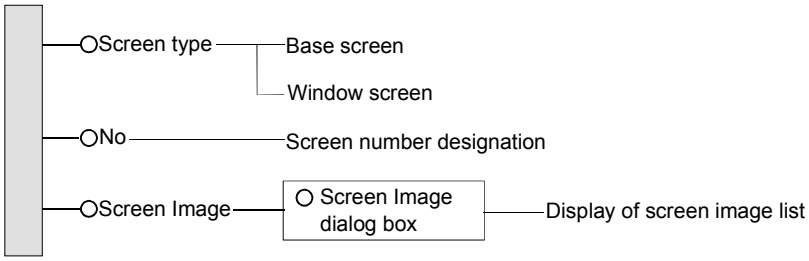
(2) Setting items

The screen call function consists of the following setting items.

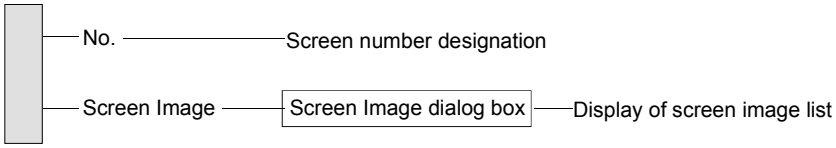
• "Overlap Screen" dialog box

Set the overlap screen.

(a) When the GOT-A900 series is used



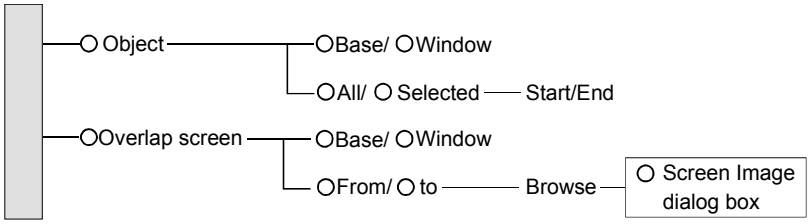
(b) When using the GOT-F900 series



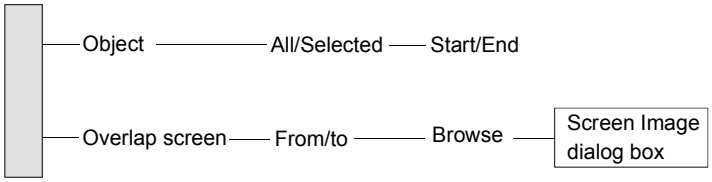
• "Replace Overlap Screen" dialog box

Batch-change the overlap screen numbers.

(a) When using the GOT-A900 series



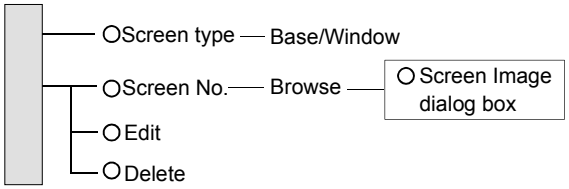
(b) When using the GOT-F900 series



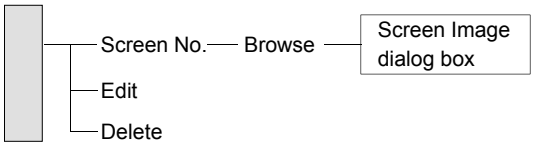
• "Overlap Screen List" dialog box

Display the overlap screen numbers hierarchally.

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Choose "Operations after making screens"→"Setting up Screen call" from Contents of Help.

POINT

• The items available for the screen call function change with the GOT used as indicated below.

Item	When using GOT-A900 series	When using GOT-F900 series
Setting target screen	Base screen, window screen	Base screen
Max. number of called screens＊1	2047	5
Max. number of layered (nesting) levels＊2	16 (excluding source screen)	Nesting not allowed

＊1: Indicates the maximum number of called screens relative to the basic screen (source screen).

＊2: Indicates levels on which screens will be further called.

• Called screen combinations cannot be changed during screen display after transfer to the GOT.

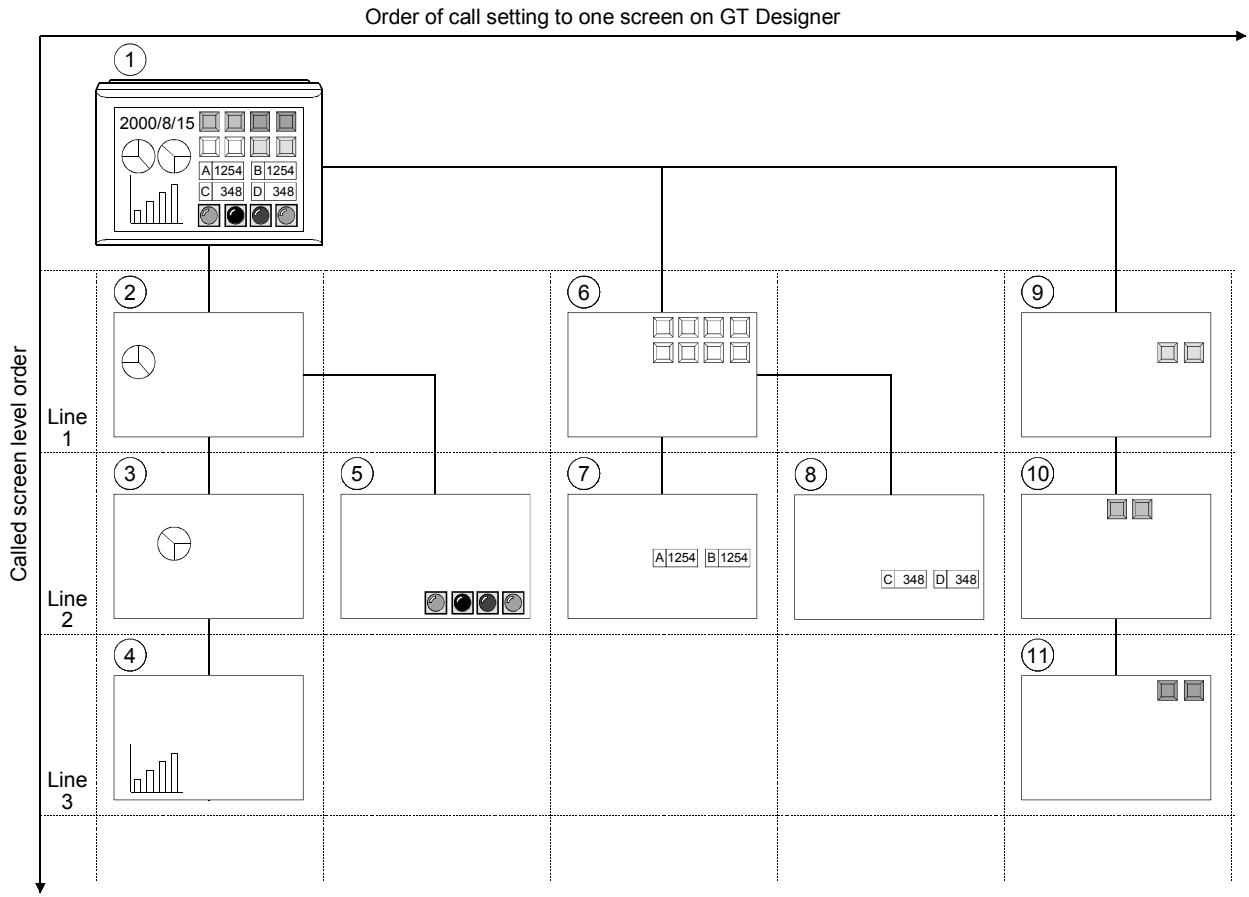
(4) What you should know to use the screen call function (when using GOT-A900 series)

(a) Order of displaying called screens

When multiple called screens exist on one screen, the display order is determined by the order of setting on GT Designer and the order of called screen levels.

Called screens are displayed in the following numerical order.

Since screens displayed later are shown on earlier ones, latter screens come to front.



- Up to 16 nesting levels, not including the base screen, are displayed.
- When multiple call settings were made on the same screen, screens are shown in the setting order on GT Designer.
- Among called screens having a layered (nest) structure, deeper screens are shown later.
- A screen having multiple call settings is displayed later than a called screen having a layered structure.

POINT

The security function, observe status function and script function set on called screens are also processed in the same order as the called screen displaying order.

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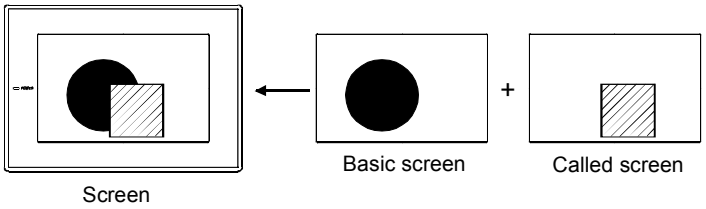
(b) Instructions for superimposing a called screen

When superimposed, a called screen is shown as described below, and therefore, setting should be made carefully.

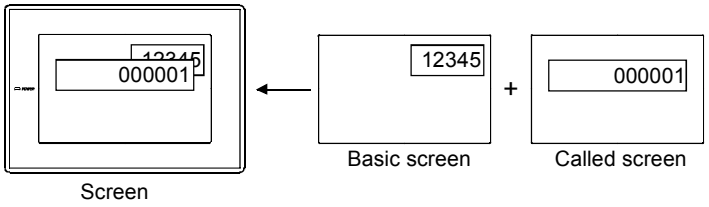
1) When screen displays are overlapped

• Figure data



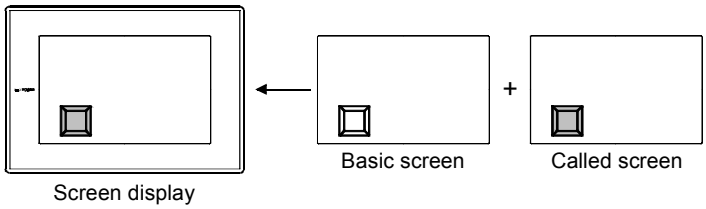
The figure of called screen is displayed in the front.

• Object data



Among the objects of basic screen and called screen, the one whose value is changed will be displayed in the front.

• Touch keys



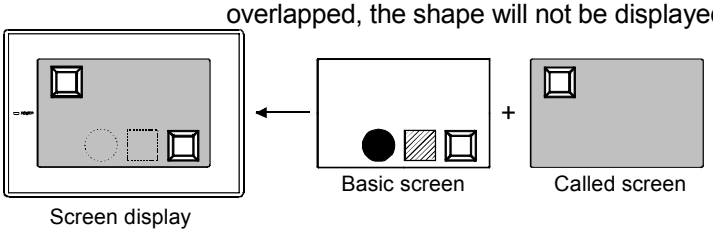
Initially, the touch switch corresponding to the latest screen will be displayed in the front.
After, the screen where touch switch trigger has changed will be displayed.

The touch switches on the called screen has different validity of display and action according to the number of called screens and their overlapping state.
(Even if the touch switch is displayed in the front, it may not function properly.)

Refer to 2) in this section.

• Screen background

The background color of the called screen will be displayed in the front. When the background color and the basic screen shape color are overlapped, the shape will not be displayed.

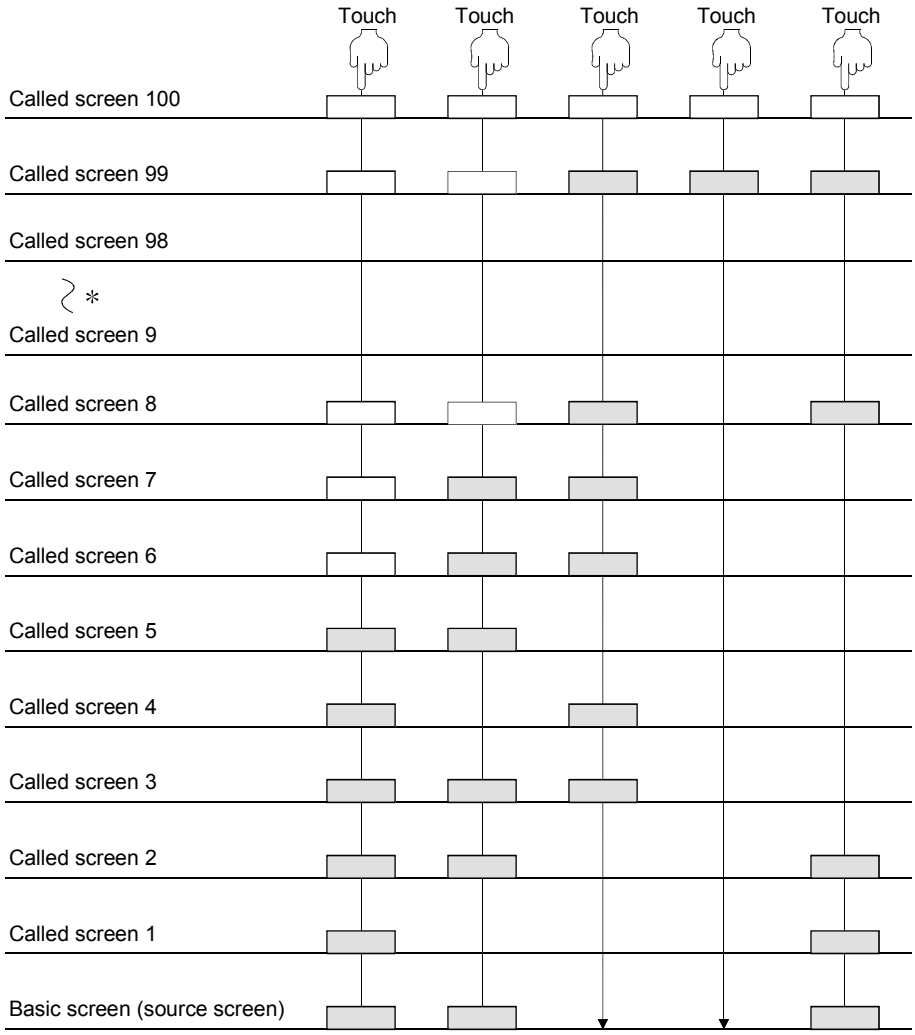


The shape of basic screen will not be displayed.

POINT
In GT Designer, even if the background color is set to the called screen, it will not be displayed on the basic screen. Also, it will not be displayed in GT Designer preview. To check the called screen's background color, use GT Simulator or GOT.

2) Touch key operation

• If screens are called in the same place, the touch keys set to the call screens 1 to 99 operate. The other touch keys are all invalid. (The touch keys set to the call screens 100 and later do not operate.) However, if the touch keys have been set one over another, the touch keys of up to the sixth screen counted from the basic or call source screen operate.



: Touch key activated. : Touch key not activated.

∗ : Represents that called screens 9 to 98 do not have overlapping touch keys.

• When called screen touch keys are overlapping, the touch keys are activated in order of upper to lower ones. Hence, the key may not be activated if touching time is short.

• If simultaneous touch disable keys are overlapped, they are inactive.

3) When objects that may be set only once on a single screen are superimposed

When objects that may be set only once on a single screen, e.g. data list and alarm list, are superimposed, they are all displayed but the function is restricted and the display is not provided correctly.

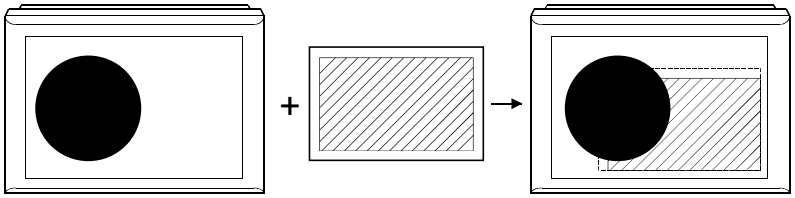
(5) What you should know when using the screen call function (when the GOT-F900 series is used)

When superimposed on a base screen, a called screen is shown as described below, and therefore, setting should be made carefully.

(a) When screen displays are overlapped

1) Figure data

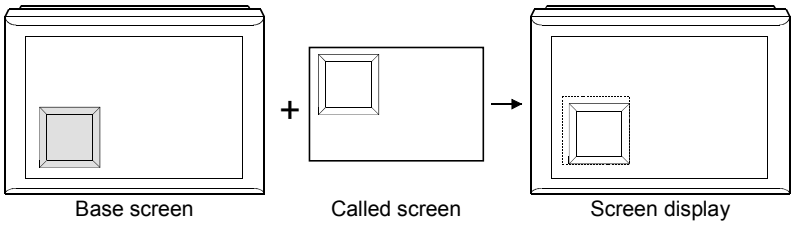
A called screen figure appears at the back.



2) Touch keys

The touch key on the called screen appears at the front.

If touch keys are overlapped, only the base screen touch key functions when touched.



(b) When objects that may be set only once on a single screen are superimposed

When objects that may be set only once on a single screen, e.g. keyboard and alarm list, are superimposed, they are all displayed but the function is restricted and the display is not provided correctly.

5.9.2 Security function (limits users)

GOT-A900 series	○	GOT-F900 series	○

By setting the security level (0 to 15) for each object or screen, display data can be displayed or hidden according to the security level of the user.
A password can be set for each security level, which can be changed by inputting the corresponding password.
(The GOT-F900 series allows only the security level of the base screen to be set.)

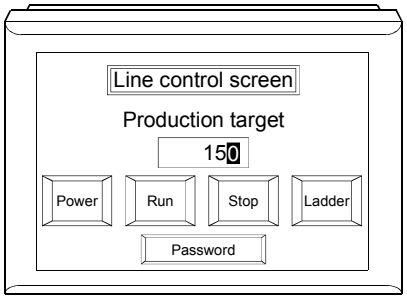
Security level 0 : No security function is set.
Security level 1 : Low
↓
Security level 15: High

POINT

In addition to the password of the security level, there are specific screens/functions that can restrict users by setting specific passwords.
- Utility screen
  Set a password at a start of the utility screen to prevent accidental upload operation.
- Parameter change screen (only when GOT-A900 series is used)
  Set the password on the parameter setting screen of the motion monitor function or servo amplifier monitor function to prevent accidental changes from being made to the parameter settings of the motion controller CPU (Q172CPU/Q173CPU) or servo amplifier at the connection destination.
- Data transfer operation
  Set a password at the time of uploading the screen data of the GOT to GT Designer to prevent accidental upload operation.

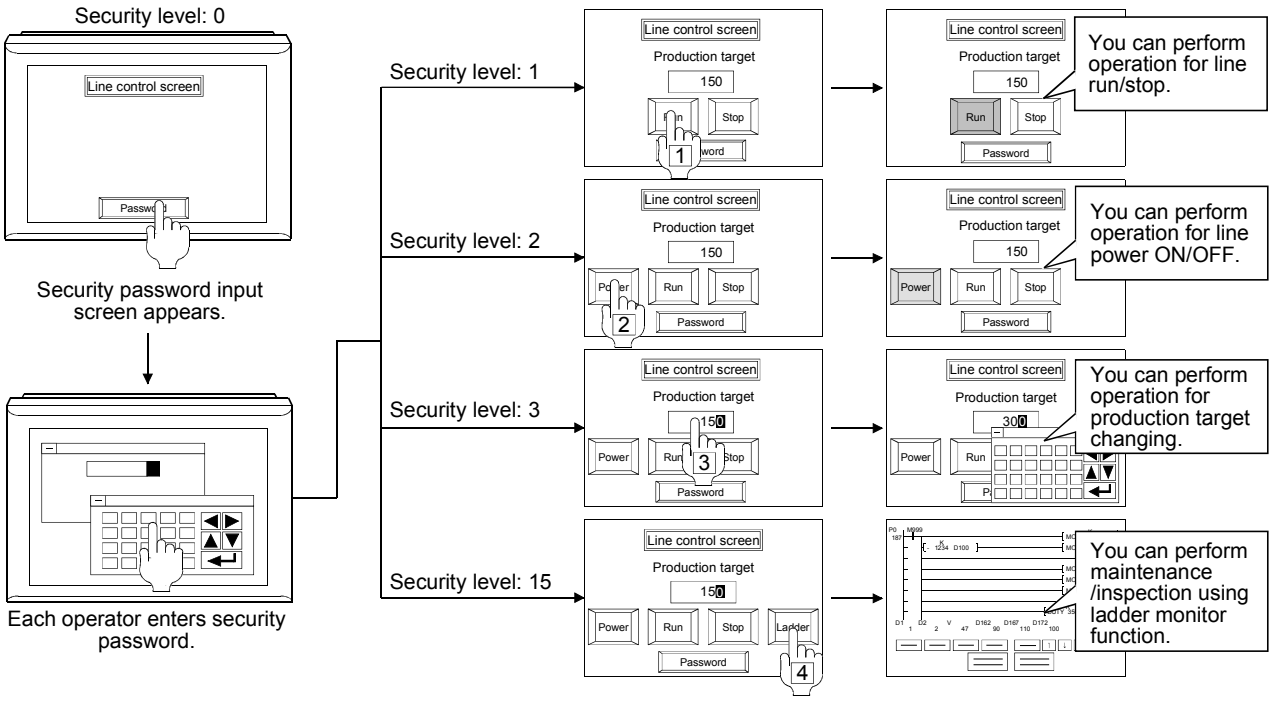
(1) Function outline

(a) Changes the object functions which can be performed by specific persons.
On the following screen where many object functions have been set, change the operative items depending on operators.



150 ····· For display/changing the production target (Security level 1/3)
Power ····· Switches line power ON/OFF. (Security level 2)
Run ····· Starts the line. (Security level 1)
Stop ····· Stops the line. (Security level 15)
Ladder ····· Starts the ladder monitor function. (Security level 15)
Password ····· Shows the password input screen. (Security level 0)

Operator		Security level of operator	Operation items (○: Operative, ×: Inoperative)						
			150		Power	Run	Stop	Ladder	Password
			display	Change					
1	Field worker	1	○	×	×	○	○	×	○
2	Field responsible person	2	○	×	○	○	○	×	○
3	Plant manager	3	○	○	○	○	○	×	○
4	Maintenance/inspection person	15	○	○	○	○	○	○	○
Others		0	×	×	×	×	×	×	○



Item	Setting Portion		Settings	
Production target	Numerical Input dialog box	<Basic>tab	Device: D100	
		<Option>tab	Security (Display): 1	Security (Input): 3
Power	Touch Key dialog box	<Action>tab	Bit Device: X1	Action: Alternate
		<Option>tab	Security (Display): 2	Security (Input): 2
Run	Touch Key dialog box	<Action>tab	Bit Device: X2	Action: Set
		<Option>tab	Security (Display): 1	Security (Input): 1
Stop	Touch Key dialog box	<Action>tab	Bit Device: X2	Action: Reset
		<Option>tab	Security (Display): 1	Security (Input): 1
Ladder	Touch Key dialog box	<Action>tab	Extended	Extended action: Ladder monitor
		<Option>tab	Security (Display): 15	Security (Input): 15
Password	Touch Key dialog box	<Action>tab	Extended	Extended action: Password

(b) Restricts the screen switching of base screens.

By making the security level of a destination screen higher than that of the current screen, you can restrict the display of the destination screen. (Security level of destination screen: 6)

Item	Setting Portion	Settings
Destination screen security level	Screen auxiliary setting dialog box	Security: 6

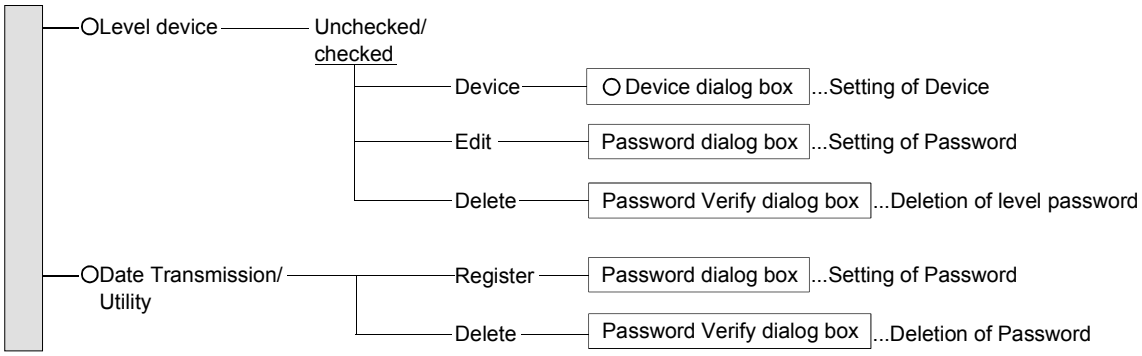
(2) Setting items

The security function consists of the following setting items.

