Changes for the Better

MITSUBISHI

GRAPHIC OPERATION TERMINALS

MELSEC-GOT

Operation Manual [GT Designer2 Version]

GOT-F900 Series Graphic Operation Terminal

For users of:

GT Designer2 (SW*D5C-GTD2-E)

GOT-F900

Foreword

- This manual contains text, diagrams and explanations which will guide the reader in the correct installation and operation of GOT -F900.
- Before attempting to install or use GOT-F900 this manual should be read and understood.
- If in doubt at any stage of the installation of GOT-F900 always consult a professional electrical engineer who is qualified and trained to the local and national standards which apply to the installation site.
- If in doubt about the operation or use of GOT-F900 please consult the nearest Mitsubishi Electric distributor.
- This manual is subject to change without notice.

GOT-F900 Series Graphic Operation Terminal

Operation Manual [GT Designer2 Version]

Manual number : JY997D09101
Manual revision : C
Date : September 2008

FAX BACK

Mitsubishi has a world wide reputation for its efforts in continually developing and pushing back the frontiers of industrial automation. What is sometimes overlooked by the user is the care and attention to detail that is taken with the documentation. However, to continue this process of improvement, the comments of the Mitsubishi users are always welcomed. This page has been designed for you, the reader, to fill in your comments and fax them back to us. We look forward to hearing from you.

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What condition did the manual arrive in?	☐Good	☐Minor damage	☐Unusable
Will you be using a folder to store the manual?	☐Yes	☐No	
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Which explanation was most difficult to understand: .....
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Thank you for taking the time to fill out this questionnaire. We hope you found both the product and this manual easy to use.

Guidelines for the Safety of the User and Protection of the Graphic operation terminal GOT-F900

This manual provides information for the use of the Graphic operation terminal GOT-F900. The manual has been written to be used by trained and competent personnel. The definition of such a person or persons is as follows;

a) Any engineer who is responsible for the planning, design and construction of automatic equipment using the product associated with this manual should be of a competent nature, trained and qualified to the local and national standards required to fulfill that role. These engineers should be fully aware of all aspects of safety with regards to automated equipment.

b) Any commissioning or service engineer must be of a competent nature, trained and qualified to the local and national standards required to fulfill that job. These engineers should also be trained in the use and maintenance of the completed product. This includes being completely familiar with all associated documentation for the said product. All maintenance should be carried out in accordance with established safety practices.

c) All operators of the completed equipment should be trained to use this product in a safe and coordinated manner in compliance to established safety practices. The operators should also be familiar with documentation which is connected with the actual operation of the completed equipment.

Note : Note: the term 'completed equipment' refers to a third party constructed device which contains or uses the product associated with this manual.

Notes on the Symbols Used in this Manual

At various times throughout this manual certain symbols will be used to highlight points of information which are intended to ensure the users personal safety and protect the integrity of equipment. Whenever any of the following symbols are encountered its associated note must be read and understood. Each of the symbols used will now be listed with a brief description of its meaning.

Hardware Warnings

1) Indicates that the identified danger **WILL** cause physical and property damage.

2) Indicates that the identified danger could **POSSIBLY** cause physical and property damage.

3) Indicates a point of further interest or further explanation.

Software Warnings

4) Indicates special care must be taken when using this element of software.

5) Indicates a special point which the user of the associate software element should be aware of.

6) Indicates a point of interest or further explanation.

- Under no circumstances will Mitsubishi Electric be liable responsible for any consequential damage that may arise as a result of the installation or use of this equipment.
- All examples and diagrams shown in this manual are intended only as an aid to understanding the text, not to guarantee operation. Mitsubishi Electric will accept no responsibility for actual use of the product based on these illustrative examples.
- Please contact a Mitsubishi distributor for more information concerning applications in life critical situations or high reliability.