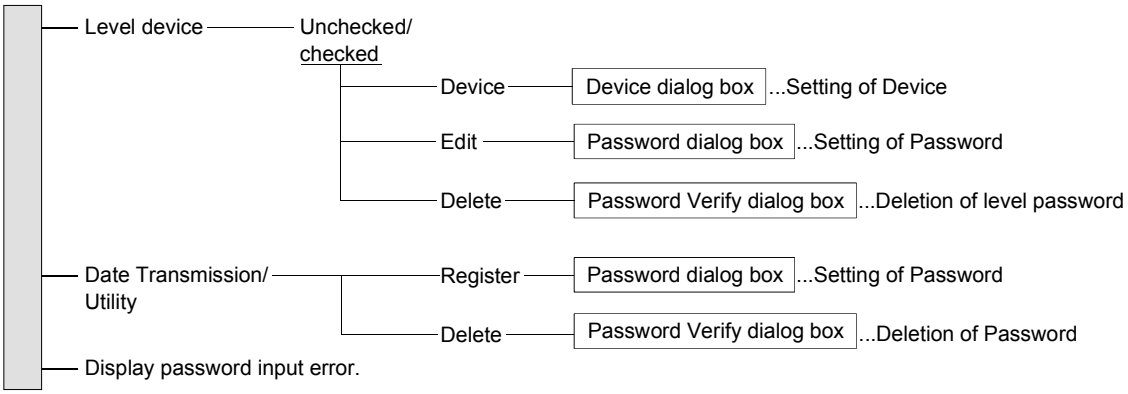
• "Security" dialog box

Set whether the security level is valid or invalid and the password for converting the security level.

(a) When using the GOT-A900 series

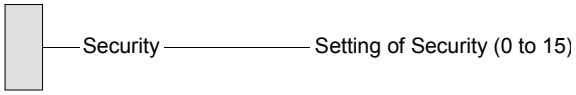


(b) When using the GOT-F900 series



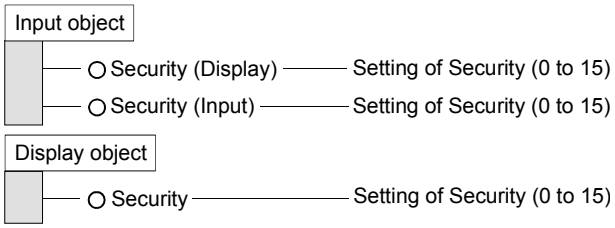
• "Screen Auxiliary Setting" dialog box

Set the security level for the screen.



• "Security function setting object setting" dialog box

Set the security level for each object.



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Firstly].
2) Choose "Setup operations using the "Common" menu"→"Setting up Password" from Contents of Help.

POINT

• How to set the security password

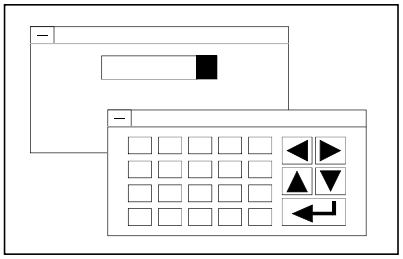
Before using the security function, you must set the password of each security level.

Refer to the help of GT Designer for details of the setting method.

• How to change the security level

When you want to change the security level during operation of the GOT, use the following procedure.

1) Perform either of the following operations on the GOT monitor screen to show the password.
   • Touch the touch key (extended) for switching to the password screen.
   • Touch the password on the utility screen.
2) On the password screen, type the password of the security level you want to change, and touch [↵].
   When stopping the security level change, touch [—] in the password display window.



3) The security level of the current screen is changed and the screen provides the display which matches the security level.
   • If you forgot the security password, security cannot be canceled. Write down the password so that it may never be forgotten.

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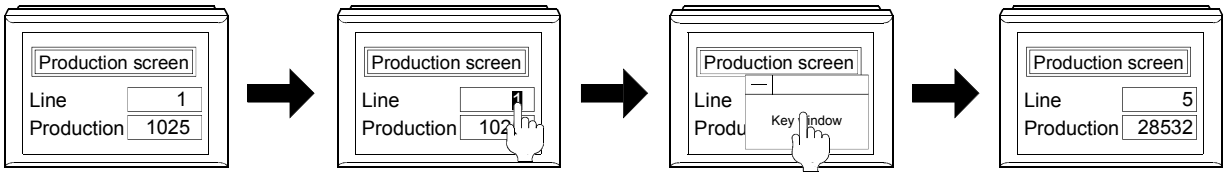
5.9.3 Offset function (monitors multiple devices by setting of one device)

GOT-A900 series	○	GOT-F900 series	×

The value of the set offset device is added to the monitor device address to monitor devices.

(1) Function outline

(a) Shows multiple device values with one numerical display function.
(Monitor device: D100 to D199, offset device: D200)



Production of line 1 is displayed.
Offset value: 1
Device: D100+1=D101

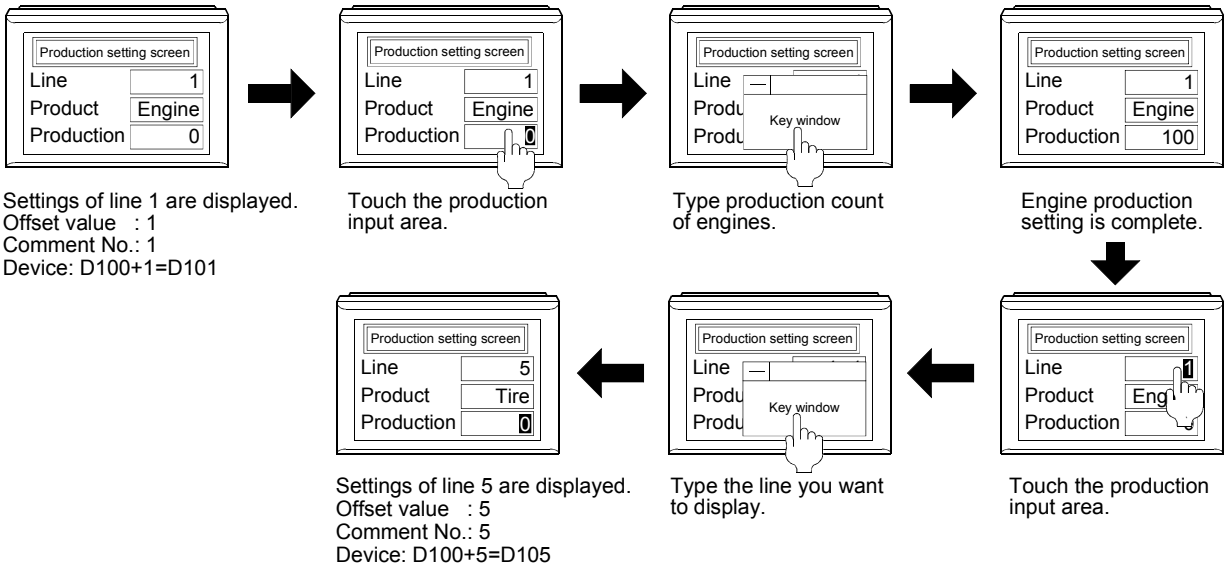
Touch the line input area.

Type the line you want to display.

Production of line 5 is displayed.
Offset value: 5
Device: D100+5=D105

Item	Setting Portion		Settings
Line	Numerical Input dialog box	<Basic>tab	Device: D200
Production	Numerical Display dialog box	<Basic>tab	Device: D100
		<Option>tab	Offset Device: D200

(b) Shows comments in synchronization with the offset function.
(Input devices: D100 to D199, offset device: D200, displayed comment No.: D200)



Settings of line 1 are displayed.
Offset value : 1
Comment No.: 1
Device: D100+1=D101

Touch the production input area.

Type production count of engines.

Engine production setting is complete.

Touch the production input area.

Type the line you want to display.

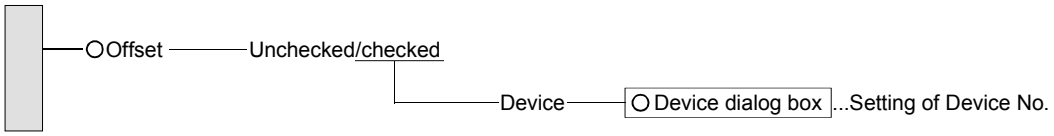
Settings of line 5 are displayed.
Offset value : 5
Comment No.: 5
Device: D100+5=D105

Item	Setting Portion		Settings
Line	Numerical Input dialog box	<Basic>tab	Device: D200
Product	Comment Display dialog box	<Basic>tab	Device: D200
Production	Numerical Input dialog box	<Basic>tab	Device: D100
		<Option>tab	Offset Device: D200

(2) Setting items

The offset function consists of the following setting items.

• "Offset function setting object setting" dialog box



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Object].

2) Type "Offset" in Keyword of Help.

5.9.4 Expression function (performs operation processing of PLC CPU on GOT)

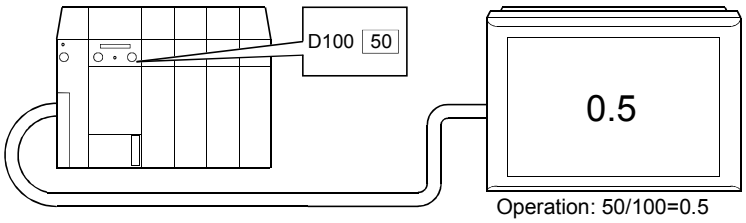
GOT-A900 series	○	GOT-F900 series	○

This function operates on the device value set to the corresponding object with the preset calculation expression to perform the corresponding object function with the resultant value.

(1) Function outline

(a) Shows a monitor device (D100) value as a numerical value having a decimal point.

(Operation expression (monitor): $$/100)



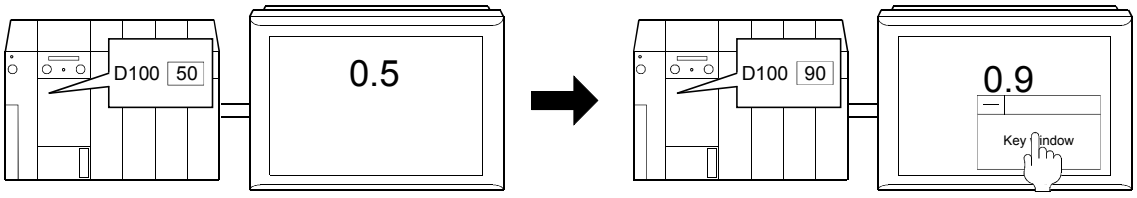
Operation: 50/100=0.5

Setting Portion		Settings
Numerical Display dialog box	<Basic>tab	Device: D100
	<Format>tab	Format: Real Decimal point: 1
	<Expression>tab (GOT-A900 series only)	Expression: $$/100＊1

＊1 Not needed when you use the function "that automatically adjusts the number of decimal digits" of the numerical display functions.

(b) Writes a numerical value with a decimal point to the PLC CPU.

(Operation expression (write): $W × 100, operation expression (monitor): $$/100)



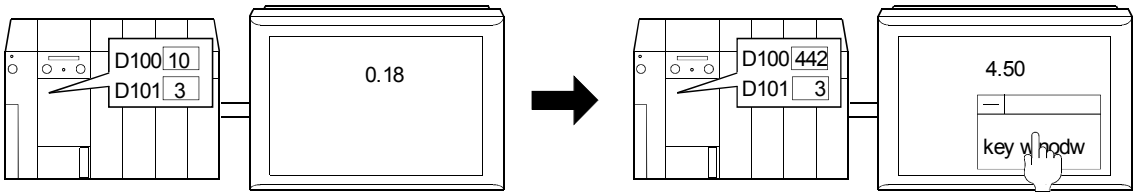
Operation (monitor): 50/100=0.5

Operation (input): 0.9× 100=90

Setting Portion		Settings
Numerical Input dialog box	<Basic>tab	Device: D100
	<Format>tab	Format: Real Decimal point: 1
	<Expression>tab (GOT-A900 series only)	Expression: $$/100, Write word: $W＊100＊2

＊2 Not needed when you use the function "that automatically adjusts the number of decimal digits" of the numerical input functions.

(c) Operation is performed with PLC CPU values handled as values with decimal points.
When the operation result is changed, the value reflecting the change is written to the PLC CPU. (Only when the GOT-A900 series is used.)



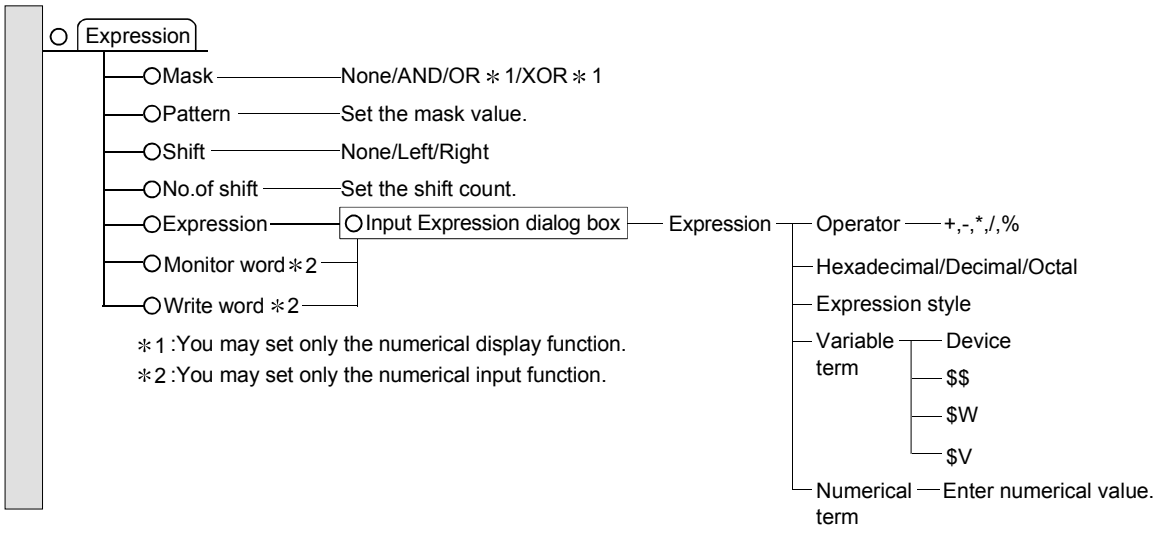
Operation expression : $$ + 0.05 + D101 $W - 5 - D101
Operation : 0.1 + 0.05 + 0.03 = 0.18 450 - 5 – 3 = 442
The "__" part is automatically adjusted by the numerical input object function.

Setting Portion		Settings
Numerical Input dialog box	<Basic>tab	Device: D100
	<Format>tab	Format: Real Decimal point: 2 Adjust decimal point range: checked
	<Expression>tab	Expression: $$+0.05+D101, Write word: $W-5-D101

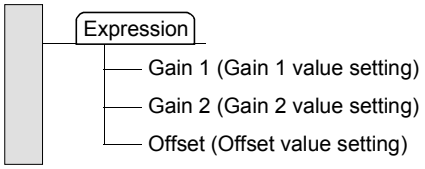
(2) Setting items

The expression function consists of the following setting items.
• "Data operation function setting object" dialog box

(a) When using the GOT-A900 series



(b) When using the GOT-F900 series



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.
1) Choose [Help]-[Object].
2) Type "Expression" in Keyword of Help.

(4) Expression performed when GOT-A900 series is used

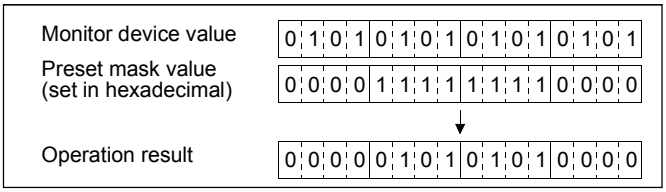
There are the following methods for expression performed for the GOT-A900 series.

(a) Mask operation

Logical product (AND), logical addition (OR), or exclusive logical addition (XOR) operation is carried out by the mask value which was used for setting the monitor device value.

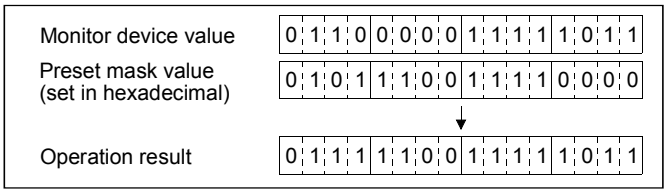
1) Logical product (AND)

The result is 1 only when both bit numbers are 1.
If not, the result is 0.



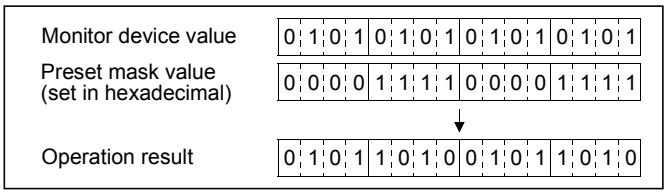
2) Logical addition (OR)

The result is 0 only when both bit numbers are 0.
If not, the result is 1.



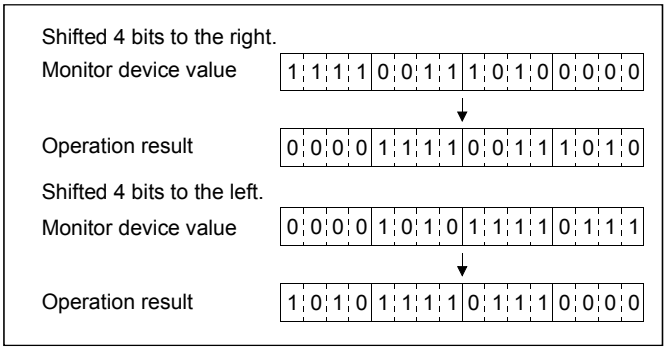
3) Exclusive logical addition (XOR)

The result is 0 when the bit numbers are the same.
If not, the result is 1.



(b) Shift operation

The monitor device value is shifted in the specified direction (to right or left) by the preset bit count.



(c) Operation by formula

This function carries out the arithmetic operation of the monitor device value using the specified expression, and displays the object according to the result of operation.

1) Expression format

A	(A • B) • C	((A • B) • C) • (D • E)
A • B	A • ((B • C) • D)	(A • B) • ((C • D) • E)
A • (B • C)	A • (B •(C • D)	((A • B) • (C • D)) • E

• Values available for A to E

Numerical value ..... Numerical value of up to 32 digits (decimal) including minus and decimal point are available.

$$ ..... Used to specify monitor device values as values A to E.

$W ..... Used to specify input values as values A to E. (Available only when the numerical input function is used.)

$V..... Used to specify the monitor device values/ expression result values as values A to E.

Device..... Used to specify the current device values as values A to E.

2) Available operations

Addition: + Reminder operation: %＊1 Division: /

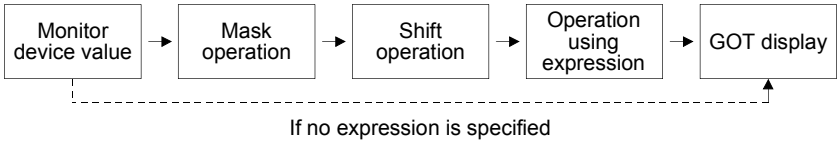
Multiplication: × Subtraction: −

＊1 The left side of the symbol is divided by the right side, and the reminder is the result of operation.

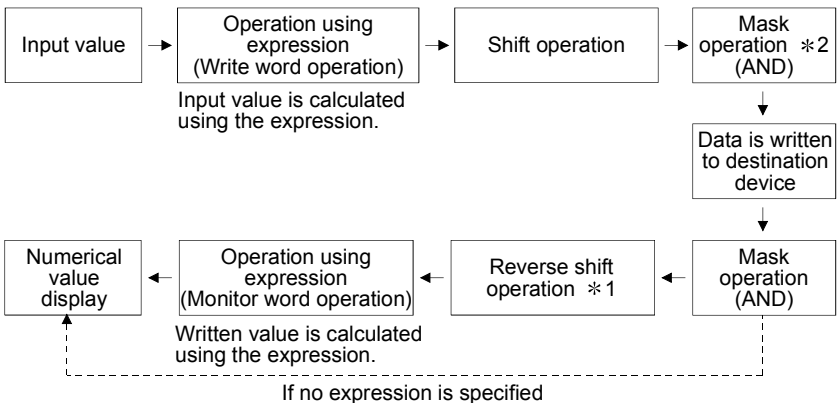
100%3 = 1 (100/3 = 33 with remainder 1)

(d) Operation sequence

1) Sequence of expressions for other than numerical input function



2) Sequence of expressions for numerical input function



＊1 It is opposite to the write shift operation.

For example, if the shift operation is performed 2 bits to the right, the reverse shift operation is carried out 2 bits to the left.

※2 What arithmetic is done by write mask operation

Write mask operation is different from ordinary logical product (AND) operation.
The following arithmetic is done.

Operation result (write value)= (processing result up to shift operation AND mask value) OR (present value AND reverse pattern of mask value)

Example: This example assumes the following setting.

Item	Setting
Input value	5555H
Operation by expression	None
Shift operation	None
Mask value	00FFH
Device value prior to write (present value)	AAAAH

Processing result up to shift operation and mask value are ANDed. 5555H AND 00FFH = 0055H	Device value prior to write (present value) and reverse pattern of mask value are ANDed. AAAAH AND FF00H = AA00H

↓

The above two processing results are ORed and its result is handled as a write value. 0055H OR AA00H = AA55H

(5) Expression performed when GOT-F900 series is used

There are the following methods for expression performed for the GOT-F900 series.

The value resulting from four function arithmetic done on the data of a word element with the values entered into Gain 1, Gain 2 and Offset is displayed or entered.

(a) Gain 1

Multiplication is performed. (Defaults to 1 when not used)

• Word element data × Gain 1

(b) Gain 2

Division is performed. (Defaults to 1 when not used)

• Word element data/Gain 2

(c) Offset

Addition or subtraction is performed. (Defaults to 0 when not used)

Enter a negative value to perform subtraction.

• Word element data + Offset

Calculation is made in the following format.

Word element data × Gain 1 / Gain 2 + Offset

5.9.5 Station number switching function (Switches the monitor destination to the same device of another station number)

GOT-A900 series	○	GOT-F900 series	×

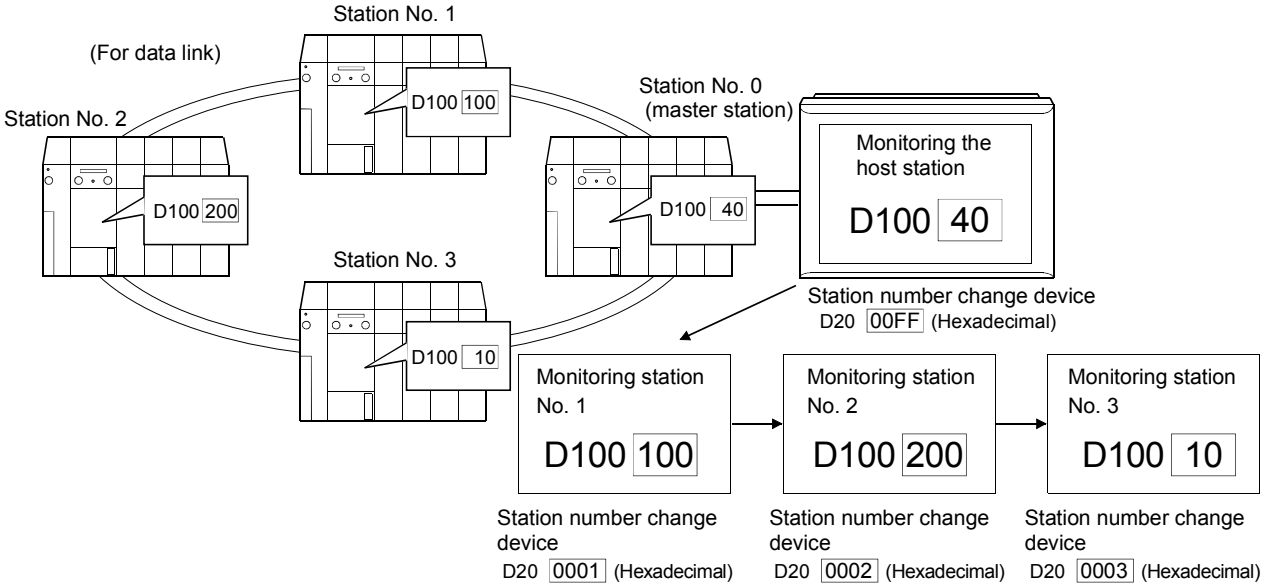
This function allows you to switch the device of the currently monitored object to the same device of another station number on the same data link/network/CC-Link/Ethernet system to monitor multiple PLC stations on the same monitor screen. This function is available only when the connection target PLC is the MELSEC-A, MELSEC-QnA or MELSEC-Q series.

POINT

The stations whose station numbers can be changed are the same as those in the access range that the GOT can monitor.
For the range that can be monitored, refer to the GOT-A900 Series User's Manual (GT Works Version5/GT Designer Version5 compatible Connection manual).

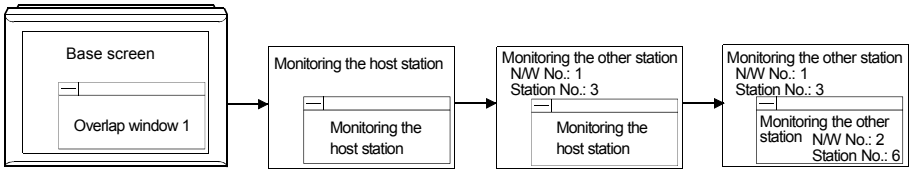
(1) Function outline

(a) The same object is used to monitor the devices of the other stations.



Setting Portion		Settings
Switching Station No. dialog box		All Device: D100
Screen Auxiliary setting dialog box	< Auxiliary >tab	Carry out station no. change: checked

(b) The network/station is selected and monitored according to the screen type.



Station number change device (hexadecimal)

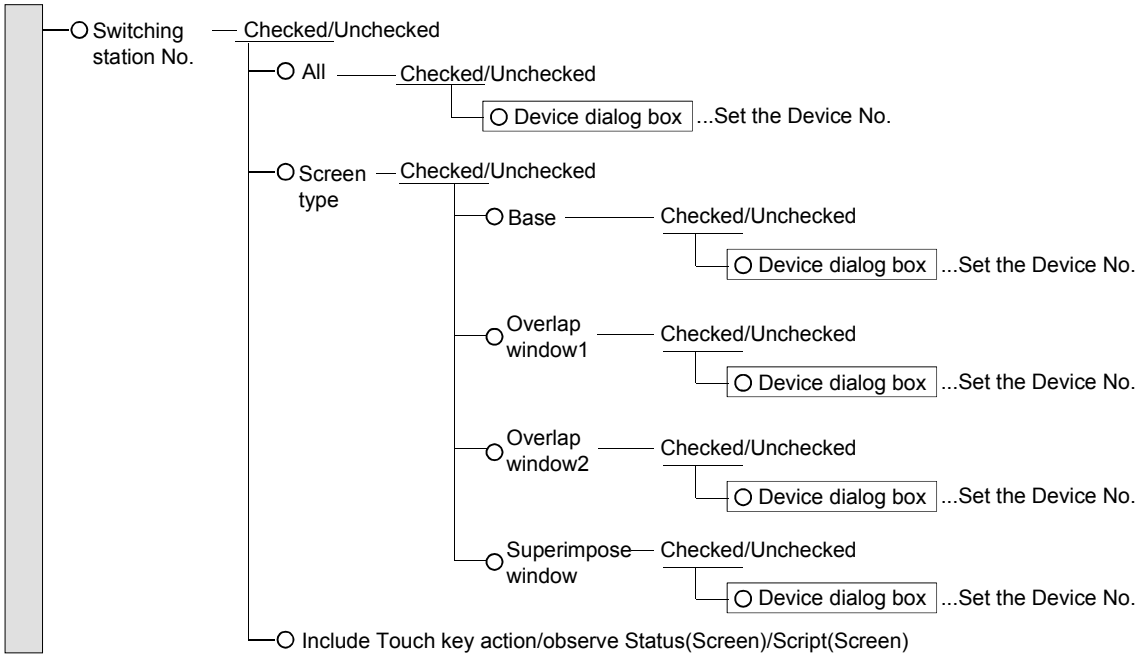
Base screen	:D20 00FF	→	0103	→ 0103
Overlap window screen 1	:D21 00FF		00FF	0206

Setting Portion		Settings
Switching Station No. dialog box		Screen type Base: D20 Overlap window 1: D21 Overlap window 2: D21
Screen Auxiliary setting dialog box	< Auxiliary >tab	Carry out station no. change: checked

(2) Setting items

The station number switching function consists of the following setting items.

• "Switching Station No." dialog box



(3) Setting method

Refer to the following items of the help for details of the settings and operation method.

1) Choose [Help]-[Firstly].

2) Choose "Setup operations using the "Common" menu"→"Setting up the switching station number device" from Contents of Help.

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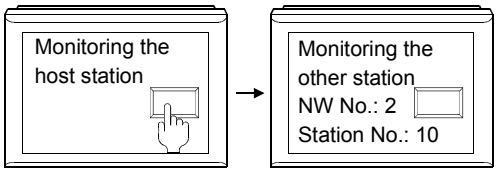
POINT

- The stations accessible by switching station number are equal to the stations that can be accessed for monitoring the objects.
  For details, refer to the operating manual for the GOT-A900 Series Operating Manual (GT Works Version5/GT Designer Version5 compatible Connection System Manual)
- The devices for the following objects do not allow the switching station number. Even when a switching station number is instructed, the GOT continues the monitoring using the same device specified by the object.
  - Alarm list ∗1
  - Trend graph display∗1
  - Hardcopy function
  - System information function
  - Clock display
  - Switching screen
  - Alarm history display
  - Switching station number
  - Report Function
  - Scatter chart display function∗1

  ∗1: Unusable only when the memory save function is used.
- When a GOT data register (GD) is used for the station No. switching device, the GOT monitors station No.0 of network No.0 immediately after the GOT is started until a value is set for the station No. switching device (GD).
  Thus, the system alarm "402 Communication timeout. Confirm communication pathway or modules." will occur depending on the connection type.
  To not occur the system alarm, create the initial displaying screen and set the value to switching station No. device in the screen.
- The station number can be changed by performing station number switching operation with the touch key.
  Refer to Section 5.5 for the station number switching operation with the touch key.

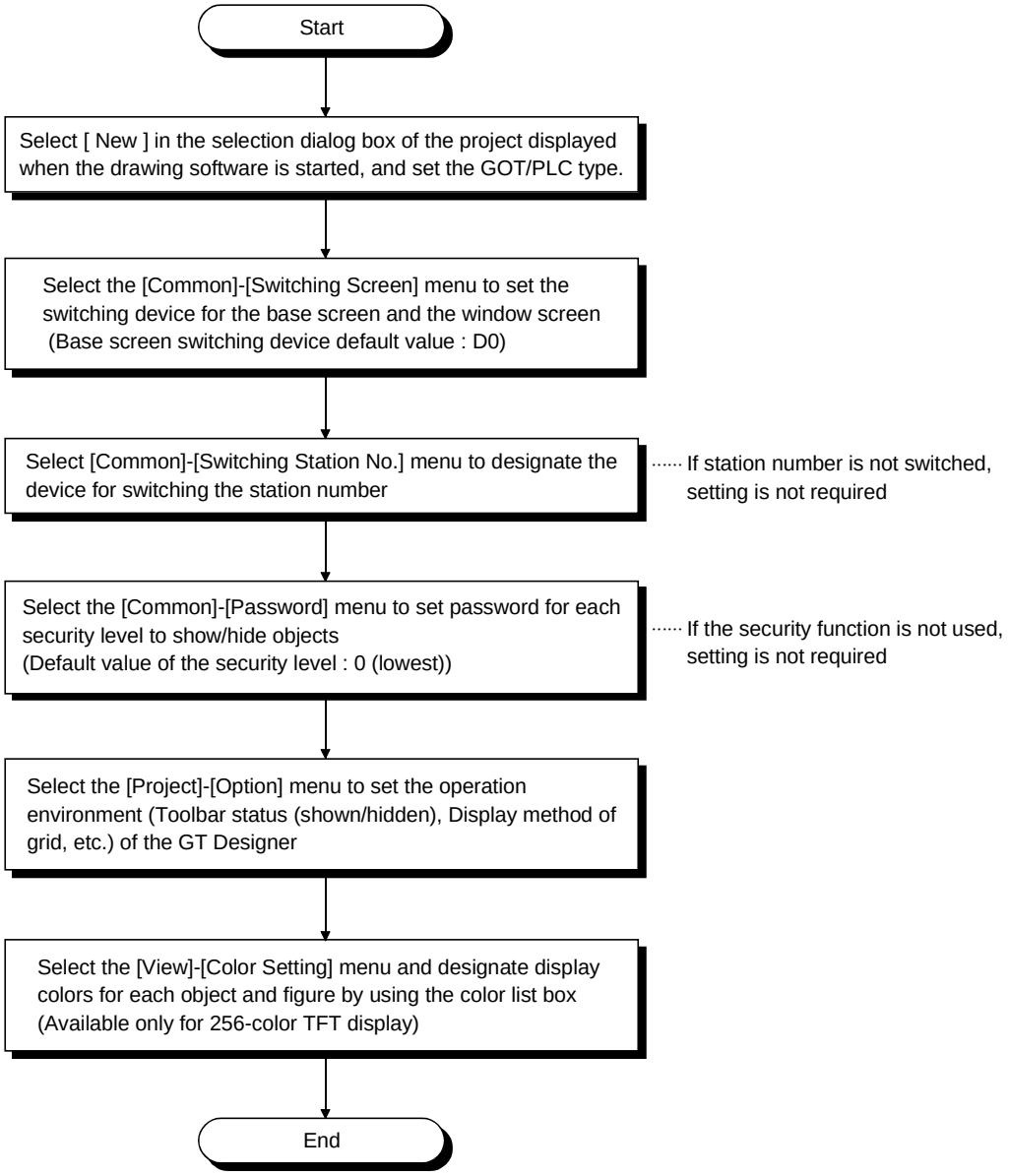


CHAPTER6 OPERATION FOR DISPLAY OF MONITORING SCREEN ON GOT

6.1 Operations to Be Set for the First Time

GOT-A900 series	○	GOT-F900 series	○

The following describes the outline of the procedures for common setting required for preparing screens on the GT Designer.
For operation procedures of each item, refer to the help window of the GT Designer.



6.2 Operations for Drawing Figures

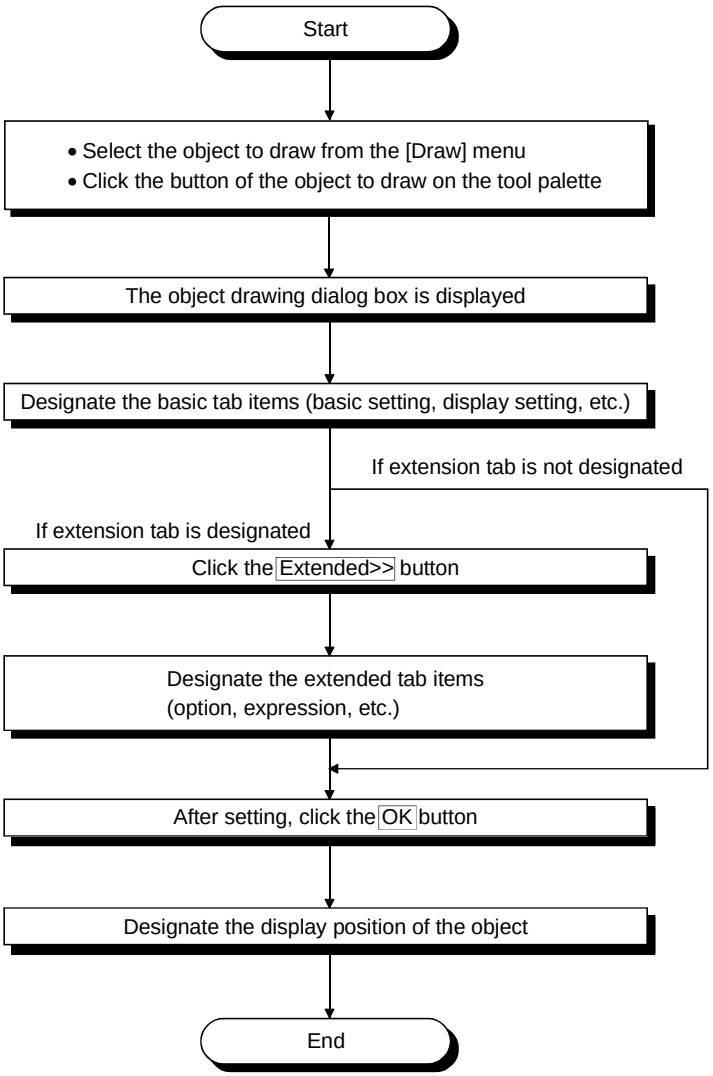
GOT-A900 series	○	GOT-F900 series	○

Operations for drawing figures are described in the help window.
For further details, refer to the help window of the GT Designer.

6.3 Operations for Object Setting

GOT-A900 series	○	GOT-F900 series	○

The following describes the outline of the operation procedures for drawing objects.
For further details, refer to the help window of the GT Designer.



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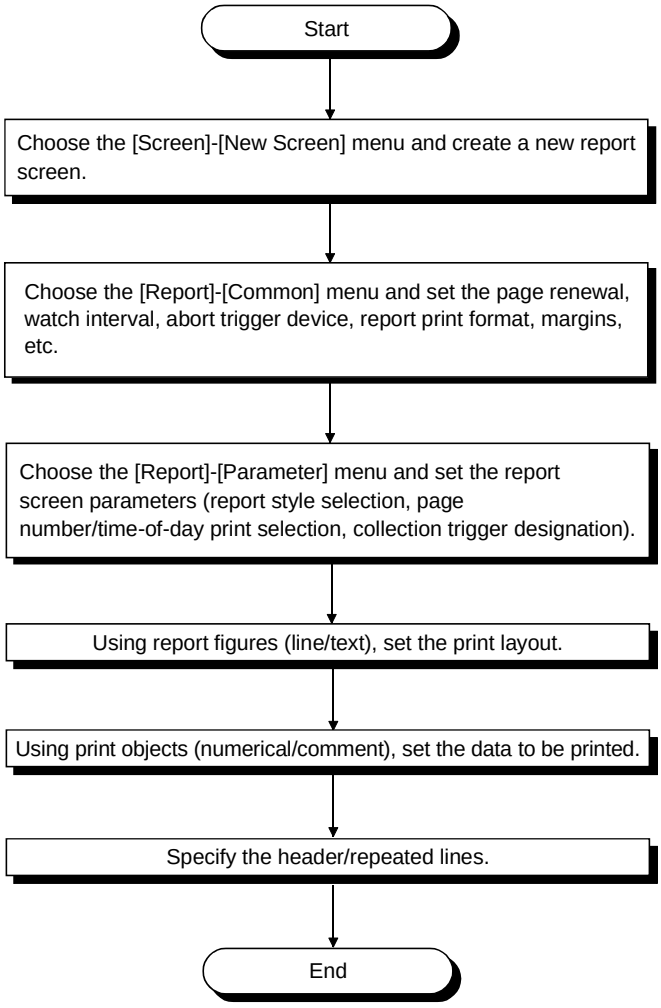
6.4 Operations for Creating a Report Screen

GOT-A900 series	○	GOT-F900 series	×

The following flowchart gives an outline of operation procedure for creating a report screen.
For full information, refer to the help function of the GT Designer.



6.5 Installation Operations of System Program

GOT-A900 series	○	GOT-F900 series	×

POINT

When using GT SoftGOT, you need not perform this operation.

6.5.1 Types of system program installed on GOT

To operate the GOT, the following system programs must be installed on the GOT.

POINT

- If the system program of GT Designer used to create the screen data is newer than the system program installed in the GOT unit, the older system program may not be compatible with some new functions.
  When downloading the screen data, it is recommended to install the system program again.
- The versions (leftmost versions) of the basic function OS, PLC communication driver and extended function OS to be installed into the GOT should be the same.
  If they are different, the GOT will not operate.

(Example 1)

Basic function OS	: Ver. 9.*.*
PLC communication driver	: Ver. 9.*.*
Extended function OS	: Ver. 9.*.*

The GOT operates.

(Example 2)

Basic function OS	: Ver. 9.*.*
PLC communication driver	: Ver. 8.*.*
Extended function OS	: Ver. 8.*.*

The GOT does not operate.

(1) Standard monitor OS

The system program to control the monitor function

(2) Communication driver

The driver to communicate between the GOT and the PLC CPU

(3) Extended function OS (Installed as required)

(a) The system programs which provides the GOT with the following extended functions

- Ladder monitoring function
- Recipe function
- Operation panel function
- System monitoring function
- Sound function
- Report function
- Special unit monitoring function
- Printer function
- Barcode function
- Network monitoring function
- Video display function
- RGB screen display function
- Motion monitoring function
- Gateway function
- Servo amplifier monitor function

(b) Combination of installable extended function Operating Systems

Up to nine of the following extended function OSs can be selected as a combination of extended function OSs that can be installed into the GOT. The number of installable extended function OSs varies with the GOT built-in memory space. (If an extension memory board is not fitted, the extended function OSs equivalent to a total of up to six required memories in the table can be stored.)

Refer to Appendix 6 for details of the GOT built-in memory and installed extended function OSs.

Extended Function OS Name		Number Equivalent to Required Memories at Installation	Remarks
System monitor		1	—
Ladder monitor	MELSEC-A ladder monitor	1	Only one may be selected.
	MELSEC-QnA ladder monitor function∗1	2	
	MELSEC-Q ladder monitor function∗1	2	
	MELSEC-FX ladder monitor	1	
Motion Monitor		2	—
Special unit, Recipe, Sound		1	—
Network monitor		1	—
List editor function (MELSEC-A)∗1		2	—
Gateway (Server/Client, FTP Server, Mail)		2	—
Servo amplifier monitor		2	—
Other	ESC Printer, Barcode, Report, CSV, Key board∗2	1	Only one may be selected.
	PCL Printer, Barcode, Report, CSV, Key board∗2	1	
	ESC Printer, Barcode, Report, CSV, I/O∗2	1	
	PCL Printer, Barcode, Report, CSV, I/O∗2	1	
	ESC Printer, Barcode, Report, CSV, Video/RGB∗2	1	
	PCL Printer, Barcode, Report, CSV, Video/RGB∗2	1	
	Chinese(Big5) Printer, Barcode, Report, CSV, Key board∗2	1	
	Chinese(Big5) Printer, Barcode, Report, CSV, I/O∗2	1	
	Chinese(Big5) Printer, Barcode, Report, CSV, Video/RGB∗2	1	
	Chinese(GB) Printer, Barcode, Report, CSV, Key board∗2	1	
	Chinese(GB) Printer, Barcode, Report, CSV, I/O∗2	1	
	Chinese(GB) Printer, Barcode, Report, CSV, Video/RGB∗2	1	

∗1: If the OSs are installed into the GOT where multiple extended/optional functions have already been installed, they may not be installed depending on the status of the GOT memory area. In such a case, install them again after removing the extended/optional functions installed in the GOT.

∗2: Install the "Other" extended function OSs when using the following functions.

- Report function
- Operation panel function
- Printer function
- Barcode function
- Video display function
- RGB display
- External I/O function
- When object function is used to create CSV format files

For this extended function OS, refer to the following 1) and 2) and select the OS that meets the language to be output to the printer or CSV file and the optional device used.

1) Language to be output to the printer connected to the GOT or the CSV file (alarm history display function, recipe function)

ESC printer	: Output in Japanese
PCL printer	: Output in English
Chinese (Big 5) printer	: Output in Chinese (traditional language)
Chinese (GB) printer	: Output in Chinese (simplified language)

2) Used optional device

External key input	: Operation panel, ten-key panel (operation panel function)
Proximity I/O	: External I/O device (external I/O function)
Video/RGB input	: Video camera (video display function), personal computer (RGB display function)

(4) ROM_BIOS (Reinstalled as required)

ROM_BIOS is a system program designed to control the GOT hardware and to make communication between the personal computer and GOT.
ROM_BIOS is installed the GOT before it is shipped from the factory, but when specific functions are used, ROM_BIOS of the compatible version or later must be reinstalled in the GOT.
Before starting reinstallation, always check the precautions in Section 6.5.2.

6.5.2 Required knowledge before installation of system program

(1) Operations required to use new functions supported by the new version of the GT Designer

1) When using the following function, check that the version of ROM_BIOS installed in the GOT is compatible with the function used.

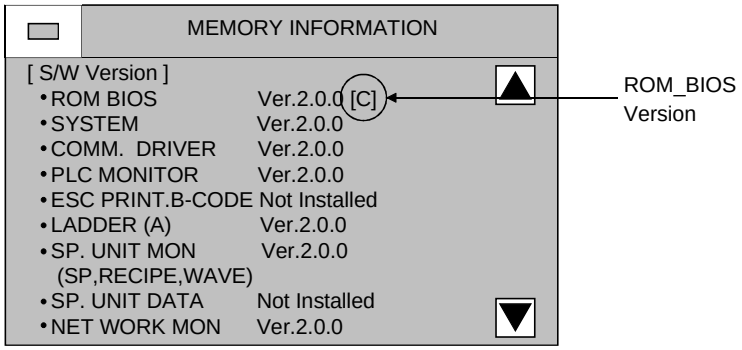
Function Name	Applicable version of ROM_BIOS	
	For A985 / 97＊ / 960GOT	For A95＊GOT
When using the flash PC card＊1	Version F or later	Not allowed for use
QnA ladder monitor function, Q ladder monitor function	Version H or later	Not allowed for use
When using the A9GT-FNB8M/ A9GT-QFNB8M	Version J or later	Not allowed for use
Maximum number of base screens set (when using 1025 to 4096 screens)	Version P or later	
Ethernet connection function	Version Q or later	
Gateway function	Version S or later	

＊1: If either of the following status has occurred during use of the flash PC card, perform the scan disk of the flash PC card on the personal computer used.
- PC card-related error code (334, 351, 352, 353, 354, and 355) was detected by the alarm list (System Alarm) function.
- The "Data transfer error" message was displayed when you executed the screen copy of the utility functions.

＊2: The corresponding ROM_BIOS is factory-installed in the GOT unit.

POINT

- How to check the ROM_BIOS version installed in the GOT
  Use the memory information function of the GOT.



2) If ROM_BIOS of the GOT is not compatible, reinstall ROM_BIOS of the GT Designer in the GOT.

POINT

- How to check the ROM_BIOS version of the GT Designer
  Select the [Communication] - [Install] - [ROM_BIOS] menu, and check the version of ROM_BIOS in the [ROM_BIOS Install] dialog box.

3) Install the OS in the GOT.

(2) Precautions for installing the system program

- Before installing the system program to the GOT under use, be sure to make a backup of the screen data stored in the GOT. (Backup data is not required if the screen data is stored in FD or HD.)
  If the system program is installed, the screen data stored in the memory of the GOT will be deleted.
  Back-up operation can be carried out by using the upload function.
- Check that the communication cable connectors are firmly attached to the connection ports on the GOT and the personal computer.
- Set up communication of the personal computer (RS-232C port, communication speed).
  Select the [Project]-[Option] menu and set up communication.
- Do not input other data to the PC card to which the ROM_BIOS is to be installed.
  When the ROM_BIOS is installed from the PC card to the GOT, other data will be deleted.
- Before installing the system program, be sure to remove the communication unit/communication board/option unit from the GOT.
  If the GOT has the built-in communication interface, disconnect the communication cable.

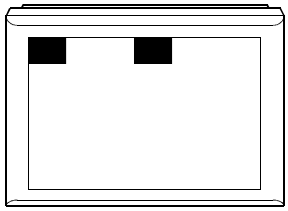
(3) Precautions while the system program is installed

- Do not turn OFF the GOT or the personal computer.
  Do not disconnect the communication cable.
  If the GOT or the personal computer is turned OFF or if the communication cable is disconnected during installation, the GOT may stop operating.
- Once installation of the ROM_BIOS is started, it cannot be canceled.
  If canceled, the GOT may stop operating.
- Once installation of the OS is started, it can be canceled, but re-installation is required.
  If the GOT or the personal computer is turned OFF or if the communication cable is disconnected to cancel installation, the GOT may stop operating.

POINT

If the GOT does not run due to any of the above-indicated operations, reinstall the system program in the following procedure.

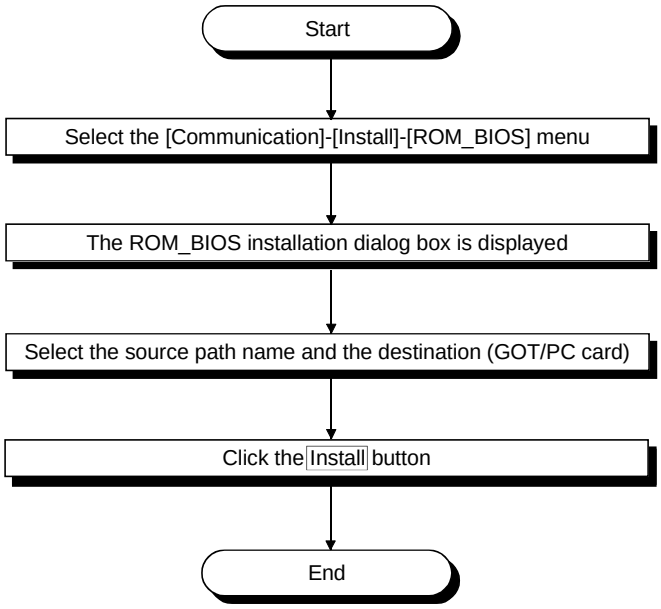
1) Switch off the GOT unit.
2) Remove the communication board/communication unit/option unit loaded to the GOT.
   If the GOT has the built-in communication interface, disconnect the communication cable.
3) Hold down the following two places of the GOT display section at the same time and switch on the GOT.