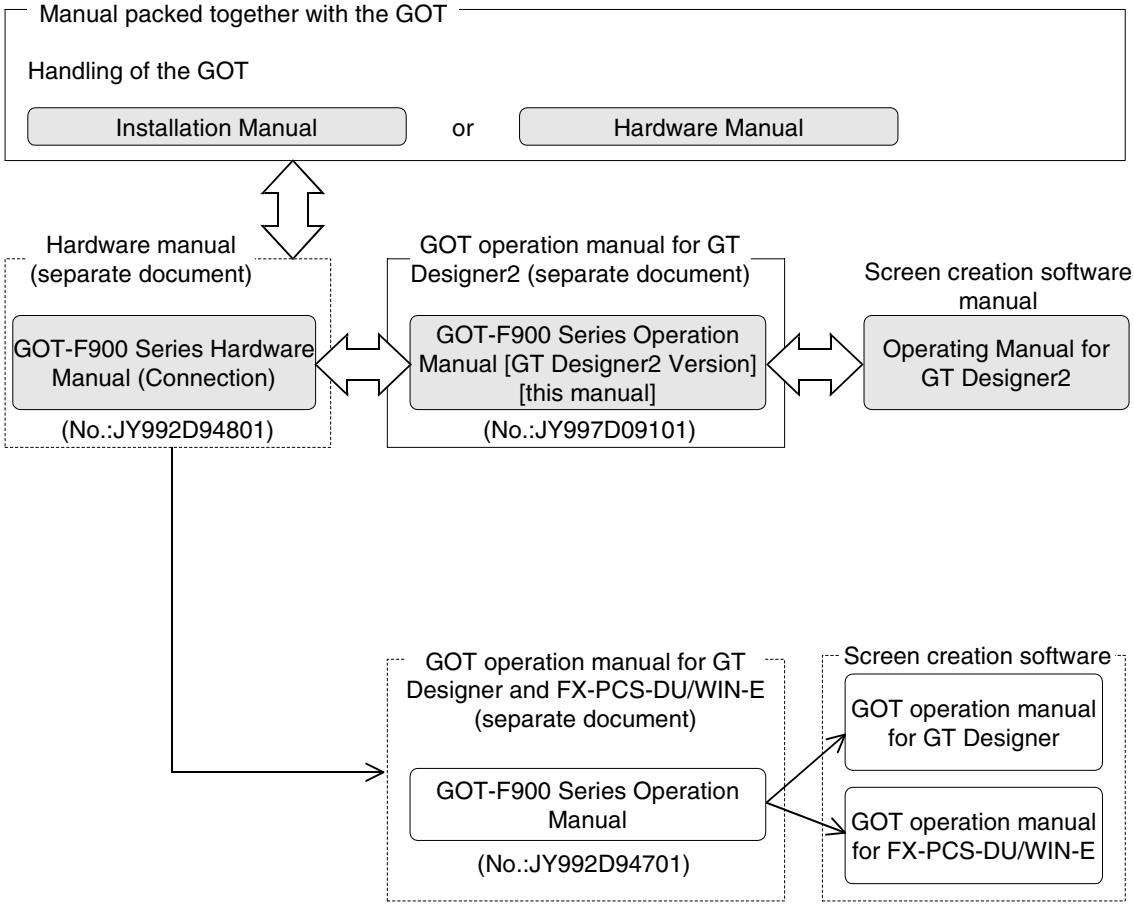
Table of Contents

Introduction

We appreciate it that you have purchased Mitsubishi Graphic Operation Terminal (GOT).
Please thoroughly read this manual before use, sufficiently understand the functions and performance of the GOT, then correctly use it.
Please see to it that this manual is delivered to the end user.

Position and use method of this manual

This manual describes the contents required to handle the GOT-F900 using the screen creation software GT Designer2.
With regard to the manual of the GOT and screen creation software, use a combination shaded in the figure below.
If the GT Designer or FX-PCS-DU/WIN is used as the screen creation software, a combination to be selected is shown in a broken line frame.
Note that the described contents are different in each combination.



This manual explains how to use utility screens (system screens) and how to create user screens of the "GOT-F900 Series".

Classification of manuals by purpose

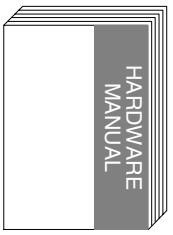
There are following manuals related to the GOT-F900 Series.
Each manual is classified by purpose. Please read a manual suitable to your purpose, then understand handling, operating procedures and functions of the GOT and GT Designer2 (SW□D5C-GTD2-E).
When requiring a manual not packed together with the GOT-F900, order it to a shop handling Mitsubishi products.