4) The "Reinstall the ROM_BIOS/OS" message appears on the GOT display section.
5) Follow the instructions on the GOT display section to complete the installation operation.

6.5.3 Installation of ROM_BIOS

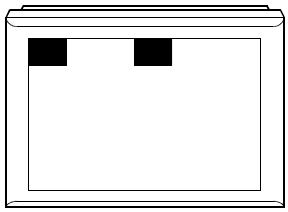
The following describes the outline of the operation procedures for installation of the ROM_BIOS.
For further details, refer to the help window of the GT Designer.



POINT

The ROM_BIOS is installed as follows according to the destination (GOT/PC card).

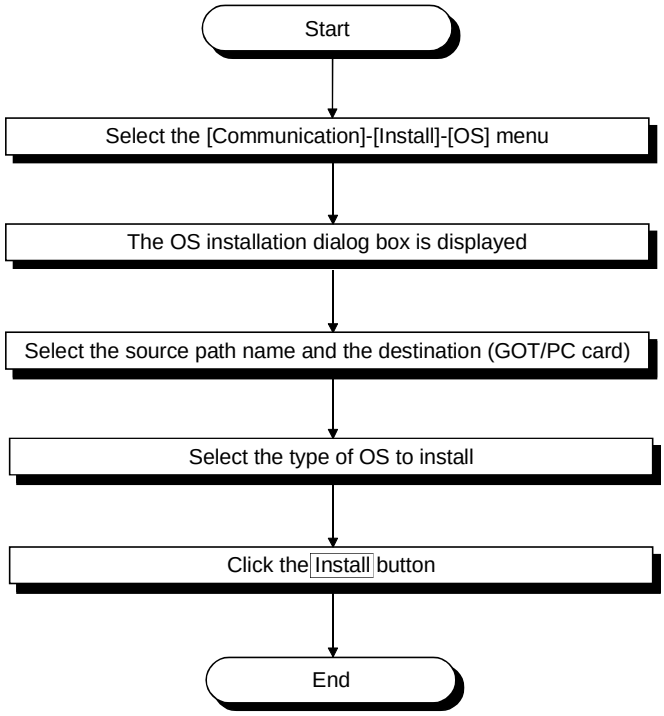
- If installed to GOT
  The ROM_BIOS is installed to the built-in memory of the GOT via RS-232C.
- If installed to PC card
  The ROM_BIOS is copied to the PC card mounted to the PCMCIA slot.
  Mount the PC card which contains the ROM_BIOS to the GOT, and install the ROM_BIOS to the built-in memory of the GOT by the following procedure.
  1) Mount the PC card to the GOT.
  2) Turn OFF the GOT.
  3) Remove the communication board/communication unit/option unit from the GOT.
     If the GOT has the built-in communication interface, disconnect the communication cable.
  4) Turn ON the PC card access switch.
  5) Turn ON the GOT while pressing the following two areas on the GOT display simultaneously.



  6) The message to indicate that ROM_BIOS is being installed appears on the GOT display, and installation is carried out.
  7) Complete installation according to the instruction on the GOT display.

6.5.4 Installation of OS

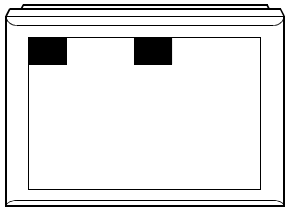
The following describes the outline of the operation procedures for OS installation.
For further details, refer to the help window of the GT Designer.



POINT

The OS is installed as follows according to the destination (GOT/PC card).

- If installed to GOT
  The OS is installed to the built-in memory of the GOT via RS-232C.
- If installed to PC card
  The OS is copied to the PC card mounted to the PCMCIA slot of the personal computer.
  Mount the PC card which contains the OS to the GOT, and install the OS to the built-in memory of the GOT by the following procedure.
  1) Mount the PC card to the GOT.
  2) Turn OFF the GOT.
  3) Remove the communication board/communication unit/option unit from the GOT.
     If the GOT has the built-in communication interface, disconnect the communication cable.
  4) Turn ON the PC card access switch.
  5) Turn ON the GOT while pressing the following two areas on the GOT display simultaneously.

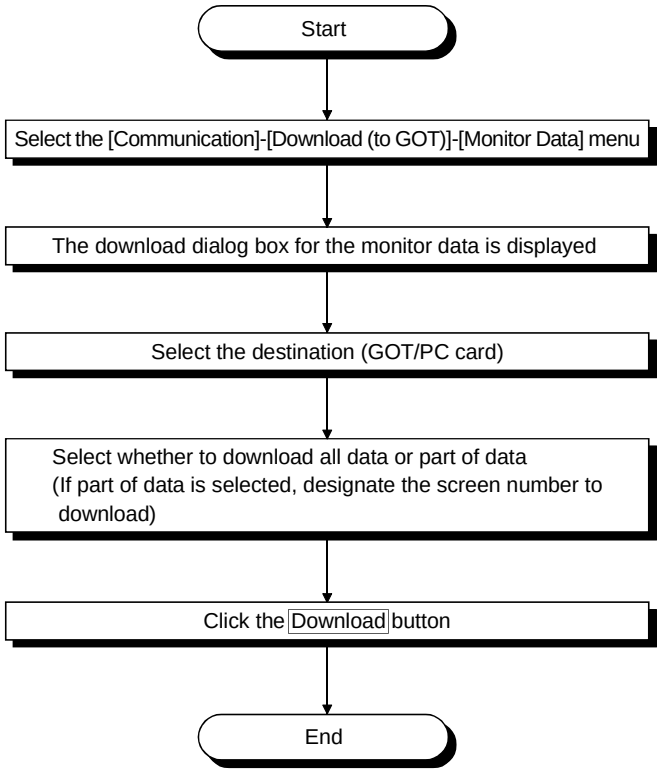


  6) The message to indicate that OS is being installed appears on the GOT display, and installation is carried out.

6.6 Download of Screen Data

GOT-A900 series	○	GOT-F900 series	○

The following describes the outline of the operation procedures for downloading the screen data.
For further details, refer to the help window of the GT Designer.



POINT

- For screen data downloading (reading) operation performed when GT SoftGOT is used, refer to the GT SoftGOT Version 5 Operating Manual.
- The screen data is downloaded as follows according to the destination (GOT/PC card).
  (When using the GOT-F900 series, you cannot select the PC card.)
  If downloaded to GOT
  The screen data is downloaded to the built-in memory of the GOT via RS-232C.
  If downloaded to PC card
  The screen data is copied to the PC card mounted to the PCMCIA slot of the personal computer.
  Mount the PC card which contains the screen data to the GOT, and select the screen copy function from the utility screen of the GOT to copy the screen data to the built-in memory of the GOT.
  For details of the screen copy function, refer to the GOT-A900 series operating manual (extended • option functions manual).

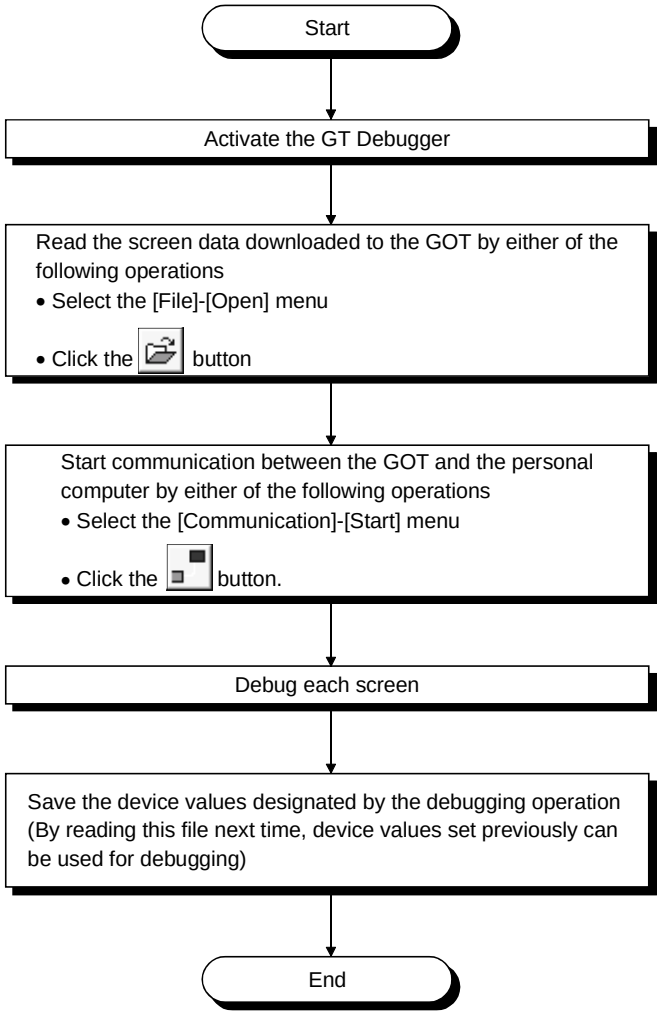
6.7 Debugging of Screen Data

GOT-A900 series	○	GOT-F900 series	×

POINT

When using GT SoftGOT, you cannot use GT Debugger.

The following describes the outline of the operation procedures for debugging the screen data downloaded to the GOT between the personal computer and the GOT. For further details, refer to the help window of the GT Debugger.



CHAPTER7 SCRIPT FUNCTIONS

7.1 Overview

This chapter explains the script functions which can be used with the GOT-A900 series.
The script functions are designed to control the GOT display with the GOT's original programs (hereafter abbreviated to "scripts").
Controlling the GOT display with the GOT side script reduces the load sharply on the system side (e.g. PLC CPU, microcomputer) display.

7.1.1 Features

(1) Ease of system maintenance

Using the script functions, the system side needs only machine control programs, facilitating system maintenance.

(2) A variety of screen controls exercised by GOT alone

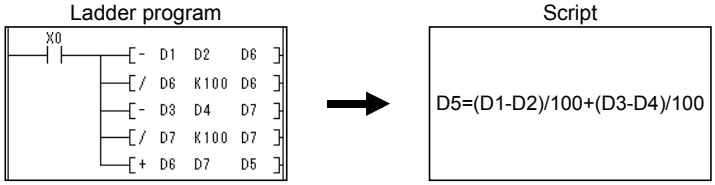
Using the script functions enable the following operations which could not be achieved by the GOT alone.

(a) Cooperation with various object functions

- A single lamp represents multiple bit device states.
- A specific part is displayed if any of multiple bit devices is on, and is erased if they are all off.
- As soon as a numeric value is input, a part denoting "Already input" is pasted to the place adjacent to the input value indication frame.
- A single touch switch is used to perform multiple operations corresponding to multiple states.
- As soon as the alarm list (system alarm) function detects an error, the troubleshooting screen appears automatically.

(b) Complicated arithmetic processing

- A polynomial operation which was difficult to be represented in a ladder program is represented simply on a single line.



- Not only four fundamental operations but also various application arithmetic functions, such as trigonometric and exponential functions, can be used optionally.

(c) Unlimited application fields

- The corresponding year, month and day are found by the entry of year, month and day and the entry of the number of days.
  When will it be 345 days after May 20, 2000? → April 30, 2001
- The day of the week is found by the entry of year, month and day.
  What day of the week is February 21, 1961? → Tuesday

(3) Easy-to-understand programming language

As a script is a language type program like the C language, all you need is entry-level programming knowledge to create programs.

(4) Programming editors available on the market

You can use the familiar text editors (e.g. Microsoft® Windows® -standard memo pad, Wordpad) for programming to improve program productivity.

(5) Execution condition selectable on script basis

Any of various conditions (any time, periodic, bit OFF to ON/ON to OFF, during bit ON/OFF, periodic during bit ON/OFF) may be chosen as a trigger to execute each script, enabling script execution scheduling.

(6) Fully useful debugging functions

Since a script is like the C language, the general C language compiler or debugger (e.g. Microsoft® Visual C++) can be used for simulation by making slight corrections. This is effective for debugging a complicated script which uses many control statements.

The system monitor function is useful for hardware debugging using the GOT. You can use the test and device monitor functions to check conditional branching in a script. By monitoring the GOT special registers (GS), you can easily check error information and a script in execution.

(7) Grammar check on created scripts

Before executing created scripts on the GOT, you can make a grammar check on GT Designer, increasing programming efficiency.

(8) Digital's script language convertible

You can convert the script language (D script/global D script) created on Digital package "GP-PRO/PBIII for Windows 95 (Ver. 3.0)" and operate it on the GOT.

POINT

- Make "execution condition setting" and "grammar check" on GT Designer at the time of monitor screen creation. Refer to GT Designer help for details.
- Digital's script language is converted on GT Converter.
  Refer to the GT Converter help for convertible data and converting method details.

7.1.2 Operating instructions

You should know the following instructions to use the script functions.

(1) Usable range of the script functions

Since these functions are designed to control the GOT display, do not use them to exercise machine control which demands severe timings.
For data changes to be made from the GOT to the PLC, configure up an interlock circuit in a sequence program to ensure that the whole system will operate safely.

(2) Stopping the script processing

In any of the following cases, the corresponding script processing is stopped, resulting in an error.

- A numerator is divided by a denominator of 0
- A monitor device value cannot be handled as BCD when "16-bit BCD" or "32-bit BCD" was selected as a script data format.
  Example) [D0]=[D1]: Present value of D1 is "0x991A"
- An operation result is outside the BCD range when "16-bit BCD" or "32-bit BCD" was selected as a script data format.
  Example) 16-bit: Other than 0 to 9999
  32-bit: Other than 0 to 99999999
- As the write destination device of the while statement, a temporary device area (TMP) was not used but the PLC CPU device or GOT internal device (GD) was used.

POINT
• Refer to Section 7.2.3 for details of the usable data ranges. • Refer to Section 7.2.2 for details of the while statement. • Refer to Section 7.5 for the actions to be taken when script processing has stopped.

(3) Differences in processing result between data formats

Note that any of the following cases will produce an unintended processing result.

- When the script data format selected is other than "16-bit BCD" and "32-bit BCD", the constant described is outside the range of the selected data format.
- When the script data format selected is "16-bit unsigned BIN" or "32-bit unsigned BIN", the constant described is negative.
- When the script data format selected is other than "real number", the constant described is with a decimal point.

POINT
Refer to Section 7.2.3 for details of the data formats.

(4) Instructions for monitor device description

Some PLC CPU devices to be monitored require their device numbers to be described in the specific number of digits.
Note that a malfunction may occur if they are not described in the specific number of digits.

POINT
Refer to Section 7.2.3 for details of the describing method.

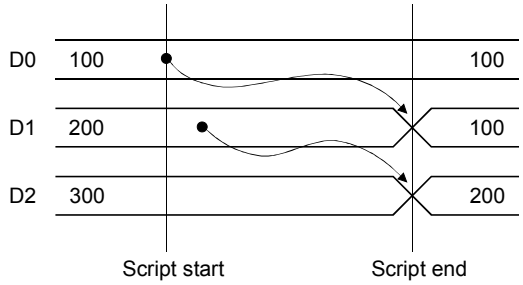
(5) Instructions for substitution delay

The script function writes the operation result to the PLC CPU at an end of one script.

Hence, performing substitution processing as in "Example 1" causes a write delay. Describe a script as in "Example 2" and "Example 3" to minimize the frequencies of communications with the PLC CPU and avoid influence on monitor processing.

Example 1) Substitution processing using PLC CPU devices

```
[w:D1]=[w:D0];          //substitutes D0 into D1.
[w:D2]=[w:D1];          //substitutes D1 into D2.
```

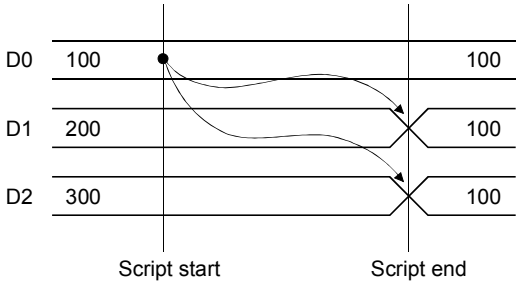


In this script, the D0 value is not reflected on D2 immediately, causing a write delay. This status persists until this script is processed.

Note that using the GOT internal devices (GD, GB) as the substitution devices will give the same result.

Example 2) Substitution processing using temporary works

```
[w:TMP0001]=[w:D0];     //substitutes D0 into TMP0001.
[w:D1]=[w:TMP0001];     //substitutes TMP0001 into D1.
[w:D2]=[w:TMP0001];     //substitutes TMP0001 into D2.
```



Using the temporary works designed for script functions prevents a write delay.

POINT
Refer to Section 7.2.3 for details of the temporary works.

Example 3) Substitution processing using GOT internal devices (GD, GB)

```
[w:GD1]=[w:D0];          //substitutes D0 into GD1
[w:D1]=[w:GD1];          //substitutes GD1 into D1.
[w:D2]=[w:GD2];          //substitutes GD1 into D2.
```

As the processing timing using GOT internal devices (GD, GB) is the same as that using temporary works, a write delay can be prevented. When using the GOT internal devices to prevent a substitution delay, perform GOT internal device substitution delay cancel in the script setting of GT Designer.

POINT

- Refer to the help of GT Designer for details of the script setting using GT Designer.
- When GOT internal device (GD, GB) substitution delay cancel is performed, a link scan is made on each line having the GOT internal device (GD, GB). Note that the monitor processing of the GOT may delay when GD internal devices (GD, GB) are used in many places.

(6) Precautions for converting Digital's script language

The LS devices described in Digital's script language are designed to be free from a substitution delay.
Hence, when Digital's script language using LS devices as shown in "Example 1" in (5) is converted, different operation may be performed on the GOT.
As shown in "Example 2" in (5), use temporary works in Digital's script language using LS devices to prevent a substitution delay.

7.2 Specifications

This section describes the specifications of the script functions.

7.2.1 Types

There are the following types of script functions.

(1) Project script function

This type of script operates for the whole project created on GT Designer.
The project script function can always be performed during online processing of the GOT.
A script is executed when its preset execution condition is enabled.
Up to 256 scripts can be set to one project.

POINT

- Operating for the whole project, a project script is useful for the following case:
  Example) As soon as the alarm list (system alarm) function detects an error, the troubleshooting screen appears automatically.
- The project script monitor devices are always operating.
  Therefore, note that a larger number of monitor points will make the monitor screen slower in response.

(2) Screen script function

This type of script operates for each screen created on GT Designer.
The screen script function may be performed only while the corresponding screen appears during online processing of the GOT.
A script is executed when its preset execution condition is enabled.
These scripts may be set on base screens/window screens (super impose window, overlap window 1, overlap window 2).
Screens called by the screen calling function will also be the target of script processing.
However, screens shown by the part display function will not be the target of script processing.
Up to 256 scripts can be set to one screen (including the screen called by the screen calling function).

POINT

- Refer to Section 4.1 for details of each screen.
- Refer to Section 5.10.1 for details of the screen calling function.
- Refer to Section 5.4.1 for details of the part display function.
- The project script monitor devices are always operating. Hence, a larger number of monitor points will make the monitor screen slower in response.
- Note that a larger number of screen script monitor device points will make the monitor screen slower in response.

7.2.2 Control structure

This section describes the control structure of the script functions.
The following commands (control statements, operators, functions, etc.) are used to program scripts.
Nesting is allowed in if, while and switch statements.
A return statement is used to end a script.

Item	Command	Description	
Control statement	if	[Statement example]	if(conditional expression){set of expressions}
		[Function]	Exercises judgment control. Evaluates the (conditional expression), and if its result is true (other than 0), executes the {set of expressions}.
		[Point]	An if statement is the most basic judgment control, which is used to perform specific processing for a given value or to change a program sequence.
	if to else	[Statement example]	if(conditional expression){set of expressions 1}else{set of expressions 2}
		[Function]	Exercises judgment control. Evaluates the (conditional expression), and if its result is true (other than 0), executes the {set of expressions 1}, or if false (0), executes the {set of expressions 2}.
		[Point]	An if statement is the most basic judgment control, which is used to perform specific processing for a given value or to change a program sequence.
	while	[Statement example]	while(continuous conditional expression){set of expressions}
		[Function]	Evaluates the (continuous conditional expression), and if its result is true (other than 0), repeats executing the {set of expressions}. If the "continuous conditional expression" is false (0), execution exits from the while statement.
		[Point]	• A while statement is used to perform given processing for up to a specific purpose. (For example, waiting for touch key input) Making the continuous conditional expression always true (other than 0) results in an endless loop. • A temporary device area must be used as the write destination device.

	switch
	case
	default
	brake
		[Statement example]	switch(term)
			{
			case constant:set of expressions;break;
			case constant:set of expressions;break;
			default:set of expressions;
			}

		[Function]	Creates a control statement using four reserved words of switch, case, break and default. In either of the following cases, executes the "sets of expressions" following the case and default statements. • The (term) value matches the "constant" • It does not match the case statement and there is a default statement In either of the following cases, execution exits from { } of switch. • There is a break statement within a script • There are no case statements having the "constants" corresponding to the (term) and no default statement. Note that there may be no break and default statements in the control statement.
		[Point]	The switch statement is used when a given variable value requires different processings to be performed.
	return	[Statement example]	return;
		[Function]	Ends a script.
		[Point]	A single script can have multiple returns.
	;	[Statement example]	;
		[Function]	Represents the end of a single statement. This symbol is necessary at the end of a single statement.

Item	Command		Description	
Operator	Logical	&&	[Statement example] [Function]	if ((relational operation expression)&&(relational operation expression)){.....} 1 if two (relational operation expressions) are both true, or 0 if either is false. (Logical AND operator)
		||	[Statement example] [Function]	if ((relational operation expression)||(relational operation expression)){.....} 1 if either of relational operation expressions is true, or 0 if both are false. (Logical OR operator)
		!	[Statement example] [Function]	if (!(relational operation expression)){.....} 1 if the relational operation expression is 0, or 0 otherwise. (Logical NOT operator)
	Relational	<	[Statement example] [Function]	<Term 1> < <term 2> <Term 1> is less than <term 2>. (Left inequality operator)
		<=	[Statement example] [Function]	<Term 1> <= <term 2> <Term 1> is less than or equal to <term 2>. (Equivalence left inequality operator)
		>	[Statement example] [Function]	<Term 1> > <term 2> <Term 1> is greater than <term 2>. (Right inequality operator)
		>=	[Statement example] [Function]	<Term 1> >= <term 2> <Term 1> is greater than or equal to <term 2>. (Equivalence right inequality operator)
		!=	[Statement example] [Function]	<Term 1> != <term 2> <Term 1> is not equal to <term 2>. (Non-equivalence operator)
		==	[Statement example] [Function]	<Term 1> == <term 2> <Term 1> is equal to <term 2>. (Equivalence operator)
	Arithmetic	+	[Statement example] [Function]	<Term> + <factor> Adds <factor> to <term>. (Addition operator)
		—	[Statement example] [Function]	<Term> — <factor> Subtracts <factor> from <term>. (Subtraction operator)
		*	[Statement example] [Function]	<Term> * <factor> Multiplies <term> by <factor>. (Multiplication operator)
		/	[Statement example] [Function] [Point]	<Term> / <factor> Divides <term> by <factor>. (Division operator) If <factor> is 0, script operation stops.
		%	[Statement example] [Function] [Point]	<Term> % <factor> Finds a remainder derived from division of <term> by <factor>. (Remainder operator) If <factor> is 0, script operation stops.
	Bit device	&	[Statement example] [Function]	<Term> & <factor> Finds the logical product (AND) of <term> and <factor>. (Bit product operator)
		|	[Statement example] [Function]	<Term> | <factor> Finds the logical add (OR) of <term> and <factor>. (Bit addition operator)
		~	[Statement example] [Function]	~ <bit> Negates (inverts) <bit>. (Complement operator)
		^	[Statement example] [Function]	<Term> ^ <factor> Finds the exclusive logical add (XOR) of <term> and <factor>. (Bit difference operator)
		<<	[Statement example] [Function]	<Term> << <factor> Shifts <term> to the left by <factor>. (Left shift operator)
		>>	[Statement example] [Function]	<Term> >> <factor> Shifts <term> to the right by <factor>. (Right shift operator)
	Substitution	=	[Statement example] [Function]	<Device> = <term> Stores <term> into <device>. (Substitution operator)

Item	Command		Description	
Operator	Device operation	set	[Statement example] [Function]	set(<bit device>) SETs <bit device>.
		rst	[Statement example] [Function]	rst(<bit device>) RSTs <bit device>.
		alt	[Statement example] [Function]	alt(<bit device>) Inverts <bit device>.
	Continuous device operation	bmov	[Statement example] [Function]	bmov(<word device 1>, <word device 2>, <integer>) Batch-transfers the number of devices specified at <integer>, starting from <word device 1>, to the number of devices specified at <integer>, starting from <word device 2>.
		fmov	[Statement example] [Function]	fmov(<word device 1>, <word device 2>, <integer>) Transfers <word device 1> to the number of devices specified at <integer>, starting from <word device 2>.
Function	Application arithmetic operation	sin	[Statement example] [Function]	sin(<word device or constant>) Calculates the sine of the specified <word device or constant>. (Sine) <word device or constant>: To be set in radian units.
		cos	[Statement example] [Function]	cos(<word device or constant>) Calculates the cosine of the specified <word device or constant>. (Cosine) <word device or constant>: To be set in radian units.
		tan	[Statement example] [Function]	tan(<word device or constant>) Calculates the tangent of the specified <word device or constant>. (Tangent) <word device or constant>: To be set in radian units.
		asin	[Statement example] [Function]	asin(<word device or constant>) Calculates the arcsine of <word device or constant>. (Arcsine) <word device or constant>: To be set in radian units.
		acos	[Statement example] [Function]	acos(<word device or constant>) Calculates the arccosine of <word device or constant>. (Arccosine) <word device or constant>: To be set in radian units.
		atan	[Statement example] [Function]	atan(<word device or constant>) Calculates the arctangent of <word device or constant>. (Arctangent) <word device or constant>: To be set in radian units.
		abs	[Statement example] [Function]	abs(<word device or constant>) Calculates the absolute value of <word device or constant>. (Absolute value)
		log	[Statement example] [Function]	log(<word device or constant>) Calculates the logarithm (natural logarithm) of base e <word device or constant>.
		log10	[Statement example] [Function]	log10(<word device or constant>) Calculates the logarithm (common logarithm) of base 10 <word device or constant>. (Common logarithm)
		exp	[Statement example] [Function]	exp(<word device or constant>) Calculates the power of base e <word device or constant>. (Exponent)
		1dexp	[Statement example] [Function]	1dexp(<word device 1 or constant 1>, <word device 2 or constant 2>) Calculates the <word device 2 or constant 2> power of <word device 1 or constant 1>×2. (Exponential product)
		sqrt	[Statement example] [Function]	sqrt(<word device or constant>) Calculates the square root of <word device or constant>. (Square root)
Others	Constant		[Statement example] [Function]	Constant Represents a constant (decimal/hexadecimal/BCD/real number). Refer to Section 7.2.3 for details of constants.
	Device and temporary work		[Statement example] [Function]	[Device type:device number] Represents a PLC CPU device, GOT internal device or temporary device area. Refer to Section 7.2.3 for details of the devices and temporary works.
	Comment	//	[Statement example] [Function]	//(comment) A comment for a script can be described in (comment).

7.2.3 Usable data and representation methods

(1) Script data formats

You can choose any of the following seven different data formats for the script functions.

Note that the data format selected is fixed on a script basis.

- 16-bit, signed BIN
- 16-bit, unsigned BIN
- 32-bit, signed BIN
- 32-bit, unsigned BIN
- 16-bit BCD
- 32-bit BCD
- 32-bit real number

POINT
Select the data format on GT Designer at the time of monitor screen creation. For selective operation details, refer to the GT Designer help.

(2) Usable constants and representation methods

The following four different constants are usable with the script functions.

Constant	Representation Method
Decimal number	124
Hexadecimal number	0xFF12, 0x14AC67F1
Real number	32.124, 3.2124e + 10
BCD	344

Note that the data format of each script determines the usable constants and data ranges as listed below.

Data Format	Usable Constant	Usable Data Range
16-bit, signed BIN	Decimal number	-32768 to 32767
	Hexadecimal number	0 to 7FFF
16-bit, unsigned BIN	Decimal number	0 to 65535
	Hexadecimal number	0 to FFFF
32-bit, signed BIN	Decimal number	-2147483648 to 2147483647
	Hexadecimal number	0 to 7FFFFFFF
32-bit, unsigned BIN	Decimal number	0 to 4294967295
	Hexadecimal number	0 to FFFFFFFF
16-bit BCD	BCD	0 to 9999
	Hexadecimal number	0 to 270F
32-bit BCD	BCD	0 to 99999999
	Hexadecimal number	0 to 5F5E0FF
32-bit real number	Real number	—
	Hexadecimal number	0 to FFFFFFFF

(3) Usable devices and representation methods

The devices available for the script functions are the same as those of the other monitor functions.

The device types and whether the station number is specified or not change how devices will be represented as indicated below.

Device Type	Statement Example	Representation Example
Word device	[w:device number＊2]	[w:D100]
Bit device	[b:device number＊2]	[b:X100]
Specified bit of word device	[b:device number＊2. bit position]	[b:D100.01]
Specified word of bit device	[w:device number＊2]	[w:X100]
Station number-specified device＊1	[Network number-station number:w:device number＊2]	[0-FF:w:D100]

＊1: When the QCPU, QnACPU or ACPU is used, omitting the network number and station number monitors the devices of the own station (0-FF).

＊2: Depending on the PLC CPU device monitored, the device number must be described in the number of digits as indicated below.

PLC CPU Used	Device Name	Number of Digits Described (Digits)		Representation Example	Remarks
		Word specified	Bit specified		
OMRON PLC	..	—	2	[b:..2303]	Because of the channel + relay format, the relay part is described in 2 digits.
	LR, AR, HR, WR	—	2	[b:HR207]	
Allen-Bradley PLC	B	6	7	[w:B000003] [b:MB02343]	The file number is described in 3 digits, the element number in 3 digits, and the bit position in 1 digit.
	N, TP, TA, CP, CA	6	—	[w:N007255]	The file number is described in 3 digits, and the element number in 3 digits.
	TT, TN, CU, CD, CN	—	6	[b:TT004255]	
SIEMENS PLC	D	—	9	[w:D000100000]	The data block (DB) is described in 4 digits, and the data word (DW) in 5 digits.

POINT

Devices that may be monitored on the GOT depend on the monitor destination PLC CPU. Refer to Section 4.8 for details.

(4) Usable temporary device area and representation methods

The 1024 points (TMP0 toTMP1023) are available for the temporary device area.
A variable is treated as 30-bit and stored with "0" at the GOT power ON.
As this variable is a global variable, it can be referred or updated by any script when multiple scripts are created.
The temporary device area representation changes with the specified device type as indicated below.

Device Type	Statement Example	Representation Example
Word device	[w: temporary device area number]	[w:TMP0001]
Bit device	[b: temporary device area number. bit position]	[b:TMP1023.01]

Temporary works are used in the following cases.

Example 1) Prevention of a write delay in substitution processing performed for the PLC CPU (refer to Section 7.1.2)

Example 2) Write destination device of while statement (refer to Section 7.2.2)

Example 3) Variable for operation

When substituting a D0 + 1 value into D1 and substituting a D1 + 1 value into D2

```
[w:TMP0001]=[w:D0]+1;          //substitutes D0+1 into TMP0001.
[w:D1]=[w:TMP0001];            //substitutes TMP0001 into D1.
[w:D2]=[w:TMP0001]+1;          //substitutes TMP0001+1 into D2.
```

POINT

The temporary device area is a 32-bit global variable.
Note that a correct value may not be read in either of the following cases.

- A value is read is read in the script whose data format is different from that of the script used to write the value to the temporary device area.

  (Example) Script A (data format: 16-bit unsigned)
  [w:TMP0000] = 0x1234;
  Script B (data format: 32-bit unsigned)
  [w:GD0000] = [w:TMP0000]

- A value is read is read in the script whose representation (word device/bit device) is different from that of the script used to write the value to the temporary device area.

  (Example) Script C (data format: 16-bit unsigned)
  [w:TMP0000] = 0x3;
  if([b:TMP0000.b0] == ON {• • •

When writing and reading a value to and from one temporary device area, use the same data format and representation.

(5) How to represent bit devices (system define)

Bit devices can be represented as indicated below.

(a) When performing relational operation of bit device

A device value, which is normally represented "1" or "0", may also be represented "ON" or "OFF".

```
if([b:X100]==1){[w:D0]=100;}          //if X100 is ON, D0 is 100.
```

↓

```
if([b:X100]==ON){[w:D0]=100;}         //if X100 is ON, D0 is 100.
```

(b) When performing substitution processing of bit device

A bit device, which is normally represented with a set or rst statement or by substituting "1" or "0", may also be represented by substituting "ON" or "OFF".

```
set([b:X100]);                        //X100 turns ON.
```

```
[b:X100]=1;                           //X100 turns ON.
```

↓

```
[b:X100]=ON;                          //X100 turns ON.
```

(6) How to replace devices and constants (user define)

A device or constant used in a script can be replaced by any character string.
Make user define setting in the script symbol setting of GT Designer.
For details of the setting method, refer to the GT Designer help.

Example: When replacing "X100" with "LS1-ERROR" on GT Designer

```
if(LS1-ERROR==1){[w:D0]=100};        //if X100(LS1-ERROR) is ON, D0 is 100.
```

7.2.4 Script execution

This section explains how to execute the script functions.

(1) Execution conditions

The script function execute a script whose execution condition is enabled and writes the result to the PLC CPU.
There are the following execution conditions.

- Any time
- Bit OFF to ON/ON to OFF
- During bit ON/OFF
- Periodic during bit ON/OFF
- Periodic (1s increments)

POINT
Set the execution condition on GT Designer at the time of monitor screen creation. For details of setting, refer to the GT Designer Help.

(2) Execution unit

The script function executes scripts one by one.
If the execution conditions of multiple scripts are enabled, they are not processed concurrently.

(3) Execution sequence

The script functions are executed in the following order.

Function Type Order	Setting Screen Order	Screen Calling Function Layer Order	Execution Order Set on GT Designer	Max. Execution Count	Execution Sequence
Project script function	—	—	Script A Script B ⋮	256	1) ↓
Screen script function	Base	Base	Script A Script B ⋮	256	2) ↓
		First called screen	Script A Script B ⋮		
		⋮			
		16th called screen	Script A Script B ⋮		
	Superimpose window	Superimpose window	Script A Script B ⋮	256	3) ↓
		First called screen	Script A Script B ⋮		
		⋮			
		16th called screen	Script A Script B ⋮		
	Overlap window 1	Overlap window 1	Script A Script B ⋮	256	4) ↓
		First called screen	Script A Script B ⋮		
		⋮			
		16th called screen	Script A Script B ⋮		
	Overlap window 2	Overlap window 2	Script A Script B ⋮	256	5) ↓
		First called screen	Script A Script B ⋮		
		⋮			
		16th called screen	Script A Script B ⋮		

POINT

Refer to Section 5.10.1 for details of the screen calling function.

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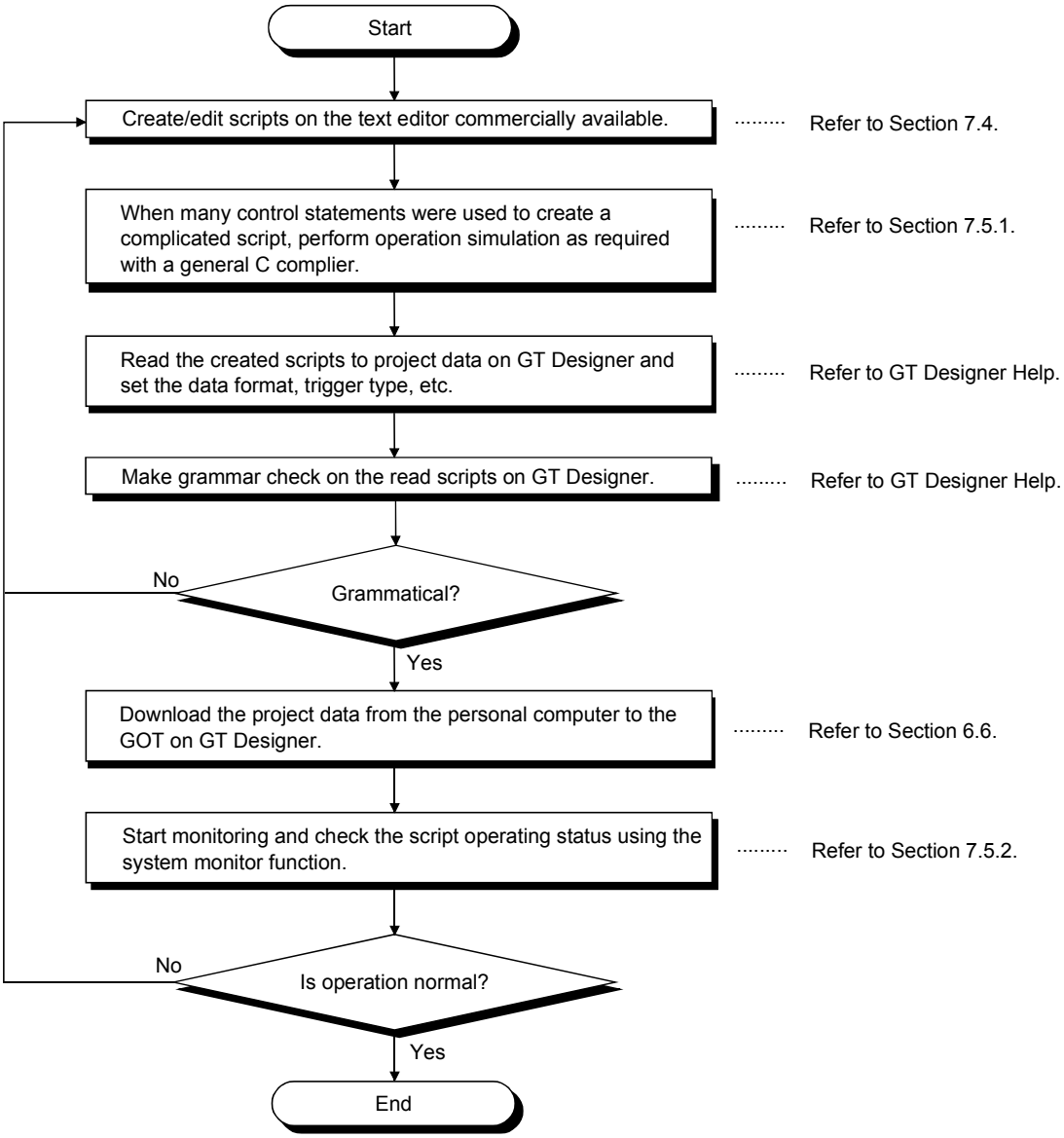
(4) Execution status

The script function performs any of the following processings according to the script status.

Script Status	Processing
Waiting for turn	• A script waits its processing turn in accordance with the execution sequence. • When its turn has come, the script "waits for execution".
Waiting for execution	• Processing changes depending on whether the execution condition is enabled or disabled. Enabled: The corresponding script is "executed". Disabled: The corresponding script "waits its turn" and the next script "waits for execution".
Execution	• When the script ends, the processing result is written to the PLC CPU and the corresponding script "waits its turn". Also, the next script "waits for execution". • If an error occurs, the corresponding script "stops" and the next script "waits for execution". • When a screen change takes place during use of the screen script function, the scripts set on the corresponding screen are all "executed" and the next script then "waits for execution".
Stop	• The script is kept "stopped" until error history clear is performed.

7.3 Settings and Procedure for Execution

This section provides the settings and procedure for executing the script functions.



POINT

The grammar check function diagnoses whether the created scripts are grammatical or not. If a grammatical mistake is found, the corresponding script number, line number and error definition appear. Correct the script.

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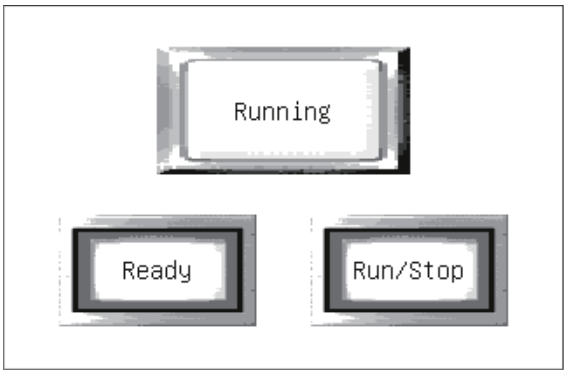
7.4 Program Examples

This section explains script program examples.

7.4.1 Touch keys with interlock function

(1) Operation

When the Ready and Run/Stop keys turn ON, the Running lamp is lit.
The system operation is controlled synchronously with the Running lamp.

Screen Image	Part Operation Definition
	Running lamp : Indicates the operating status of the system. Ready key : Acts as an interlock for the Run/Stop key. Run/Stop key : Used to change the operating status (run/stop) of the system.

(2) Monitor screen settings

Part Name	Object Type	Setting Item	Setting
Ready key	Touch key function (bit)	Monitor device	M0001
		Operation setting	Bit ALT
Run/Stop key	Touch key function (bit)	Monitor device	M0002
		Operation setting	Bit ALT
Running lamp	Lamp indication function (bit)	Monitor device	M0003 (System operation controlling device)

(3) Program example

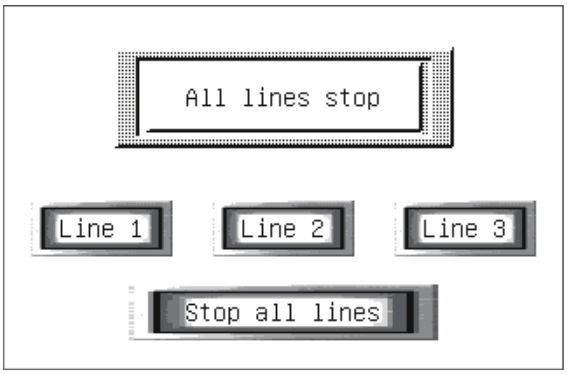
Item	Description
Data format	16-bit, signed BIN
Trigger type	Any time

Script	if ([b:M0001]&[b:M0002]==1) //if the ready and run/stop keys both turn ON
	{
	set([b:M0003]); //the running lamp is lit and the system starts operating.
	}
	else{ //if not
	rst([b:M0003]); //the running lamp is extinguished and the system is stopped.
	}

7.4.2 Lamps which change their indications under multiple conditions

(1) Operation

The operation of each line is controlled with a touch key and the control states of three lines are represented by one lamp.

Screen Image	Part Operation Definition
	Control status lamp : The lamp color and comment are changed according to the operating states of the lines. Line 1 key : Used to control the operation of line 1. Line 2 key : Used to control the operation of line 2. Line 3 key : Used to control the operation of line 3. Stop all lines key : Used to stop all lines.

(2) Monitor screen settings

Part Name	Object Type	Setting Item	Setting
Control status lamp	Lamp indication function (word)	Monitor device	D10
		Indication method (word)	Indication range: $V==0 Lamp color: 182 Characters : All lines stop
			Indication range: $V==1 Lamp color: 3 Characters : Line 1 running
			Indication range: $V==2 Lamp color: 224 Characters : Line 2 running
			Indication range: $V==3 Lamp color: 227 Characters : Line 3 running
			Indication range: $V==4 Lamp color: 28 Characters : Lines 1, 2 running
			Indication range: $V==5 Lamp color: 31 Characters : Lines 1, 3 running
			Indication range: $V==6 Lamp color: 252 Characters : Lines 2, 3 running
			Indication range: $V==7 Lamp color: 162 Characters : Lines 1, 2, 3 running
Line 1 key	Touch key function (bit)	Monitor device	X1
		Operation setting	Bit ALT
Line 2 key	Touch key function (bit)	Monitor device	X2
		Operation setting	Bit ALT
Line 3 key	Touch key function (bit)	Monitor device	X3
		Operation setting	Bit ALT
Stop all lines key	Touch key function (bit)	Monitor device	X0
		Operation setting	Bit SET

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(3) Program example

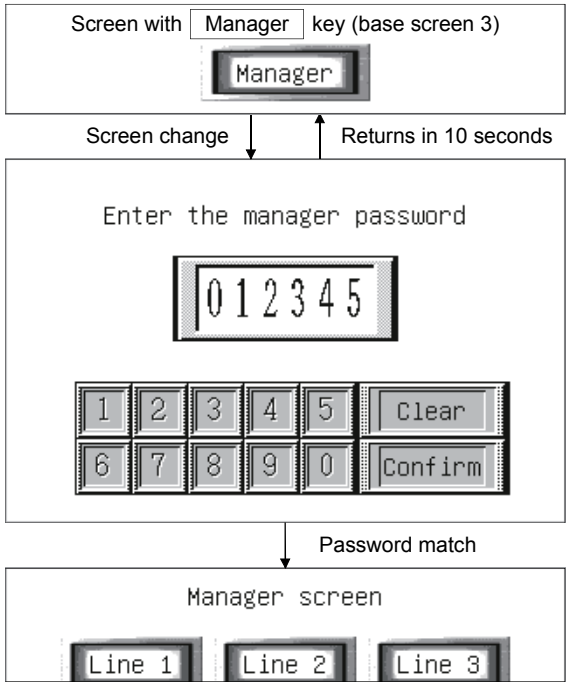
Item	Description
Data format	16-bit, signed BIN
Trigger type	Any time

Script	if(([b:X1]==OFF)&&([b:X2]==OFF)&&([b:X3]==OFF))
	{[w:D10]=0;} //stores 0 into D10 if lines 1, 2 and 3 are all OFF.
	
	if(([b:X1]==ON)&&([b:X2]==OFF)&&([b:X3]==OFF))
	{[w:D10]=1;} //stores 1 into D10 if line 1 is ON and lines 2 and 3 are OFF.
	
	if(([b:X1]==OFF)&&([b:X2]==ON)&&([b:X3]==OFF))
	{[w:D10]=2;} //stores 2 into D10 if line 2 is ON and lines 1 and 3 are OFF.
	
	if(([b:X1]==OFF)&&([b:X2]==OFF)&&([b:X3]==ON))
	{[w:D10]=3;} //stores 3 into D10 if line 3 is ON and lines 1 and 2 are OFF.
	
	if(([b:X1]==ON)&&([b:X2]==ON)&&([b:X3]==OFF))
	{[w:D10]=4;} //stores 4 into D10 if lines 1 and 2 are ON and line 3 is OFF.
	
	if(([b:X1]==ON)&&([b:X2]==OFF)&&([b:X3]==ON))
	{[w:D10]=5;} //stores 5 into D10 if lines 1 and 3 are ON and line 2 is OFF.
	
	if(([b:X1]==OFF)&&([b:X2]==ON)&&([b:X3]==ON))
	{[w:D10]=6;} //stores 6 into D10 if lines 2 and 3 are ON and line 1 is OFF.
	
	if(([b:X1]==ON)&&([b:X2]==ON)&&([b:X3]==ON))
	{[w:D10]=7;} //stores 7 into D10 if lines 1, 2 and 3 are ON.
	
	if ([b:X0]==ON) //if all lines stop turns ON
	{
	rst([b:X1]); //turns OFF line 1.
	rst([b:X2]); //turns OFF line 2.
	rst([b:X3]); //turns OFF line 3.
	rst([b:X0]); //turns OFF all lines stop.
	}

7.4.3 Password input screen with time limit function

(1) Operation

The password input screen returns to the previous screen if a correct password is not entered within 10 seconds after it appeared.

Screen Image	Part Operation Definition
 Manager screen (base screen 5) appears.	Manager button : Used to shift to the password input screen (base screen 4). Password input : Password entered with 1 to 0 keys appears. 1 to 0 keys : Used to enter a value. Clear key : Used to clear the value entered. Confirm key : Used to confirm the value entered.