COMMON HARDWARE MANUAL (sent separately)

Corresponds to all of the F920GOT-K, F930GOT(-K), F940GOT and handy GOT Series, and describes in details the connection to a PLC or personal computer and the setting method.

- GOT-F900 SERIES GRAPHIC OPERATION TERMINAL HARDWARE MANUAL [CONNECTION] (No. JY992D94801)
  - To learn how to connect the GOT to a personal computer (for screen data transfer).
  - To understand how to connect the main unit to equipment.
  - To learn how to set the screen creation software.

MODEL CODE	09R805

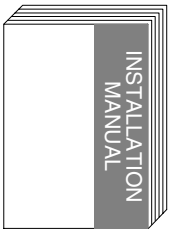


IIt is included as PDF data on CD-ROM of screen creation software SW□D5C-GTD2-E.
It is included as PDF data on CD-ROM of screen creation software SW□D5C-GOTR-PACK.

HARDWARE MANUAL AND INSTALLATION MANUAL

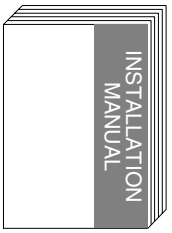
Describes mainly the outside dimension, the installation, the power supply wiring and the electrical specifications.

- F920GOT-BBD5-K-E, F920GOT-BBD-K-E INSTALLATION MANUAL (No. JY997D02201)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.



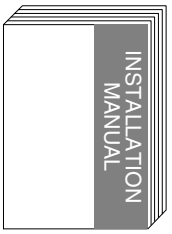
It is included with the F920GOT-BBD-K-E and F920GOT-BBD5-K-E.

- F930GOT INSTALLATION MANUAL (No. JY992D95701)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.



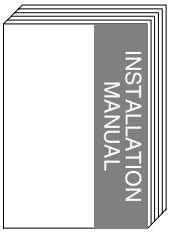
It is included with the F93□GOT-BWD-E.

- F930GOT-BBD-K-E INSTALLATION MANUAL (No. JY997D02501)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.



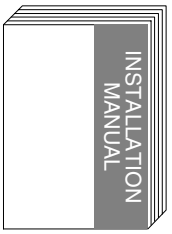
It is included with the F930GOT-BBD-K-E.

- F940GOT INSTALLATION MANUAL (No. JY992D94201)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.



It is included with the F94□GOT-SWD-E and F94□GOT-LWD-E.

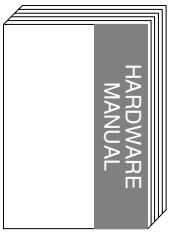
- F940WGOT INSTALLATION MANUAL (No. JY992D93901)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.



It is included with the F940WGOT-TWD-E.

- F940 HANDY GOT HARDWARE MANUAL (No. JY992D86901)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit.
  - To look at the external dimensions diagram of the main unit.

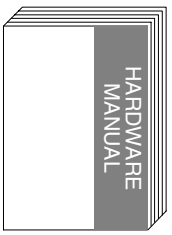
MODEL CODE	09R810



It is included with the F94□GOT-SBD-H-E and F94□GOT-LBD-H-E.

- F940 HANDY GOT (RH model) HARDWARE MANUAL (No. JY992D99901)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit.
  - To look at the external dimensions diagram of the main unit.

MODEL CODE	09R811



It is included with the F94□GOT-SBD-RH-E and F94□GOT-LBD-RH-E.

OPERATION MANUAL of GOT (sent separately)

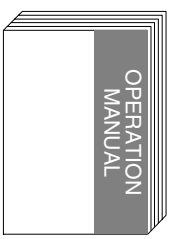
Describes how to operate system screens and how to create and operate user screens, and covers all of the F920GOT-K, F930GOT(-K), F940GOT and Handy GOT.

- GOT-F900 SERIES OPERATION MANUAL (No. JY992D94701)
  - To learn the display function of the GOT-F900.
  - To execute items in the HPP mode (such as "PROGRAM LIST" and "MONITOR").
  - To execute "DEVICE MONITOR" and display alarms.

  Screen creation software

  GT Designer and FX-PCS-DU/WIN-E are supported.