(2) Monitor screen settings

Part Name	Object Type	Setting Item	Setting
Manager button	Touch key function	Operation setting	Switching to base screen 4
Password input	Numerical input function	Monitor device	D10
1 key	Touch key function	Operation setting	Key code [0031H]
2 key	Touch key function	Operation setting	Key code [0032H]
3 key	Touch key function	Operation setting	Key code [0033H]
4 key	Touch key function	Operation setting	Key code [0034H]
5 key	Touch key function	Operation setting	Key code [0035H]
6 key	Touch key function	Operation setting	Key code [0036H]
7 key	Touch key function	Operation setting	Key code [0037H]
8 key	Touch key function	Operation setting	Key code [0038H]
9 key	Touch key function	Operation setting	Key code [0039H]
0 key	Touch key function	Operation setting	Key code [0030H]
Clear key	Touch key function	Operation setting	Key code [0088H]
Confirm key	Touch key function	Operation setting	Key code [000DH]

(3) Program example

Item	Description
Data format	16-bit, signed BIN
Trigger type	Any time

Script	if([b:GS1.01]==ON){ //only when the password input screen has appeared
	[w:TMP0001]=[w:GS7]; //substitutes GS7 into TMP0001.
	}
	
	if([w:D10]==3238){ //when the correct password is entered
	[w:D0]=5; //switches to the manager screen (base screen 5).
	[w:D10]=0; //clears the password.
	}
	
	if([w:GS7]-[w:TMP0001]>=10){ //if more than 10 seconds have elapsed after the password input screen had appeared
	[w:D0]=3; //returns to the screen with manager button (base screen 3).
	}

POINT

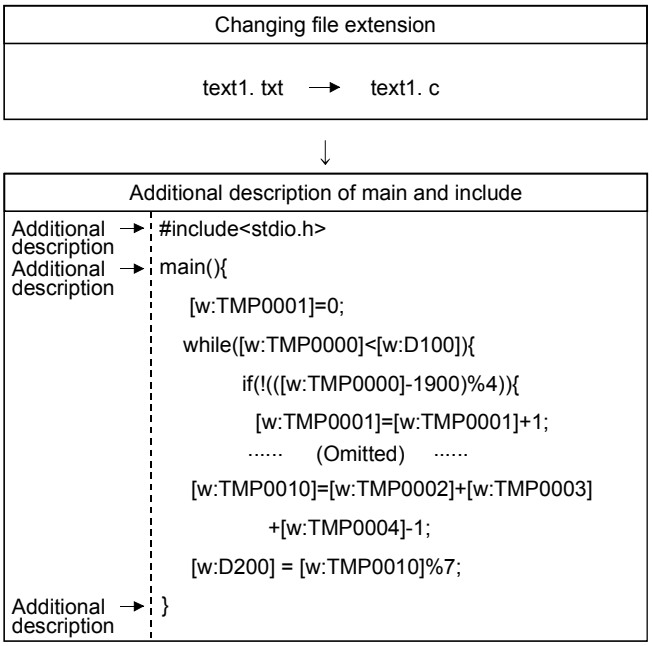
This program example uses GOT special registers (GS).
The GOT special registers (GS) store the GOT's internal information, communication states, script error information and others.
A wide variety of operations can be achieved by making proper connections of the GOT special registers (GS) with the script functions.
Refer to Section 4.5 for details of the GOT special registers (GS).

7.5 Troubleshooting

The script functions do not provide error indications and so on caused by errors.
They stop the script in error to prevent the other scripts and various monitor functions from stopping.
Hence, refer to the following description and debug each script without fail.

7.5.1 Simulation on general C language compiler or debugger

Since a script is like the C language, slight corrections made to it allows simulation on the general C language compiler or debugger (e.g. Microsoft® Visual C++).
This function is effective for debugging a complicated script which uses many control statements.
Use the following procedure to perform simulation on the general C language compiler or debugger.



1) Change the script file (extension ".txt") created for the GOT into a C language source file (extension ".c").

2) Open the C language source file on the commercially available text editor and crate a frame with "main(){}". Also, describe "#include<stdio.h>" at the beginning.

3) Change the device (variable) describing method for script function into that for C language.
When changing the variables for script function into those for C language, changing them in the following definitions enables smooth restoration to the GOT script.

Definition 1 "[w:" → "_w"
Definition 2 "[b:" → "_b"
Definition 3 "]" → "_ _"

Using the batch replacement function of the commercially available text editor will be convenient to make changes.

(To the next page)

(From the preceding page)

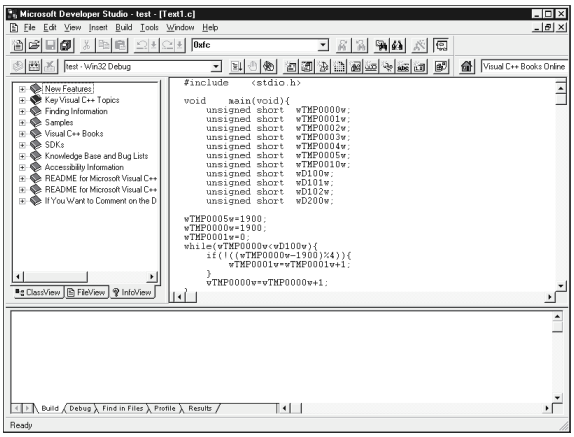
↓

Variable definition (auto variable declaration)

```
Description change →  #include<stdio.h>
                      void main(void){
Addition →              unsigned short  _wTMP0000_ _;
Addition →              unsigned short  _wTMP0001_ _;
Addition →              unsigned short  _wTMP0002_ _;
Addition →              unsigned short  _wD100_ _;
                              ·····     (Omitted)     ·····
                        _wTMP0001_ _=0;
                        while(_wTMP0000_ _<_wD100_ _){
                              if(!((_wTMP0000_ _-1900)%4)){
                                _wTMP0001_ _=_wTMP0001_ _+1;
                              ·····     (Omitted)     ·····
                        _wTMP0010_ _=_wTMP0002_ _+_wTMP0003_ _
                                +_wTMP0004_ _-1;
                        _wD200_ _ = _wTMP0010_ _%7;
                      }
```

↓

Execution of simulation



4) In the C language, the variables used must be defined beforehand.
As only one data format may be selected for one script in the script function, the variable types of the C language must all be the same.
Being conscious of the script data format, assign the variables as indicated below.

Script Data Format	Variable Type
16-bit, signed BIN	short
16-bit, unsigned BIN	unsigned short
32-bit, signed BIN	long
32-bit, unsigned BIN	unsigned long
32-bit real number	float
32-bit BCD/16-bit BCD ＊	—

＊: Selecting "32-bit BCD/16-bit BCD" as the script data format disables simulation on the general C language compiler or debugger.

5) Perform simulation on the general C language compiler or debugger.
(The example shown on the left uses Microsoft® Developer Studio.)
You can utilize the step run, variable watch and other functions available specifically from the debugger.

On completion of debugging, reverse the steps 1) to 4) to restore the GOT script file.

POINT

- Choosing "32-bit BCD/16-bit BCD" as the script data format disables simulation on the general C language compiler or debugger.
- Designed for use with only the script functions, the set, rst, alt, bmov and fmov statements disables simulation on the general C language compiler or debugger. Use substitution of 1 or 0 instead of the set or rst statement.
- When the system define (ON, OFF description) of the GOT is used unchanged, the description of the define must be added to the C language source file.
- A substitution delay which occurs at the time of script execution on the GOT does not occur during simulation on the general C language compiler or debugger. Hence, take the occurrence of a substitution delay into consideration when performing simulation.
- By applying the above, a new program created in C language and then debugged may also be used as a GOT script.

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7.5.2 Errors and corrective actions for script execution on GOT

(1) Error checking method

The error information of the script functions is stored into the GOT special registers (GS).
Check the stored information using the system monitor function and various object functions (numerical display, lamp indication and others) of the GOT.
The GOT special registers (GS) have the following types of script function-related items.

Address	Item Name	Description
GS14	Script common information (read only)	Stores the information which indicates error occurrence. GS14.00: Turns ON at error occurrence. GS14.07: Turns ON at BCD error occurrence. GS14.08: Turns ON at zero division error occurrence. GS14.12: Turns ON at communication error occurrence (including access to out-of-range device).
GS15	Script error pointer	Stores the pointer value (16 to 46) which indicates the address where the script error data (GS16 to 47) is stored. (Default: -1) Every time error data is stored, the pointer value changes as indicated below. "-1" → "16" → "18" → "20" → ····· → "46" → "16" The pointer value denotes the address of the script error data (GS16 to 47) as indicated below. Example 1) When GS15 is 16, error data is stored into GS16, 17. Example 2) When GS15 is 46, error data is stored into GS46, 47.
GS16 to 47	Script error data	Store the script numbers and error codes of the scripts in error in due order, starting from the higher addresses of the storage area. When an error occurs, a script number and error code are stored on a 2-word basis as a history. Note that if 15 or more errors occur, the upper addresses are overwritten in order.
GS48	Script execution pointer	Stores the pointer value (49 to 79) which indicates the address where a script execution number (GS49 to 79) is stored. (Default: -1) Every time an execution number is stored, the pointer value changes as indicated below. "-1" → "49" → "50" → "51" → ····· → "79" → "49" The pointer value denotes the address of the script execution number (GS49 to 79) as indicated below. Example 1) When GS48 is 49, the execution number is stored into GS49. Example 2) When GS48 is 79, the execution number is stored into GS79.
GS49 to 79	Script execution number	Store the script numbers of the scripts executed as a history.
GS384	Script common information (write only)	Turning ON GS384.0 clears the script error data (GS16 to 47).

<table>
<tr><th>Address</th><th>Item Name</th><th>Description</th></tr>
<tr><td>GS385</td><td>Script monitor time</td><td>Set the monitor time of one script in seconds.
If a script does not end the preset time after its start, script processing is stopped. (Error code: 15)
The initial setting of "0" is processed as 10 seconds.
<table>
<tr><th>Setting Example</th><th>Monitor Time</th></tr>
<tr><td>0 (default)</td><td>10 seconds</td></tr>
<tr><td>1</td><td>1 second</td></tr>
<tr><td>10</td><td>10 seconds</td></tr>
<tr><td>11</td><td>11 seconds</td></tr>
</table></td></tr>
<tr><td>GS386</td><td>Screen script initial operation</td><td>Set whether initial operation will be performed or not when any of the following conditions is enabled.
• The screen script function is used.
• The execution condition (trigger type) selected is "Rise/Fall".
• Switching to the screen having scripts takes place.
<table>
<tr><th>Setting Example</th><th>Trigger Type</th><th>Bit Value of Trigger</th><th>Initial Operation</th></tr>
<tr><td rowspan="2">0</td><td>Bit OFF to ON</td><td>ON</td><td rowspan="2">Performed</td></tr>
<tr><td>Bit ON to OFF</td><td>OFF</td></tr>
<tr><td rowspan="2">Other than 0</td><td>Bit OFF to ON</td><td>ON</td><td rowspan="2">Not performed</td></tr>
<tr><td>Bit ON to OFF</td><td>OFF</td></tr>
</table></td></tr>
</table>

POINT

- Refer to Section 4.5 for details of the GOT special registers (GS).
- For details of the system monitor function, refer to the GOT-A900 Series Operating Manual (GT Works Version5/GT Designer Version5 Compatible Extended • Option Functions).

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(2) Error code list

Error Code	Error Definition	Corrective Action
1	Initialization of project script functions failed.	• Reduce the number of monitor device points of scripts. • Reduce the number of project script functions to be executed.
2	Initialization of screen script functions (base) failed.	• Reduce the number of monitor device points of scripts and base screens. • Reduce the number of screen script functions (base) to be executed.
3	Initialization of screen script functions (superimpose window) failed.	• Reduce the number of monitor device points of scripts and superimpose screens. • Reduce the number of screen script functions (superimpose window) to be executed.
4	Initialization of screen script functions (overlap window 1) failed.	• Reduce the number of monitor device points of scripts and overlap window screens 1. • Reduce the number of screen script functions (overlap window 1) to be executed.
5	Initialization of screen script functions (overlap window 2) failed.	• Reduce the number of monitor device points of scripts and overlap window screens 2. • Reduce the number of screen script functions (overlap window 2) to be executed.
6	The operation result is a value outside the usable data range determined by the data format of the script.	• Review the processing for the device which was brought outside the data range of the corresponding script, and correct the script.
7	The number of scripts executed exceeded the limit. Hence, there were scripts that were not executed.	• Change the number of scripts to be executed in one project to 256 or less. • Change the number of scripts to be executed on one screen to 256 or less.
8	When "16-bit BCD" or "32-bit BCD" was selected as the script data format, the monitor device value could not be handled as BCD.	• Check whether the device you want to monitor is correct. • Review the processing for the device which could not be handled as BCD, and correct the script and sequence program.
9	When "16-bit BCD" or "32-bit BCD" was selected as the script data format, the operation result was brought outside the BCD data range.	• Review the processing for the device which was brought outside the BCD data range.
10	The numerator was divided by the denominator of 0.	• Review the factor which caused zero division in the corresponding script, and correct the script.
11	Write to a device failed.	• Review the device description of the corresponding script.
12	Securing an internal area for device write failed.	• Reduce the number write device points in the corresponding script.
13	The while statement has the description of a device other than a temporary work.	• Replace the write device in the while statement with a temporary device area.
14	An expression was too complicated to process.	• Simplify or divide the operation expression in the corresponding script.
15	A script did not end within the script monitor time.	• Check whether the corresponding script has gone into an endless loop. • Increase the value of script monitor time (GS385).

MEMO

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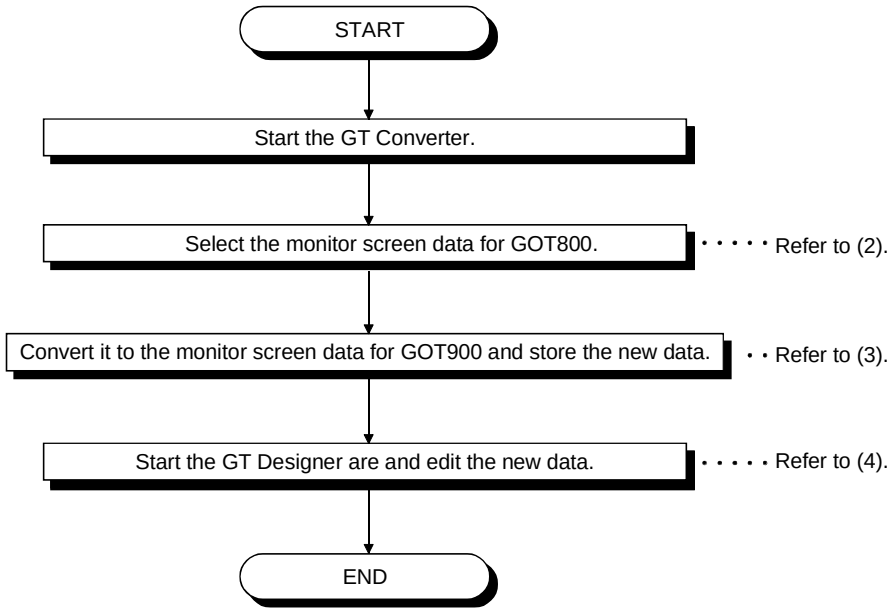
APPENDICES

Appendix1 Operations for Use of the Conventional Model Data

When using the monitor screen data for GOT800 as that for GOT900, the data must be converted using the GT Converter.
This section outlines the operation to be performed to convert the monitor screen data for GOT800.
For details of the GT Converter, refer to the help function of the GT Converter.

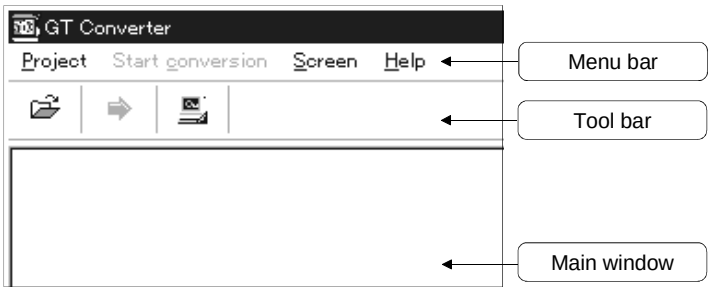
POINT

- By converting the monitor screen data for GOT800 with the GT Converter, it can be used as the monitor screen data for GOT900 without any restrictions.
  Also, the data capacity of the data converted into the monitor screen data for GOT900 is about 30% less than that of the monitor screen data for GOT800.
- When using the GOT data of earlier than the GOT800 as the monitor screen data for GOT900, perform the following operation after converting it into the GOT data for GOT800 series using the drawing software for GOT800 series ∗1 contained in GT Works Version5/GT Designer Version5.
  For the converting operation, refer to the SW3NIW-A8GOTP Drawing Setting Software Package Operating Manual (Monitor Screen Creation Manual).
  ∗1 Install the software by executing "setup.exe"in the "GOT800" folder on the CD-ROM.



APP

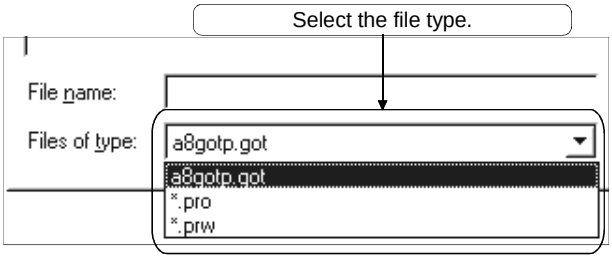
(1) Screen make-up of GT Converter



(2) Selecting the data to be converted

(a) Perform either of the following operations.
- Click the icon on the tool bar.
- Select the [Project] - [Open] menu.

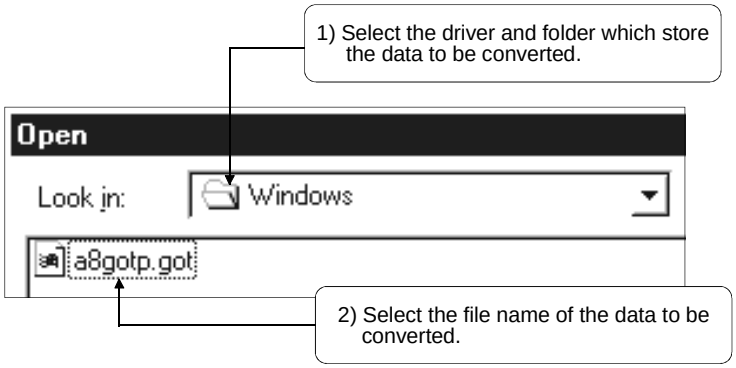
(b) As the [Open] dialog box appears, select the file type.
- A8GOT file: Screen data for GOT800 series
- PRO file: "GP-PRO/PBIII (DOS version)" made by Digital
- PRW file: "GP-PRO/PBIII for Windows 95 (Ver 2.0/Ver 2.1)" made by Digital
  : "GP-PRO/PBIII for Windows (Ver 3.0)" made by Digital



POINT

The data of the Digital package that may be converted is only the data created by "GP-PRO/PBIII (DOS version)", "GP-PRO/PBIII for Windows 95 (Ver 2.0/Ver 2.1)" and "GP-PRO/PBIII for Windows (Ver 3.0)".

(c) Select the data to be converted and click the [Open] button.



…Switches the "Look in" indication to the folder one position above the current one.

…Lists the "Look in" indication in terms of the folder names and data names only.

…Lists further details of the "Look in" indication.

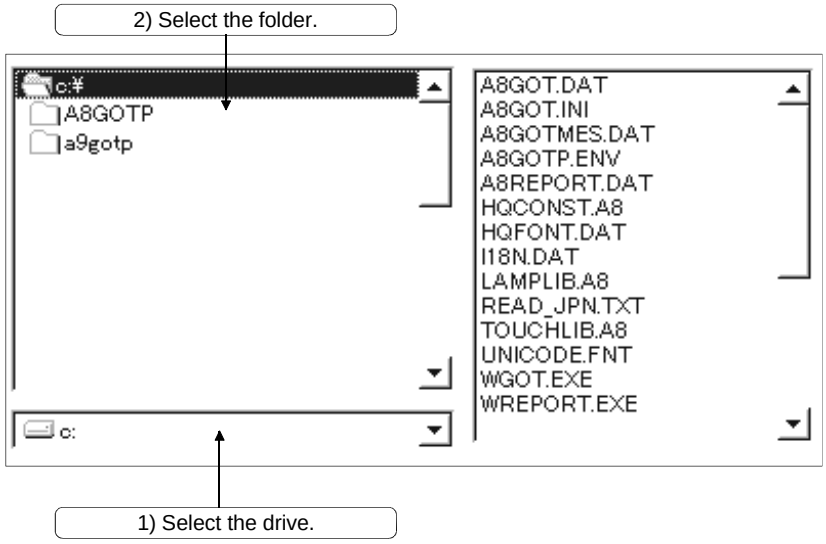
APP

(d) The data selected is specified as a conversion source file and appears in the main window.

(3) Converting to the monitor screen data for GOT900

(a) Perform either of the following operations.
- Click the icon on the tool bar.
- Select the [Start conversion] menu.

(b) In the main window, specify the folder, which will store new data.
Enter the folder directly into "Save folder", or perform the following operation to specify it.



(c) Clicking the [OK] button converts the selected data to GOT900 series data.
On completion of the conversion operation, the conversion completion message appears.
The new data is stored into the specified folder.

POINTS

When the data of the Digital package is converted, some functions are not converted.
Re-set the unconverted functions using the GT Designer.
Also use the GT Designer for registration to the overlap screen, parts and comments

(4) Starting the GT Designer

Start the GT Designer from the GT Converter.

(a) Select the [Project] - [Option] - [Folder of GT Designer] menu.

(b) The [Setting folder of GT Designer] dialog box appears.
Since the execution file (wgot32.exe) of the GT Designer exists in the following folder, select it and click the [Open] button.

Drive name: \ Installation destination folder\ GT desig\ wgot32.exe

 …Switches the "Look in" indication to the folder one position above the current one.

 …Lists the "Look in" indication in terms of the folder names and data names only.

 …Lists further details of the "Look in" indication.

(c) Perform either of the following operations.
- Click the  on the tool bar.
- Select the [Project] - [Execute GT Designer] menu.

(d) The [Execute GT Designer] confirmation dialog box appears.
Click the [Yes] or [No] button.
[Yes] button … Ends the GT Converter and starts the GT Designer.
[No] button … Ends the GT Converter.
(The GT Designer does not start.)

Appendix2 Display Speed of Object (Reference Value)

The display speeds (reference values) of each object are as listed below.
The actual display speeds depend on the number of objects set on a screen, the shape of a figure drawn, and the frequencies of transient transmission.

Object name					Numerical display	ASCII display	Comment displayBit	User alarm	Parts display (Bit)	Lamp display (Bit)	Trend graph display	Line graph display	Level display	Touch key (Bit momentary)
				Drawing condition	6 digits, 16 bit	6 digits	10 characters	――	48×48 dots	48×48 dots	240×120 dots, 8 lines	240×120 dots, 8 lines, 10 points	160×160 dots	――
Display speed (Unit : s)	QnA CPU ACPU	Bus connection	Sequential device		0.1	0.15	0.15	0.1	0.2	0.2	0.15	0.35	0.1	0.15
			Random device		0.1	0.15	0.15	0.1	0.2	0.2	0.15	0.35	0.1	0.15
		CPU direct connection	Sequential device		0.2	0.2	0.25	0.25	0.5	0.25	0.2	0.8	0.2	0.2
			Random device		0.2	0.2	0.35	0.5	0.5	0.3	0.2	0.8	0.2	0.2
		Computer link connection	Sequential device		0.3	0.3	0.3	0.3	0.5	0.3	0.2	0.8	0.2	0.3
			Random device		0.3	0.3	0.4	0.5	0.5	0.4	0.2	0.8	0.2	0.3
		MELSECNET /10 connection	Cyclic	Sequential device	0.1	0.1	0.25	0.2	0.2	0.2	0.15	0.4	0.1	0.15
				Random device	0.1	0.1	0.25	0.2	0.2	0.2	0.15	0.4	0.1	0.15
			Transient	Sequential device	0.5	0.5	0.6	0.5	0.5	0.6	0.5	2.0	0.4	0.4
				Random device	0.5	0.5	0.6	0.5	0.5	0.6	0.5	2.0	0.4	0.4
		CC-Link connection (Remote device station)	Sequential device		0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
			Random device		0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
		CC-Link connection (Intelligent device station)	Cyclic	Sequential device	0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
				Random device	0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
			Transient	Sequential device	0.3	0.3	0.4	0.4	0.3	0.35	0.3	1.0	0.4	0.4
				Random device	0.3	0.3	0.4	0.4	0.3	0.35	0.3	1.0	0.4	0.4
		Ethernet connection	Sequential device		0.2	0.2	0.25	0.25	0.25	0.2	0.2	0.5	0.2	0.3
			Random device		0.2	0.2	0.25	0.5	0.25	0.25	0.2	0.5	0.2	0.4
	QCPU	Bus connection	Sequential device		0.1	0.15	0.15	0.1	0.2	0.2	0.15	0.35	0.1	0.15
			Random device		0.1	0.15	0.15	0.1	0.2	0.2	0.15	0.35	0.1	0.15
		CPU direct connection	Sequential device		0.2	0.2	0.25	0.25	0.5	0.25	0.2	0.7	0.2	0.2
			Random device		0.2	0.2	0.35	0.5	0.5	0.3	0.2	0.7	0.2	0.2
		Computer link connection	Sequential device		0.3	0.3	0.3	0.3	0.5	0.3	0.2	0.7	0.2	0.3
			Random device		0.3	0.3	0.4	0.5	0.5	0.4	0.2	0.7	0.2	0.3
		MELSECNET /10 connection	Cyclic	Sequential device	0.1	0.1	0.25	0.2	0.2	0.2	0.15	0.4	0.1	0.15
				Random device	0.1	0.1	0.25	0.2	0.2	0.2	0.15	0.4	0.1	0.15
			Transient	Sequential device	0.5	0.5	0.6	0.5	0.5	0.6	0.5	2.0	0.4	0.4
				Random device	0.5	0.5	0.6	0.5	0.5	0.6	0.5	2.0	0.4	0.4
		CC-Link connection (Remote device station)	Sequential device		0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
			Random device		0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25

Object name					Numerical display	ASCII display	Comment displayBit	User alarm	Parts display (Bit)	Lamp display (Bit)	Trend graph display	Line graph display	Level display	Touch key (Bit momentary)
				Drawing condition	6 digits, 16 bit	6 digits	10 characters	――	48×48 dots	48×48 dots	240×120 dots, 8 lines	240×120 dots, 8 lines, 10 points	160×160 dots	――
Display speed (Unit : s)	QCPU	CC-Link connection (Intelligent device station)	Cyclic	Sequential device	0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
				Random device	0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
			Transient	Sequential device	0.3	0.3	0.4	0.4	0.3	0.35	0.3	1.0	0.4	0.4
				Random device	0.3	0.3	0.4	0.4	0.3	0.35	0.3	1.0	0.4	0.4
		Ethernet connection	Sequential device		0.2	0.2	0.25	0.25	0.25	0.2	0.2	0.5	0.2	0.3
			Random device		0.2	0.2	0.25	0.5	0.25	0.2	0.2	0.5	0.2	0.4
	FXCPU	CPU direct connection	Sequential device		0.3	0.3	0.5	0.5	1.0	0.4	0.5	1.0	0.5	0.5
			Random device		0.3	0.3	0.5	0.5	1.0	0.4	0.5	1.20	0.22	1.06
	Programmable controller by Omron		Sequential device		0.20	0.20	0.20	0.50	0.30	0.30	0.25	0.60	0.26	0.35
			Random device		0.20	0.20	0.20	0.50	0.36	0.30	0.30	0.80	0.27	0.35
	Programmable controller by Yasukawa		Sequential device		0.21	0.30	0.35	0.70	0.35	0.35	0.27	0.8	0.2	0.3
			Random device		1.09	0.68	2.34	10.40	2.42	2.20	0.53	5.72	0.46	2.50
	Programmable controller by Allen-Bradley		Sequential device		0.3	0.3	0.5	0.5	0.4	0.4	0.5	1.0	0.5	0.5
	Programmable controller by SHARP		Sequential device		0.3	0.5	0.6	0.5	0.7	0.5	0.5	1.0	0.5	0.5
	Programmable controller by Toshiba		Sequential device		0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.9	0.4	0.4
	Programmable controller by SIEMENS		Sequential device		0.3	0.3	0.4	0.7	0.4	0.4	0.5	1.2	0.3	0.4
	Programmable controller by Hitachi		Sequential device		0.3	0.3	0.3	0.5	0.4	0.4	0.3	0.8	0.3	0.3
	Matsushita Electric Works		Sequential device		0.3	0.3	0.3	0.8	0.4	0.4	0.4	0.8	0.3	0.3

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Appendix3 List of Key Code

(1) List of key code for numerical and ASCII input

Key	Key code (H)	Key	Key code (H)	Key	Key code (H)	Key	Key code (H)
SP	0020	@	0040	`	0060	→	0080＊2
!	0021	A	0041	a	0061	←	0081＊2
"	0022	B	0042	b	0062	↑	0082
#	0023	C	0043	c	0063	↓	0083
$	0024	D	0044	d	0064	(Clear)	0088
%	0025	E	0045	e	0065		
&	0026	F	0046	f	0066		
'	0027	G	0047	g	0067		
(	0028	H	0048	h	0068		
)	0029	I	0049	i	0069		
*	002A	J	004A	j	006A		
+	002B	K	004B	k	006B		
,	002C	L	004C	l	006C		
-	002D	M	004D	m	006D		
.	002E＊1	N	004E	n	006E		
/	002F	O	004F	o	006F		
0	0030	P	0050	p	0070		
1	0031	Q	0051	q	0071		
2	0032	R	0052	r	0072		
3	0033	S	0053	s	0073		
4	0034	T	0054	t	0074		
5	0035	U	0055	u	0075		
6	0036	V	0056	v	0076		
7	0037	W	0057	w	0077		
8	0038	X	0058	x	0078		
9	0039	Y	0059	y	0079		
:	003A	Z	005A	z	007A		
;	003B	[	005B	{	007B		
<	003C	\	005C	|	007C		
=	003D	]	005D	}	007D		
>	003E	^	005E	~	007E		
?	003F	_	005F	¦	007F		

＊1: Cannot be set only when the numerical input function is used on the GOT-F900 series.
＊2: Cannot be set when the GOT-F900 series is used.

(2) List of key code for objects

(a) Key code for numerical input

Key code (H)	Application
0008 *	Delete the bottom digit and shift to the right by one digit
000D	Write to the destination device (Execute)/Move cursor
001B *	Delete cursor
002D	" -"
002E *	" ."
0030 to 0046	Input value
0080 *	Move cursor to the right
0081 *	Move cursor to the left
0082	Move cursor upward
0083	Move cursor downward
0088	Delete value being input

* Cannot be set when the GOT-F900 series is used.

(b) Key code for ASCII input

Key code (H)	Application
0008 *	Erases the rightmost character and shifts the whole one character to the right.
000D	Write to the destination device (Execute)/Move cursor
001B *	Delete cursor
ASCII code	Input characters
0080 *	Move cursor to the right
0081 *	Move cursor to the left
0082	Move cursor upward
0083	Move cursor downward
0088	Delete value being input

* Cannot be set when the GOT-F900 series is used.

(c) Key code for data list display function

Key code (H)	Application
00F2 *	Scroll up by one line
00F3 *	Scroll down by one line

* Cannot be set when the GOT-F900 series is used.

(d) Key code for alarm list display function

Key code (H)	Application
00F2＊	Scroll up by one line
00F3＊	Scroll down by one line
FFB0	Show cursor
FFB1	Hide cursor
FFB2	Move cursor upward
FFB3	Move cursor downward
FFB8	Display detail information
FFBC＊	Display ladder

＊ Cannot be set when the GOT-F900 series is used.

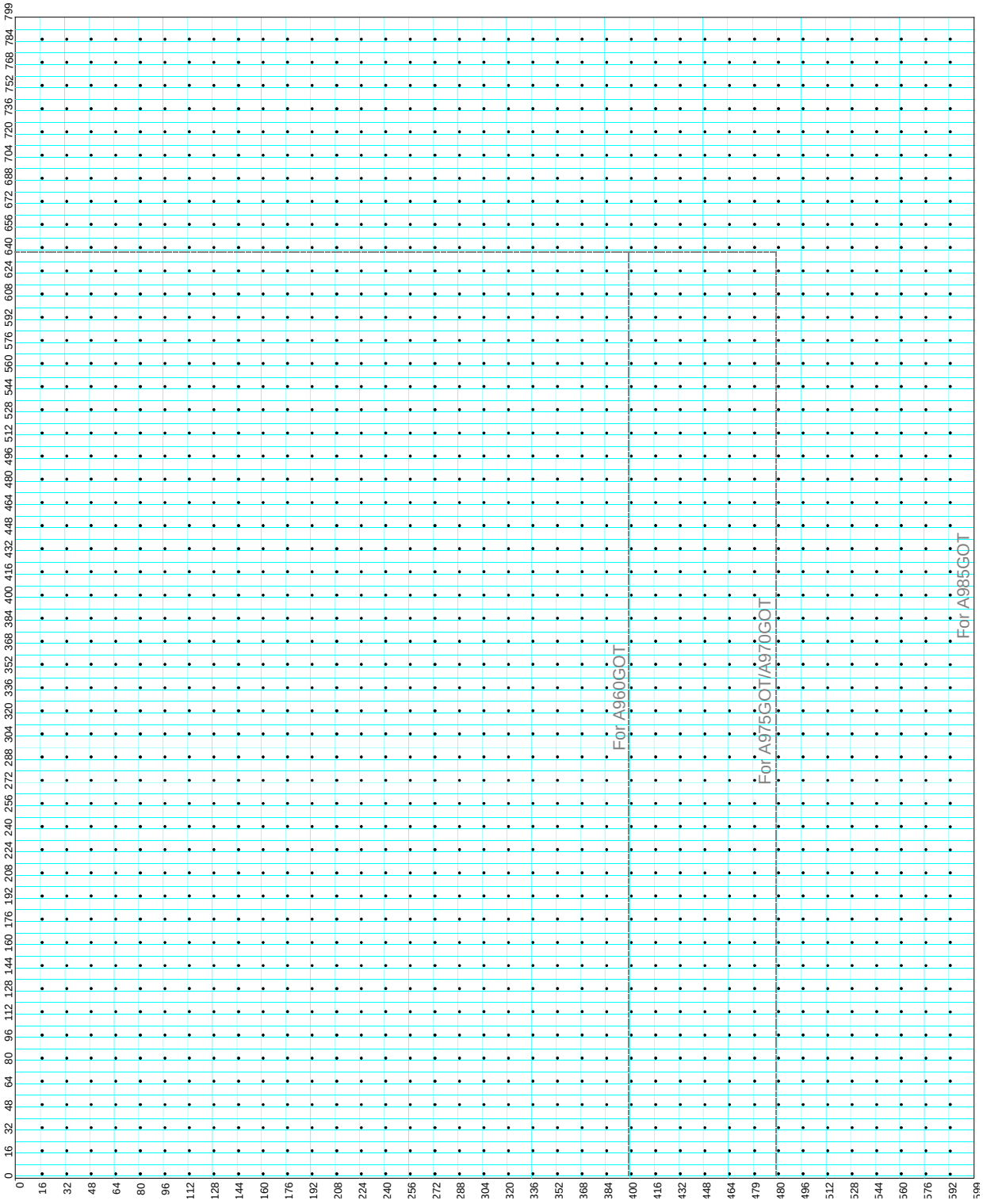
(e) Key code for alarm history function

Key code (H)	Application
FFB0	Show cursor
FFB1	Hide cursor
FFB2	Move cursor upward
FFB3	Move cursor downward
FFB4＊	Display date/time of selected data
FFB5＊	Display date/time of all data
FFB6	Delete selected alarm contents on display
FFB7	Delete all alarm contents on display
FFB8	Display detail information
FFB9＊	Reset designated device
FFBB	When using GOT-A900 series: Save alarm contents to PC card When using GOT-F900 series: Reset designated device
FFBC＊	Display ladder

＊ Cannot be set when the GOT-F900 series is used
FFB6 and FFB7 are compatible with the OS version 3.0 and later of the GOT-F900 series.

Appendix4 Drawing Sheet

(1) For A985GOT/A975GOT/A970GOT/A960GOT



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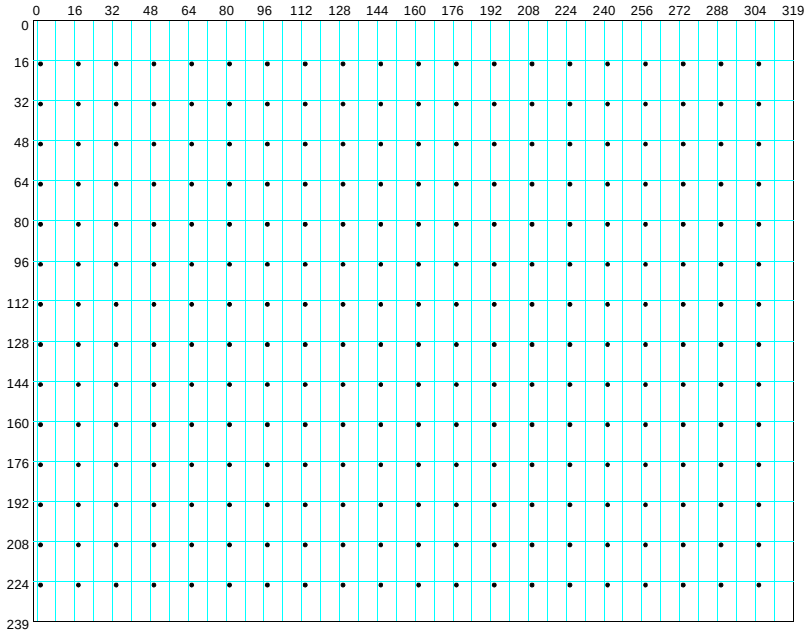
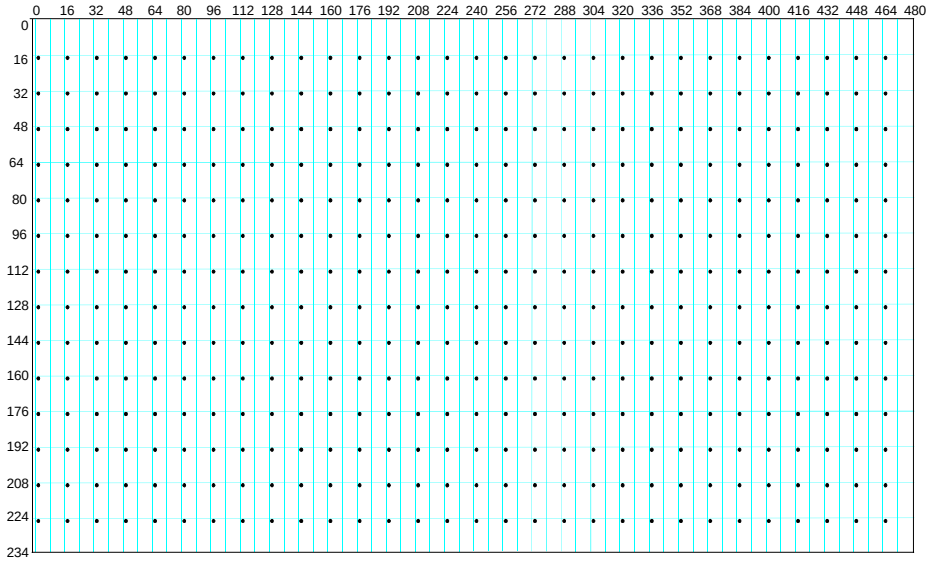
(2) For A95*GOT



(3) For A956WGOT



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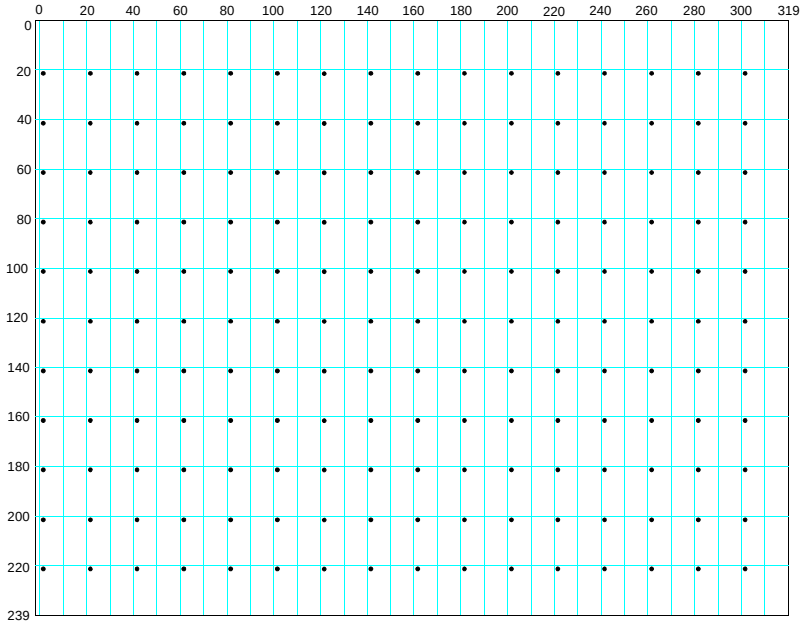
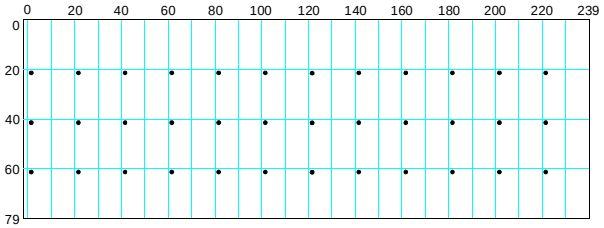
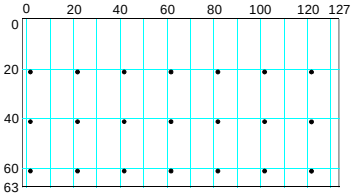
(4) For F940GOT



(5) For F930GOT



(6) For F920GOT



∗There are no touch keys.

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Appendix5 Printing Time of Hard Copy Function (Reference Value)

During printing, it is recommended that a monitor screen with fewer object functions is displayed.
When a screen with object functions (e.g. value display function) showing many variations is displayed on the GOT, the GOT gives priority to display of object functions. Therefore, the printouts take longer.
The following table shows the print out time (reference value) using the hard copy function while the monitor screen with value display function for 50 points is displayed.

GOT main unit	Connection	Type of printer to be used ✻1		
		Printer applicable for ESC/P command (16 colors)	Printer applicable for ESC/P command (black and white)	Printer applicable for PCL command
A985GOT	CPU direct connection	1sec.40min.	40.9min.	31.3min.
	Bus connection	1sec.39min.	40.9min.	30.9min.
	Computer link	1sec.39min.	39.1min.	30.6min.
	MELSECNET connection (data link system)	1sec.42min.	42.4min.	32.2min.
	MELSECNET connection (network system)	1sec.37min.	40.1min.	33.5min.
A975GOT	CPU direct connection	1sec.08min.	33.4min.	27.9min.
	Bus connection	1sec.09min.	31.0min.	27.0min.
	Computer link	1sec.07min.	33.4min.	26.7min.
	MELSECNET connection (data link system)	1sec.09min.	31.1min.	28.2min.
	MELSECNET connection (network system)	1sec.09min.	31.5min.	28.0min.
A970GOT	CPU direct connection	1sec.10min.	32.3min.	27.1min.
	Bus connection	1sec.08min.	30.4min.	28.1min.
	Computer link	1sec.07min.	33.1min.	26.8min.
	MELSECNET connection (data link system)	1sec.08min.	30.4min.	28.1min.
	MELSECNET connection (network system)	1sec.08min.	33.5min.	28.0min.
A95✻GOT-SBA/SBD	CPU direct connection	30.5min.	20.3min.	22.9min.
	Bus connection	30.3min.	21.2min.	23.0min.
	Computer link	30.7min.	21.5min.	22.8min.
	MELSECNET connection (data link system)	31.5min.	19.5min.	22.5min.
	MELSECNET connection (network system)	33.6min.	19.3min.	23.0min.
A95✻GOT-LBA/LBD	CPU direct connection	19.3min.	20.6min.	23.7min.
	Bus connection	20.9min.	20.9min.	23.2min.
	Computer link	19.1min.	20.2min.	23.1min.
	MELSECNET connection (data link system)	22.1min.	21.9min.	22.6min.
	MELSECNET connection (network system)	21.6min.	19.8min.	23.0min.
A956WGOT	CPU direct connection	37.2min.	22.8min.	22.7min.
	Bus connection	36.0min.	23.1min.	22.5min.
	Computer link	36.9min.	23.1min.	22.8min.
	MELSECNET connection (data link system)	35.7min.	23.1min.	23.1min.
	MELSECNET connection (network system)	36.7min.	23.1min.	22.5min.

*1 Either of the following printers was used to measure printing time.

- ESC/P command-ready printer: Canon BJC-600J
- PCL command-ready printer: HEWLETT PACKARD Laser Jet6L

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Appendix6 Relationships between Extended Functions OS Installation and User Area (Memory Map)

The GOT's internal memory has 1152k bytes of space for the user area (area where screen data can be stored).
When the expanded or option functions are used in the GOT, the corresponding extended functions OSs must be installed in the GOT.
Since the extended functions OSs are stored in the user area, the free space of the user area changes with the number of OSs installed as indicated below.

Number of Extended functions OSs ＊1	Memory Space Used [k bytes]	User Area Free Space [k bytes] ＊2
0	0	1152
1	256	896
2	384	768
3	640	512
4	768	384
5	1024	128
6	1152	0

＊1 The MELSEC-QnA ladder monitor function, MELSEC-Q ladder monitor function, MELSEC-A list editor function, Gateway function and Servo amplifier monitor function are handled as two extended functions OSs, respectively.

＊2 The above user area spaces assume that there are no additional memory boards. Therefore, increase the memory as required.
Since the A95＊GOT-＊BD-M3 has the built-in memory of 3200k bytes, the free space is the above value plus 2048k bytes.

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Appendix7 Synthesized Colors Available for XOR

The following table indicates the colors and color numbers available when colors are XORed in the drawing mode using the parts display function or like.

(1) GOT having 256 display colors

When XORing any colors other than the following, check them in the preview of GT Designer.

	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Dark black 109
Black 0	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Dark black 109
Blue 3	Blue 3	Black 0	Purple 227	Red 224	Cyan 31	Green 28	White 255	Yellow 252	— 1	— 163	— 161	— 23	— 21	— 183	— 181	— 110
Red 224	Red 224	Purple 227	Black 0	Blue 3	Yellow 252	White 255	Green 28	Cyan 31	— 226	— 64	— 66	— 244	— 246	— 84	— 86	— 141
Purple 227	Purple 227	Red 224	Blue 3	Black 0	White 255	Yellow 252	Cyan 31	Green 28	— 225	— 67	— 65	— 247	— 245	— 87	— 85	— 142
Green 28	Green 28	Cyan 31	Yellow 252	White 255	Black 0	Blue 3	Red 224	Purple 227	— 30	— 188	— 190	— 8	— 10	— 168	— 170	— 113
Cyan 31	Cyan 31	Green 28	White 255	Yellow 252	Blue 3	Black 0	Purple 227	Red 224	— 29	— 191	— 189	— 11	— 7	— 171	— 169	— 114
Yellow 252	Yellow 252	White 255	Green 28	Cyan 31	Red 224	Purple 227	Black 0	Blue 3	— 254	— 92	— 94	— 232	— 234	— 72	— 74	— 145
White 255	White 255	Yellow 252	Cyan 31	Green 28	Purple 227	Red 224	Blue 3	Black 0	— 253	— 95	— 93	— 235	— 233	— 75	— 73	— 146
Dark blue 2	Dark blue 2	— 1	— 226	— 225	— 30	— 29	— 254	— 253	Black 0	Dark purple 162	Dark red 160	Dark cyan 22	Dark green 20	Dark white 182	Dark yellow 180	— 111
Dark red 160	Dark red 160	— 163	— 64	— 67	— 188	— 191	— 92	— 95	Dark purple 162	Black 0	Dark blue 2	Dark yellow 180	Dark white 182	Dark green 20	Dark cyan 22	— 205
Dark purple 162	Dark purple 162	— 161	— 66	— 65	— 190	— 189	— 94	— 93	Dark red 160	Dark blue 2	Black 0	Dark white 182	Dark yellow 180	Dark cyan 22	Dark green 20	— 207
Dark green 20	Dark green 20	— 23	— 244	— 247	— 8	— 11	— 232	— 235	Dark cyan 22	Dark yellow 180	Dark white 182	Black 0	Dark blue 2	Dark red 160	Dark purple 162	— 121
Dark cyan 22	Dark cyan 22	— 21	— 246	— 245	— 10	— 7	— 234	— 233	Dark green 20	Dark white 182	Dark yellow 180	Dark blue 2	Black 0	Dark purple 162	Dark red 160	— 123
Dark yellow 180	Dark yellow 180	— 183	— 84	— 87	— 168	— 171	— 72	— 75	Dark white 182	Dark green 20	Dark cyan 22	Dark red 160	Dark purple 162	Black 0	Dark blue 2	— 217
Dark white 182	Dark white 182	— 181	— 86	— 85	— 170	— 169	— 74	— 73	Dark yellow 180	Dark cyan 22	Dark green 20	Dark purple 162	Dark red 160	Dark blue 2	Black 0	— 219
Dark black 109	Dark black 109	— 110	— 141	— 142	— 113	— 114	— 145	— 146	— 111	— 205	— 207	— 121	— 123	— 217	— 219	Black 0