MODEL CODE	09R804



Applicable GOT
F920GOT-BBD-K-E
F920GOT-BBD5-K-E
F930GOT-BWD-E
F930GOT-BBD-K-E
F94□GOT-SWD-E
F94□GOT-LWD-E
F940WGOT-TWD-E
F94□GOT-SWD-(R)H-E
F94□GOT-LBD-(R)H-E

- GOT-F900 SERIES OPERATION MANUAL [GT Designer2] (No. JY997D09101)
  - To learn the display function of the GOT-F900.
  - To execute items in the HPP mode (such as "PROGRAM LIST" and "MONITOR").
  - To execute "DEVICE MONITOR" and display alarms.

Applicable GOT
F920GOT-BBD-K-E
F920GOT-BBD5-K-E
F930GOT-BWD-E
F930GOT-BBD-K-E
F94□GOT-SWD-E
F94□GOT-LWD-E
F940WGOT-TWD-E
F94□GOT-SWD-(R)H-E
F94□GOT-LBD-(R)H-E
It is distributed as PDF data saved in the CD-ROM of the SW□D5C-GTD2-E.

Screen creation software

GT Designer2 is supported.

MODEL CODE	09R813

OPERATION MANUAL of screen creation software

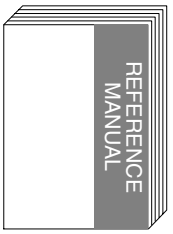
Two types of screen creation software are offered. The manual of the software you are using is required (It is included with the software.).

GT Designer2

- GT Designer2 (SW□D5C-GTD2-E) OPERATING MANUAL (separate manual)
  Consult with the distributor from which you have purchased GT Designer2.
  - To install the software to the personal computer.
  - To start up each software.
  - To learn how to connect the personal computer to the GOT.
  - To learn the screen configuration of the software.
  - To lean the outline of diversified monitoring functions.
  - To learn the procedure to display the monitor screen.
  - To learn how to use the library function.
  - To learn how to draw graphics.

It is distributed as PDF data saved in the CD-ROM of the SW□D5C-GTD2-E.

- GT Designer2 (SW□D5C-GTD2-E) REFERENCE MANUAL (separate manual)
  Consult with the distributor from which you have purchased GT Designer2.
  - To learn the types and specifications of GOT screens.
  - To learn the device range which can be monitored.
  - To learn common items to be set at the beginning.
  - To learn how to set and display the key window.
  - To learn how to use each object function.
  - To learn how to use the script function.



It is distributed as PDF data saved in the CD-ROM of the SW□D5C-GTD2-E.

GT Designer

- GT Designer (SW□D5C-GOTR-PACKE) OPERATING MANUAL
  - To install the software to the personal computer.
  - To start up the software.
  - To learn how to connect the personal computer to the GOT.
  - To learn the screen configuration of the software.
  - To learn the outline of diversified monitoring functions.
  - To learn the procedure to display the monitor screen.
  - To learn how to use the help function.

It is distributed as PDF data saved in the CD-ROM of the SW□D5C-GOTR-PACKE.

- FX-PCS-DU/WIN-E OPERATION MANUAL (No: JY992D68301)
  - To install the software to the personal computer.
  - To start up the software.
  - To learn how to connect the personal computer to the GOT.
  - To learn the screen configuration of the software.
  - To learn how to use the help function.

MODEL CODE	09R910

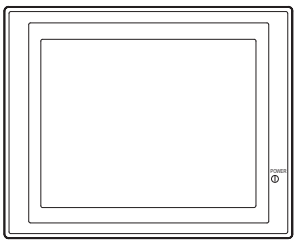
It is included with the FX-PCS-DU/WIN-E.

Abbreviations, Generic Names and Terms Used in This Manual

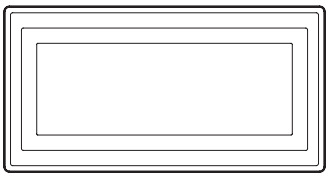
Abbreviations, generic names and terms used in this manual are shown below.