(2) GOT having 16 display colors

	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Dark black 109
Black 0	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Dark black 109
Blue 3	Blue 3	Black 0	Dark purple 162	Dark red 160	Dark cyan 22	Dark green 20	Dark white 182	Dark yellow 180	Dark black 109	Purple 227	Red 224	Cyan 31	Green 28	White 255	Yellow 252	Dark blue 2
Red 224	Red 224	Dark purple 162	Black 0	Dark blue 2	Dark yellow 180	Dark white 182	Dark green 20	Dark cyan 22	Purple 227	Dark black 109	Blue 3	Yellow 252	White 255	Green 28	Cyan 31	Dark red 160
Purple 227	Purple 227	Dark red 160	Dark blue 2	Black 0	Dark white 182	Dark yellow 180	Dark cyan 22	Dark green 20	Red 224	Blue 3	Dark black 109	White 255	Yellow 252	Cyan 31	Green 28	Dark purple 162
Green 28	Green 28	Dark cyan 22	Dark yellow 180	Dark white 182	Black 0	Dark blue 2	Dark red 160	Dark purple 162	Cyan 31	Yellow 252	White 255	Dark black 109	Blue 3	Red 224	Purple 227	Dark green 20
Cyan 31	Cyan 31	Dark green 20	Dark white 182	Dark yellow 180	Dark blue 2	Black 0	Dark purple 162	Dark red 160	Green 28	White 255	Yellow 252	Blue 3	Dark black 109	Purple 227	Red 224	Dark cyan 22
Yellow 252	Yellow 252	Dark white 182	Dark green 20	Dark cyan 22	Dark red 160	Dark purple 162	Black 0	Dark blue 2	White 255	Green 28	Cyan 31	Red 224	Purple 227	Dark black 109	Blue 3	Dark yellow 180
White 255	White 255	Dark yellow 180	Dark cyan 22	Dark green 20	Dark purple 162	Dark red 160	Dark blue 2	Black 0	Yellow 252	Cyan 31	Green 28	Purple 227	Red 224	Blue 3	Dark black 109	Dark white 182
Dark blue 2	Dark blue 2	Dark black 109	Purple 227	Red 224	Cyan 31	Green 28	White 255	Yellow 252	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Blue 3
Dark red 160	Dark red 160	Purple 227	Dark black 109	Blue 3	Yellow 252	White 255	Green 28	Cyan 31	Dark purple 162	Black 0	Dark blue 2	Dark yellow 180	Dark white 182	Dark green 20	Dark cyan 22	Red 224
Dark purple 162	Dark purple 162	Red 224	Blue 3	Dark black 109	White 255	Yellow 252	Cyan 31	Green 28	Dark red 160	Dark blue 2	Black 0	Dark white 182	Dark yellow 180	Dark cyan 22	Dark green 20	Purple 227
Dark green 20	Dark green 20	Cyan 31	Yellow 252	White 255	Dark black 109	Blue 3	Red 224	Purple 227	Dark cyan 22	Dark yellow 180	Dark white 182	Black 0	Dark blue 2	Dark red 160	Dark purple 162	Green 28
Dark cyan 22	Dark cyan 22	Green 28	White 255	Yellow 252	Blue 3	Dark black 109	Purple 227	Red 224	Dark green 20	Dark white 182	Dark yellow 180	Dark blue 2	Black 0	Dark purple 162	Dark red 160	Cyan 31
Dark yellow 180	Dark yellow 180	White 255	Green 28	Cyan 31	Red 224	Purple 227	Dark black 109	Blue 3	Dark white 182	Dark green 20	Dark cyan 22	Dark red 160	Dark purple 162	Black 0	Dark blue 2	Yellow 252
Dark white 182	Dark white 182	Yellow 252	Cyan 31	Green 28	Purple 227	Red 224	Blue 3	Dark black 109	Dark yellow 180	Dark cyan 22	Dark green 20	Dark purple 162	Dark red 160	Dark blue 2	Black 0	White 255
Dark black 109	Dark black 109	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Black 0

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(3) GOT having 8 display colors

	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255
Black 0	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255
Blue 3	Blue 3	Black 0	Purple 227	Red 224	Cyan 31	Green 28	White 255	Yellow 252
Red 224	Red 224	Purple 227	Black 0	Blue 3	Yellow 252	White 255	Green 28	Cyan 31
Purple 227	Purple 227	Red 224	Blue 3	Black 0	White 255	Yellow 252	Cyan 31	Green 28
Green 28	Green 28	Cyan 31	Yellow 252	White 255	Black 0	Blue 3	Red 224	Purple 227
Cyan 31	Cyan 31	Green 28	White 255	Yellow 252	Blue 3	Black 0	Purple 227	Red 224
Yellow 252	Yellow 252	White 255	Green 28	Cyan 31	Red 224	Purple 227	Black 0	Blue 3
White 255	White 255	Yellow 252	Cyan 31	Green 28	Purple 227	Red 224	Blue 3	Black 0

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Appendix8 List of Functions Added by Version Update of GT Works Version5 / GT Designer Version5

The following tables indicate the functions added to up to version 33K of GT Works Version5/GT Designer Version5.
The symbols in each table have the following meanings.

SW#	Abbreviation for GT Works Version □ • GT Designer Version □	●	Allowed for use	△	Allowed for use on the GOT-F900 series only
A to Z	Abbreviation for GT Works Version □ • GT Designer Version □ version name	○	Allowed for use on the GOT-A900 series only	×	Not allowed for use

(1) GOT added

Corresponding Model	SW1							SW2		SW3		SW4		SW5									
	A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
A985GOT	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
F940GOT	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
F930GOT(F930GOT-BWD)	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
A95＊GOT	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
A970GOT-LBA/LBD	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
A951GOT-Q	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●
A95＊GOT-TBD	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●
A950 handy GOT	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●
A985GOT-V	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●
F940GOT-RH	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●
A956WGOT	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●
GT SoftGOT	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●
F940WGOT	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●
F920GOT, F930GOT (F930GOT-BWD-K-E)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●

(2) GOT unit functions added (extended, option and other functions)

GOT Unit Function	Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Utility	Addition of brightness adjustment function	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of OS copy function	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
PC card	Supporting of Fsh PC cards	×	×	×	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1
Extension of monitoring device range	Extension of monitoring device range when the microcomputer is connected	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of SB and SW to monitor devices when the ACPU is connected	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of SS, SC, S, SB, SN and SW to monitor devices when the QnACPU is connected	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Addition of TS and CS to monitor devices when the ACPU/FXCPU is connected	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△
Used device	Addition of the GOT special register (GS) to the GOT's internal devices	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○
	The GOT internal devices (GD, GB) have been increased from 1023 to 16383	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
	"CC-Link G4 station number", "base screen information", "gateway common control", "gateway information, common information 1" and "GT SoftGOT common information" have been added to the GOT special registers (GS)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Ladder monitor	Supports the monitoring of QnACPU	×	×	×	×	×	×	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1
	Supports the monitoring of QCPU	×	×	×	×	×	×	×	×	×	×	×	×	×	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1
	Supports monitoring of QCPU on A956WGOT	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1
	Supports multi PLC system and Q00J/Q00/Q01CPU as the monitor targets of the QCPU	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○＊1	○＊1	○＊1	○＊1	○＊1	○＊1

GOT Unit Function	Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Ladder monitor	Addition of the factor search/touch search function to Q ladder monitor	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Special module monitor	Supports the monitoring of QCPU modules	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Supports multi PLC system and Q00J/Q00/Q01CPU as the monitor targets of the QCPU	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
	Supports the monitoring of QD75M	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Network monitor	Supports the monitoring of QCPU	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
List editor	Addition of the function which displays/edits in the list mode the sequence program read from the ACPU	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Base screen	The maximum number of screens increased from 1024 to 4096	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
System monitor	Supports multi PLC system and Q00J/Q00/Q01CPU as the monitor targets of the QCPU	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
	Supports the monitoring Motion Controller CPU (expect Q172CPU, Q173CPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○
Motion monitor	Addition of the function that performs the servo monitor/parameter setting of the motion controller CPU (Q172CPU, Q173CPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○
Servo amplifier monitor	Addition of the function that performs various monitor functions, parameter setting changes, test operation, etc. for the connected servo amplifiers	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Gateway functions	Addition of the function that can monitor each controller with one GOT/personal computer	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○ ＊2	○ ＊2
	Addition of the function that can access the PC card of the GOT from the personal computer	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○ ＊2	○ ＊2
	Addition of the function that sends mail from the GOT to the personal computer/cellular phone at alarm occurrence	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○ ＊2	○ ＊2

＊1 Unusable with the A95＊GOT

＊2 Use the Ethernet communication module (A9GT-J71E71-T) whose hardware version is E or later.

(3) Connection forms added

Connection Form	SW1							SW2		SW3		SW4		SW5									
	A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Bus connection to CPU	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Connection with QCPU supported	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Connection with multiple PLC system	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	●	●	●	●	●	●
Supports connection with MELSEC-Q series Q00J/Q00/Q01CPU	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
Supports connection with the process CPU (Q12PHCPU, Q25PHCPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○
Connection with Motion controller CPU (Q172CPU, Q173CPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○
Direct connection to CPU	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Connection with QnACPU supported	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Connection with QCPU supported	×	×	×	×	×	×	×	×	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●
Connection with multiple PLC system	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	●	●	●	●	●
Supports connection with MELSEC-Q series Q00J/Q00/Q01CPU	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○
Supports connection with the process CPU (Q12PHCPU, Q25PHCPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Transparent function supported	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
Connection with FXCPU (FX(2N)-10GM/20GM series) supported	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△
Supports connection with the FX-1NC	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Connection with Motion controller CPU (Q172CPU, Q173CPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○

Connection Form	SW1							SW2		SW3		SW4		SW5									
	A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Computer link connection	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Connection with QCPU supported	×	×	×	×	×	×	×	×	○	○ *1	○ *1	○ *1	● *1	● *1	● *1	● *1	● *1	● *1	● *1	● *1	● *1	● *1	● *1	● *1
Connection with multiple PLC system	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	●	●	●	●	●	
Supports connection with MELSEC-Q series Q00J/Q00/Q01CPU	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○		
Supports connection with the process CPU (Q12PHCPU, Q25PHCPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○		
Transmission speed change (19200bps/38400bps) supported for connection of QC24N	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○		
Supports connection with the motion controller CPU (Q172CPU, Q173CPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○		
CC-Link connection	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Q-compatible intelligent device station supported	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○		
Connection with multiple PLC system	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	●	●	●	●		
Supports connection with MELSEC-Q series Q00J/Q00/Q01CPU	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○		
Supports connection with the process CPU (Q12PHCPU, Q25PHCPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○		
Supports CC-Link master/local connection via G4-S3	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○		
Supports connection with the motion controller CPU (Q172CPU, Q173CPU) (With the exception of connection with the intelligent device station)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○		
Omron PLC connection	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Connection with C200H/HS/HX/HG/HE, CQM1, C1000H, C2000H, CV1000 supported	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Connection with CV500, CV2000, CVM1-CPU01/11/21 supported	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○		
Connection with CS1 supported	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	●	●	●	●	●	●	●		
Supports connection with C200H α	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○		
Supports connection with the CJ1	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○		
Yaskawa Electric PLC connection	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●		
Connection with GL60S/60H/70H/120/130 supported	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Connection with CP-9200SH supported	×	×	×	×	×	×	×	×	○	○	○	○	●	●	●	●	●	●	●	●	●	●		
Connection with CP-9300MS and MP-920/930 supported	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Connection with CP-9200(H) or PROGIC-8 supported	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○		
Supports connection with CP-9300MS (CP-9300MC compatible)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○		
Barcode connection	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Allen-Bradley PLC connection	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Connection with AB SLC500 supported	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Connection with AB MicroLogix1000/1500 supported	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○		
Connection with AB MicroLogix1200 supported	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△		
Toshiba PLC connection	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Connection with T3 and T3H supported	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
Connection with mode 13000 supported	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○		
Supports connection with the T2 series	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○		
SIEMENS PLC connection	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	●	●	●	●	●	●	●		
Connection with SIMATIC S7-300 supported	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	●	●	●	●	●	●	●		
Connection with SIMATIC S7-400 supported	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○		
Supports connection with SIMATIC S7-200 series	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△		
HITACHI PLC connection	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○		
Ethernet connection	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○ *2	○ *3	○ *3	○ *3	○ *3	○ *3	
Supports connection with the motion controller CPU (Q172CPU, Q173CPU)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○		
Matsushita Electric Works PLC connection	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	●	●	●	●		
Inverter connection	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△		

*1 Only F940WGOT compatible
*2 Only GT SoftGOT compatible
*3 When using the Ethernet communication module (A9GT-J71E71-T) whose hardware version is E or later, use GT Works Version 5 26C or later or GT Designer Version 5 26C or later.
(The module cannot be used with GT Works Version 5 P to Y or GT Designer Version 5 P to Y.)

(4) GT Designer functions added

(a) Added figure drawing functions

Figure Drawn	Description of Added Function	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Circle	Addition of fill pattern and fill background color setting function	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Rectangle	Addition of fill pattern and fill background color setting function	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Character	Addition of the function which displays high-quality characters	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●
	Addition of the function which displays 6×8 dot characters	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△
	Addition of character decoration "raised" setting function	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○

(b) Object functions added

Object Function	Description of Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Observe status	Function which performs write to the PLC CPU when the specified condition holds	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Addition of the word device value range as the observation condition	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of the function which specifies offset for the device set for the condition (for screen-based observation only)	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	The maximum number of set conditions + operations increased from 40 to 512	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of "BCD" to the data format of the written value for data SET operation when the condition holds	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of the function which copies the status observation settings	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○
Line graph	Addition of the function which sets undisplayed values	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Addition of the function which displays a track	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○
ASCII display	Addition of justification setting function	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△
ASCII input	Addition of justification setting function	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of input triqqer device setting function	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●
Numerical display	Addition of the function which displays values with decimal points after automatic adjustment made with the the object function	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
	Addition of the function which can change display attributes according to the specified device status (ON/OFF, device value)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
Numerical input	Addition of input triqqer device setting function	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●
	Addition of the function which displays values with decimal points after automatic adjustment made with the the object function	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○

(b) Object functions added

Object Function	Description of Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Panel meter	Addition of the function which allows the panel meter shape to be selected	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Addition of panel color specifying function	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Barcode	Connect the barcode reader to the GOT. Add the function that writes the data read with a barcode reader into the PLC CPU.	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Statistics display	Addition of the function which sets the display direction in a Rectangle graph chart	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Touch key	Addition of the function which uses character strings created by the comment function in character string display	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of the touch key (extended) function which displays the brightness adjustment screen of the GOT	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of the function which changes the comment of the reference destination according to the result of adding the specified device (up to 2 points) and fixed values in the function which uses on the character string display the character string created with the comment function.	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of initial value condition setting	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Addition of the function which XORs, reverses and paints the inside of a no-figure touch key	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of the touch key (extended) function which shows the list editing screen of the ACPU	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of auto repeat function	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of the function which specifies offset for the operation target device	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○
	Addition of the function which allows touch keys to be set as free figures	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●
	Addition of the function which can set quality characters for ON, OFF and midway point in double pressing	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○
	The basic conversion figures from GOT800 are added as the basic figures of group 2	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○
	Addition of the function that can specify the station number switching destination according to the screen type (base/overlap window 1, 2/superimpose)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
	Addition of the function that keeps outputting the buzzer while the touch key is pressed at the output timing of the touch key sound.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○

Object Function	Description of Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Touch key	Addition of the touch key (motion monitor) function that displays the motion monitor function	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○
	Addition of the touch key (servo amplifier monitor) function that displays the servo amplifier monitor screen	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Lamp display function	Addition of the function which allows lamps to be set as free figures	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●
	Addition of the function which can change display attributes according to the specified device status (ON/OFF, device value).	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
	The basic conversion figures from GOT800 are added as the basic figures of group 2	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
Hard copy	Addition of the function which outputs the screen image of the F940GOT to a printer.	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Addition of the function which alllows data to be saved on PC card as JPEG format file	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○
	Addition of the function which can provide 256-color mode printer output	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○
System information	Addition of the Human sensor detection signal	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of the I/O signal area for external I/O equipment	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of the currently printed report screen area	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of the report output signal	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of hard copy signal	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○
	Allows selection of only the functions necessary for system information	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●
	Addition of key window output signal to system information 2	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
	The following data are added to system information. • Used recipe number • Superimposed screen numbers 1, 2 • Input completion object ID	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△
Operation panel	Addition of the function which allows an operation panel to be connected for operation from outside the GOT	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
External I/O	Addition of the function which transfers signals to/from outside the GOT	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Report	Addition of the function which gathers and prints data per trigger	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Password	Addition of the function used to set level device for security setting	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●
	Addition of the function which enables selection of whetger message will be displayed or not if error occurs at password entry	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△
	Addition of the password used to change the parameter setting of the motion monitor function	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○
	Addition of the parameter setting changing password of the servo amplifier monitor function	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Screen switching	Addition of the function use to select whether screen switching device is initialized or not at power-on of GOT	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△

Object Function	Description of Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Overlap screen	The maximum number of overlaps screens has been changed from five to no restriction.	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of the function which further calls the screen which uses the screen calling function (hierarchical called screens)	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of window screens as the screens to be called and the screens which can use the screen calling function	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of the screen which allows overlap screen numbers to be batch-changed	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●
	Addition of the screen which displays overlap screens hierarchically.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●
Trend graph	Addition of "Rise", "Fall", "ON Sampling" and "OFF Sampling" triggers to the display conditions	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Part display function	Addition of the function which can fix displayed parts (parts can be overlapped) and the function which can display the base screen as a part	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Addition of the function which sets the starting number	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of the function which sets the preview number	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●
	Addition of the function which edits the object size	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△
	Addition of the function which can display window screens as parts	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of the function which can change display attributes according to the specified device status (ON/OFF, device value)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
Part movement display	Addition of the function which can change display attributes according to the specified device status (ON/OFF, device value)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
Comment function	Addition of the function which sets the starting number	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of the function which changes the display starting line for multi-line comment.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
Bar graph	Addition of the function which sets the display position of a scale	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Scatter graph	Addition of the function which gathers data stored in word devices associated with the X and Y axes and displays them as a scatter graph	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○
Time action	Addition of the function which performs operation, such as device write, at the specified time of the day of the week	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●
Sampling function	Addition of the function which collects data in the specified cycle or under the bit condition and displays them in a graph or the like.	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△
Alarm history function	Increase of the maximum monitor points that can be observed Bit device: 3072 points Word device (16 bits): 1024 points Word device (32 bits): 512 points	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○

Object Function	Description of Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Alarm history function	Addition of the function which allows data to be saved on PC card as CSV format file	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○
	Addition of the function which sends the date and time, comment and others as electronic mail when the specified device turns on/off.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○
	A function is added that interrupt the file storage using alarm history if an error is detected in the alarm information file to be stored.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○
Alarm list	Increase in number of device points that can be set Continuous: 8192 points Random: 512 points	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○
	Addition of "most to least recent" and "least to most recent" as the orders of displaying the alarm list	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●
Recipe function	Addition of the setting which does not create a recipe file automatically (does not set recipe device values) if the PC card has no recipe file.	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of the function which allows file reqister name to be specified with recipe device	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○
	Addition of the function which allows recipe operation to be copied	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●
	Addition of the function which allows the user to set the recipe file name	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
Script function	Addition of the function which can control the GOT display with the GOT side programs (scripts)	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of the function which automatically updates the path of the script file in the project data folder if the folder moves	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○
	Addition of the function which can use GOT internal devices (GD, GB) for substitution processing without substitution delay.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
	Addition of the function that updates the script data read to GT Designer to the latest script data.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○
Time action function	Addition of the function which sends various data, e.g. alarm history data, recipe file and screen image, as electronic mail (GT SoftGOT only)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○
Video display	Addition of the function which displays video image on the GOT by connection of the video input interface unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○*	○*	○*	○*	○*	○*	○*	○*
RGB screen display	Addition of the function which displays personal computer screen on the GOT by connection of the RGB input interface unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○*	○*	○*	○*	○*	○*	○*

Object Function	Description of Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Station number switching	Addition of the function that can specify the station number switching destination for the station number change device according to the screen type (base/overlap window 1, 2/superimpose)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○
	Addition of the touch key, status monitoring and script functions to the object corresponding to the station number switching function	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○

*Only A985GOT-V may be used.

(c) Other functions added

Edit and Setting Functions	Description of Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Sub-setting of project unit	Addition of the function which sets display or non-display according to whether an action condition is filled or not.	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of serial communication setting function	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of setup setting function	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of menu call key setting function	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of language setting function	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of the function which sets the cursor display position and cursor input region table for screen switching	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
	Addition of the function which allows specifying the screen number used as user-original key window	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●
	Addition of the function that sets portrait in the display format of the basic setting when F930GOT is used	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△
Screen-by-screen auxiliary setting	Addition of the function which sets the cursor display position and cursor input region table for screen switching	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
	Addition of the function which sets whether display is provided or not depending on whether operation condition is established or not on screen-by-screen basis, instead of project-by-project basis.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○
Key window	Addition of initial display position setting function for key window	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Addition of the function which creates a user-original key window to use it instead of the standard key window.	×	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Addition of the function which displays the window size at initial position setting	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△
	Addition of the function which allows you to select whether to display or hide the input enabled range shown for out of range input	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of the function that allows the key window to be used on the F930GOT	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△

Edit and Setting Functions	Description of Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Object list	Addition of the function which can display different objects classified by pages	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Addition of the function which allows the device setting to be changed by direct input from inside the list	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
GPPW device comment reference function	Addition of the function which can read and refer to the GPPW device comment data as another format data	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
"+" cursor display function	Addition of the function which automatically changes the cursor indication (shape) when a figure is drawn	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Enhancement of parts library	Addition of the special function keys having more complex functions to the parts library of touch keys	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Enhancement of parts library	Addition of new figures to the parts library of touch keys/lamps	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Device setting	Addition of the function which allows setting to be made by direct input on the setting dialog box of each object, without using the [Device] dialog box	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Changing the PLC type of project	Addition of the connection target CPU (QCPU) divides the conventional PLC type "MELSEC-A, QnA" into two different types of "MELSEC-A" and "MELSEC-QnA, Q".	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Grid display	"Mesh" is added as a choice.	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Travel	"Mesh" is added as a choice.	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Screen background color setting	Addition of the function which sets a background color on a screen basis	×	×	×	×	×	×	×	×	×	△	△	●	●	●	●	●	●	●	●	●	●	●	●
Panelkit save/read function	Addition of the function which allows a panelkit to be saved/read as a file	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●
Monochrome printer output compatibility	Addition of the function which allows adjustment for output to a monochrome printer	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●
Upload	Addition of the function which uploads the alarm history/alarm totalization/sampling function data from the GOT and saves them in a text file	×	×	×	×	×	×	×	×	×	×	×	×	△	△	△	△	△	△	△	△	△	△	△
Device batch-conversion	Addition of the function which batch-converts only the devices of the selected object	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
	Addition of the function which changes the commonly set devices	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○

Edit and Setting Functions	Description of Function Added	SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Window screen changing	Addition of the function which allows selection of whether the move and close keys are displayed or hidden in overlap windows 1, 2	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
	Addition of the function which can control the overlap window screen display position using the specified device value	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
CSV file-based comment read/write	Addition of the function which reads a CSV file as a comment and writes a comment as a CSV file	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
Operating environment	Addition of the function which leaves the previously saved data as backup at the time of project overwrite	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
	Addition of the function which can change the toolbar display position	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
	Addition of Microsoft® Windows® Millennium Edition Operating System and Microsoft® Windows® 2000 professional Operating System to the operating environment of GT Designer	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●
Improvement in drawing setting/ operability	Addition of the functions which improve operability for figure drawing/editing (shortcut keys, right-click menu, mouse operation)	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
	Addition of the function which defines the user settings as predetermined values in figure attribute setting	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
	Addition of the function which browses through a list display to choose a screen, comment, part or the like	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
	Addition of the function which shows the related setting item (comment, print format, communication, auxiliary setting) setting screen from the corresponding object setting screen	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
	Addition of the function which selects/deselects all data copied from the item list of another project on the [Import From Project] screen	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
Toolbars/ icons	Addition of new toolbars (Main/ View/Figure • Object/Edit/Draw) and icons	×	×	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●
Communication setting	Addition of the communication retry function which restarts communication if a communication error occurs during transfer of data to/from the GOT	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○

(5) Added GT Converter data to be converted

Data to Be Converted	SW1							SW2		SW3		SW4		SW5									
	A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Digital's package "GP-PR0/PBIII for Windows 95 (Ver 2.0/Ver 2.1)" data	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
L tag conversion supported	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
T, E tag conversion supported	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○
W tag, D script and LS area conversion supported	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○
Supports S tag conversion	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
PLC type: Memory link (SIO)/(Ethernet)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Addition of the conversion option function that selects whether the base screen is converted into the parts/window screen or not when Digital package data is converted	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○
Digital's package "GP-PR0/PBIII for Windows (Ver 3.0)" data	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○	○	○	○	○	○
Supports conversion of quality characters and basic touch key/lamp figures of GOT800 series.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○	○	○	○

(6) GT Manager function added

Description of Function Added		SW1							SW2		SW3		SW4		SW5									
		A	B	C	E	F	H	J	A	C	A	C	A	F	A	D	F	J	K	P	R	U	26C	33K
Project copy function	Addition of the function which performs cut/copy/paste on a project basis. Enables backup onto multiple FDs.	×	×	×	×	×	×	×	×	×	×	×	●	●	●	●	●	●	●	●	●	●	●	●

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GT Works Version5/GT Designer Version5

Reference Manual

MODEL	SW5-GOTR-R-E
MODEL CODE	1DM187
SH(NA)-080117-M(0601)MEE	

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