Types and Names of GOT-F900 Series

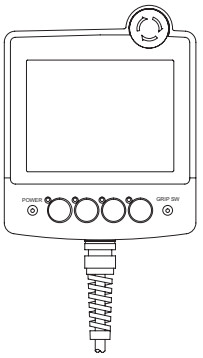
F940GOT



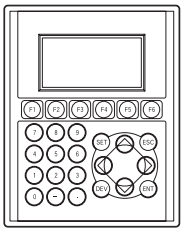
F930GOT



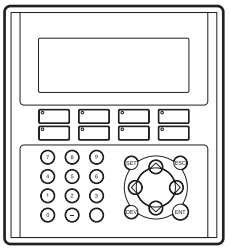
Handy GOT



F920GOT-K



F930GOT-K



Generic name	Name		Model name	Built-in I/F	Remarks
GOT-F900 Series	F940WGOT		F940WGOT-TWD	RS-422 ×1 RS-232C ×2	Japanese models
			F940WGOT-TWD-E,F940WGOT-TWD-C		World spec models
	F940GOT		F940GOT-SWD,F940GOT-LWD	RS-422 ×1 RS-232C×1	Japanese models
			F940GOT-SWD-E,F940GOT-LWD-E F940GOT-SWD-C,F940GOT-LWD-C	RS-422 ×1 RS-232C×1	World spec models
	F943GOT		F943GOT-SWD,F943GOT-LWD	RS-232C ×2	Japanese models
	F930GOT-K		F930GOT-BBD-K	RS-422 ×1 RS-232C×1	Japanese models
			F930GOT-BBD-K-E, F930GOT-BBD-K-C		World spec models
	F930GOT		F930GOT-BWD	RS-422 ×1 RS-232C ×1	Japanese models
			F930GOT-BWD-E F930GOT-BWD-C F930GOT-BWD-T		World spec models
	F933GOT		F933GOT-BWD	RS-232C ×2	Japanese models
	F920GOT-K	5V	F920GOT-BBD5-K	RS-422 ×1 RS-232C ×1	Japanese models
			F920GOT-BBD5-K-E, F920GOT-BBD5-K-C		World spec models
		24V	F920GOT-BBD-K	RS-422 ×1 RS-232C ×1	Japanese models
			F920GOT-BBD-K-E, F920GOT-BBD-K-C		World spec models
	F940 handy GOT *1		F940GOT-SBD-H,F940GOT-LBD-H F940GOT-SBD-RH,F940GOT-LBD-RH	RS-422 ×1	Japanese models
			F940GOT-SBD-H-E,F940GOT-LBD-H-E F940GOT-SBD-RH-E,F940GOT-LBD-RH-E		World spec models
	F943 handy GOT *1		F943GOT-SBD-H,F943GOT-LBD-H F943GOT-SBD-RH,F943GOT-LBD-RH	RS-232C ×1	Japanese models
			F943GOT-SBD-H-E,F943GOT-LBD-H-E F943GOT-SBD-RH-E,F943GOT-LBD-RH-E		World spec models

*1 In addition to the interface shown in the table, an RS-232C interface is built in for connection of a personal computer.

- Both the F940 Handy GOT and the F943 Handy GOT are generally called "Handy GOT".

Information Offered by Model Name

GOT

F9□□□GOT-○○○○-○-○-○
1) 2) 3) 4) 5) 6) 7) 8) 9)

1) LC display size
2: 3 in.
3: 4 in.
4: 6 in. (7 in. in F940WGOT)

2) PLC connection specifications
0: RS-422,RS-232C Interface
3: RS-232C × 2ch interface
In the case of Handy GOT
0: RS-422 Interface
3: RS-232C interface

3) Screen shape
None: Standard
W: Wide screen

4) Screen color
T: TFT type 256-color LCD
S: STN type 8-color LCD
L: STN type black-and-white LCD
B: STN type blue LCD

5) Panel color
W: White
B: Black

6) Input power supply specifications
D: 24V DC
D5: 5V DC

7) Various keys
None: Not with a key
K: With a key

8) Type
None: Panel face installation type
H: Handy GOT
RH: Handy GOT

9) Overseas models
E:
C:
T:
In-built fonts vary depending on model. For details, refer to the next page.

In-built Fonts of Graphic Operation Terminal (Japanese/Overseas product)

Carefully confirm the in-built fonts when selecting a model from the F920GOT-K or F930GOT(-K).

Name	GOT model name *1	Language displayed on system screen *2		In-built fonts (user screen) *3												
				Japanese		English	Korean	Chinese		Western Europe						
		At factory	Can be switched to	Shift JIS level-1 kanji set	Shift JIS level-2 kanji set	English	Korean	Simplified	Traditional	Italian	Dutch	Swedish	Spanish	German	Portuguese	French
F940WGOT	F940WGOT-TWD	Japanese	English	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	F940WGOT-TWD-E	English	Japanese	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	F940WGOT-TWD-C	Chinese (Simplified)	English	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F940GOT	F94□GOT-SWD	Japanese	English	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	F94□GOT-LWD															
	F940GOT-SWD-E	English	Japanese	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	F940GOT-LWD-E															
	F940GOT-SWD-C	Chinese (Simplified)	English	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	F940GOT-LWD-C															
F930GOT-K	F930GOT-BBD-K	Japanese	English	✓	✓*5	✓	–	–	–	✓	✓	✓	✓	✓	✓	✓
	F930GOT-BBD-K-E	English	Japanese	✓	–	✓	✓*4	–	–	✓	✓	✓	✓	✓	✓	✓
	F930GOT-BBD-K-C	Chinese (Simplified)	English	–	–	✓	–	✓	–	–	–	–	–	–	–	–
F930GOT	F93□GOT-BWD	Japanese	English	✓	✓*5	✓	–	–	–	✓	✓	✓	✓	✓	✓	✓
	F930GOT-BWD-E	English	Japanese	✓	–	✓	✓*4	–	–	✓	✓	✓	✓	✓	✓	✓
	F930GOT-BWD-C	Chinese (Simplified)	English	–	–	✓	–	✓	–	–	–	–	–	–	–	–
	F930GOT-BWD-T	English	–	–	–	✓	–	–	✓	–	–	–	–	–	–	–
F920GOT-K	F920GOT-BBD(5)-K	Japanese	English	✓	✓	✓	–	–	–	✓	✓	✓	✓	✓	✓	✓
	F920GOT-BBD(5)-K-E	English	Japanese	✓	✓	✓	✓*4	–	–	✓	✓	✓	✓	✓	✓	✓
	F920GOT-BBD(5)-K-C	Chinese (Simplified)	English	–	–	✓	–	✓	✓	–	–	–	–	–	–	–
Handy GOT	F94□GOT-SBD-H	Japanese	English	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	F94□GOT-LBD-H															
	F94□GOT-SBD-H-E	English	Japanese	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	F94□GOT-LBD-H-E															
Handy GOT (RH model)	F94□GOT-SBD-RH	Japanese	English	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	F94□GOT-LBD-RH															
	F94□GOT-SBD-RH-E	English	Japanese	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	F94□GOT-LBD-RH-E															

*1 □ in the GOT model name indicates 0 or 3. (The in-built interface varies as shown below.)

Name	0	3
F940GOT, F930GOT	RS-422(1), RS-232C(1)	RS-232C(2)
Handy GOT, Handy GOT RH model	RS-422(1)	RS-232C(1)

*2 A change on a system screen can be made in the screen creation software or GOT main unit.

*3 The font which can be displayed on a user screen
Depending on the OS, the font may not be displayed even if it is built in the GOT-F900.

*4 Only the Hangul is available.

*5 Supported from units manufactured in January, 2003 (serial No. 31****).

Abbreviation List

Abbreviation/generic name/term		Description
CPU	QCPU(Q mode)	Generic name of Q00JCPU, Q00CPU, Q01CPU, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU and Q25HCPU units
	QCPU(A mode)	Generic name of Q02CPU-A, Q02HCPU-A and Q06HCPU-A units
	QCPU	Generic name of QCPU (Q mode) and QCPU (A mode) units
	QnACPU(large type)	Generic name of Q2ACPU, Q2ACPU-S1, Q3ACPU, Q4ACPU and Q4ARCPU units
	QnACPU(small type)	Generic name of Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU and Q2ASHCPU-S1 units
	QnACPU	Generic name of QnACPU (large type) and QnACPU (small type) units
	AnUCPU	Generic name of A2UCPU, A2UCPU-S1, A3UCPU and A4UCPU units
	AnACPU	Generic name of A2ACPU, A2ACPU-S1 and A3ACPU units
	AnNCPU	Generic name of A1NCPU, A2NCPU, A2NCPU-S1 and A3NCPU units
	ACPU(large type)	Generic name of AnUCPU, AnACPU and AnNCPU units
	A2US(H)CPU	Generic name of A2USCPU, A2USCPU-S1 and A2USHCPU-S1 units
	AnS(H)CPU	Generic name of A1SCPU, A1SHCPU and A2SCPU units
	A1SJ(H)CPU	Generic name of A1SJCPU-S3 and A1SJHCPU units
	ACPU(small type)	Generic name of A2US(H)CPU, AnS(H)CPU and A1SJ(H)CPU units
	ACPU	Generic name of ACPU (large type), ACPU (small type) and A1FXCPU units
	FX_0 Series	Generic name of FX_0 Series main units
	FX_{0S} Series	Generic name of FX_{0S} Series main units
	FX_{1S} Series	Generic name of FX_{1S} Series main units
	FX_{0N} Series	Generic name of FX_{0N} Series main units
	FX_{1N} Series	Generic name of FX_{1N} Series main units
	FX_1 Series	Generic name of FX_1 Series main units
	FX Series	Generic name of FX Series main units
	FX_2 Series	Generic name of FX_2 Series main units
	FX_{2N} Series	Generic name of FX_{2N} Series main units
	FX_{2C} Series	Generic name of FX_{2C} Series main units
	FX_{2NC} Series	Generic name of FX_{2NC} Series main units
	FXCPU	Generic name of FX_0/FX_{0S}/FX_{1S}/FX_{0N}/FX_{1N}/FX_1/FX/FX_2/FX_{2N}/FX_{2C}/FX_{2NC} Series main units
	FX Series GM positioning unit	FX-10GM, FX-20GM, E-20GM, FX_{2N}-10GM and FX_{2N}-20GM
	A Motion controller CPU	Generic name of A171SCPU-S3, A171SHCPU, A172SHCPU and A273UHCPU
	FREQROL Series	A500/E500/S500 Series inverter
PLC by other companies	PLC by Omron	Generic name of C200H, C200HE, C200HG, C200HX, CQM1, CS1, CPM1A, CPM2A, CPM2C and CJ1
	PLC by Fuji Electric	Generic name of FLEX-PC N Series (NB-RS1-AC, NB-RS1-DC, NJ-RS4, NJ-RS1 and NJ-RS2)
	PLC by Yasukawa Electric	Generic name of machine controllers CP-9200SH, MP-920 and MP-930
	PLC by Matsushita Electric Works	Generic name of FP0, FP2SH, FP2SH+FP2-CCU and FPΣ
	PLC by Allen Bradley	Generic name of SLC 5/03 and SLC 5/04
	PLC by Siemens	Generic name of SIMATIC S7-200, S7-300 and S7-400

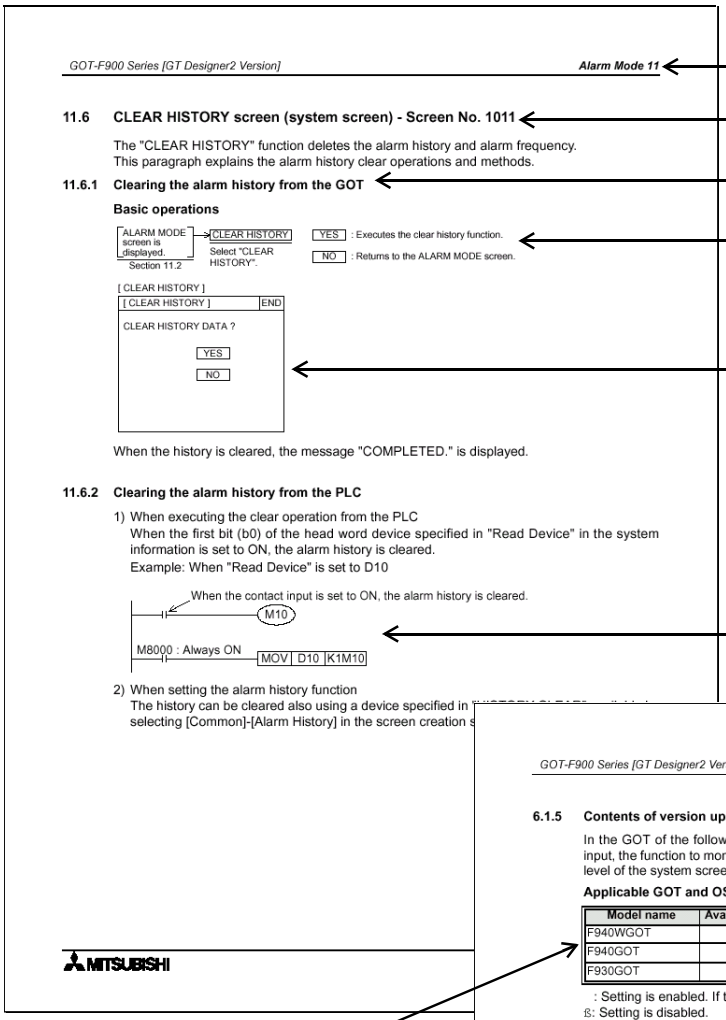
<table>
<tr><th colspan="2">Abbreviation/generic name/term</th><th>Description</th></tr>
<tr><td>PLC by other companies</td><td>PLC by another company</td><td>Generic name of PLC manufactured by Omron, Fuji Electric, Yasukawa Electric, Allen-Bradley or Siemens</td></tr>
<tr><td rowspan="11">Others</td><td>OS</td><td>Abbreviation of GOT system software</td></tr>
<tr><td>GT Designer2</td><td>Abbreviation of screen creation software for GOT-A900/GOT-F900 Series
<table>
<tr><td rowspan="2">GT Works2</td><td>SW□D5C-GTWK2-E</td><td>Integrated screen development software for GOT900 Series (SW□D5C-GTD2-E + GT Simulator2 + GT SoftGOT2) (English version)</td></tr>
<tr><td>SW□D5C-GTWS-E</td><td>Integrated screen development software for GOT900 Series (SW□D5C-GTWK2-E + A9GTSOFT-LKEY-P) (English version)</td></tr>
<tr><td>GT Designer2</td><td>SW□D5C-GTD2-E</td><td>Screen creation software for GOT900 Series (English version)</td></tr>
</table></td></tr>
<tr><td>GT Designer</td><td>Abbreviation of screen creation software for GOT-A900/GOT-F900 Series
<table>
<tr><td>GT Works</td><td>SW□D5C-GTWORKS-E</td><td>Integrated screen development software for GOT900 Series (SW□D5C-GOTR-PACKE + GT Simulator) (English version)</td></tr>
<tr><td rowspan="2">GT Designer</td><td>SW□D5C-GOTR-PACKE</td><td>Screen creation software for GOT900 Series SW□D5C-GOTR-PACKE (English version)</td></tr>
<tr><td>SW□D5C-GOTR-PACKEV</td><td>Software dedicated to version upgrade from conventional version to latest SW□D5C-GOTR-PACKE (English version)</td></tr>
</table></td></tr>
<tr><td>DU/WIN</td><td>Abbreviation of screen creation software FX-PCS-DU/WIN-E for GOT-F900 Series</td></tr>
<tr><td>FX/WIN</td><td>Abbreviation of programming software FX-PCS/WIN-E for FX Series PLC</td></tr>
<tr><td>Data conversion software</td><td>Abbreviation of data conversion software GOT Converter for GOT900 Series</td></tr>
<tr><td>Debugging software</td><td>Abbreviation of debugging software GOT Debugger</td></tr>
<tr><td>Object</td><td>Parts and setting data on the screen.</td></tr>
<tr><td>Windows95</td><td>Abbreviation of Microsoft Windows95</td></tr>
<tr><td>Windows98</td><td>Abbreviation of Microsoft Windows98</td></tr>
<tr><td>Windows NT4.0</td><td>Abbreviation of Microsoft Windows NT Workstation 4.0</td></tr>
<tr><td>Windows 2000</td><td>Abbreviation of Microsoft Windows 2000 Professional</td></tr>
<tr><td>Windows</td><td>Generic name of Windows95, Windows98, Windows NT4.0 and Windows2000</td></tr>
<tr><td>Personal computer (PC)</td><td>Personal computer compatible with Windows to which GT Designer2, GT Designer or DU/WIN is installed</td></tr>
</table>

This manual describes the following product in the new name.

Conventional name	New name	Remarks
GPPW	GX Developer	Abbreviation of software package SW□D5C-GPPW-E

How to read this manual

This section explains the format of this manual and symbols used in this manual.



Section

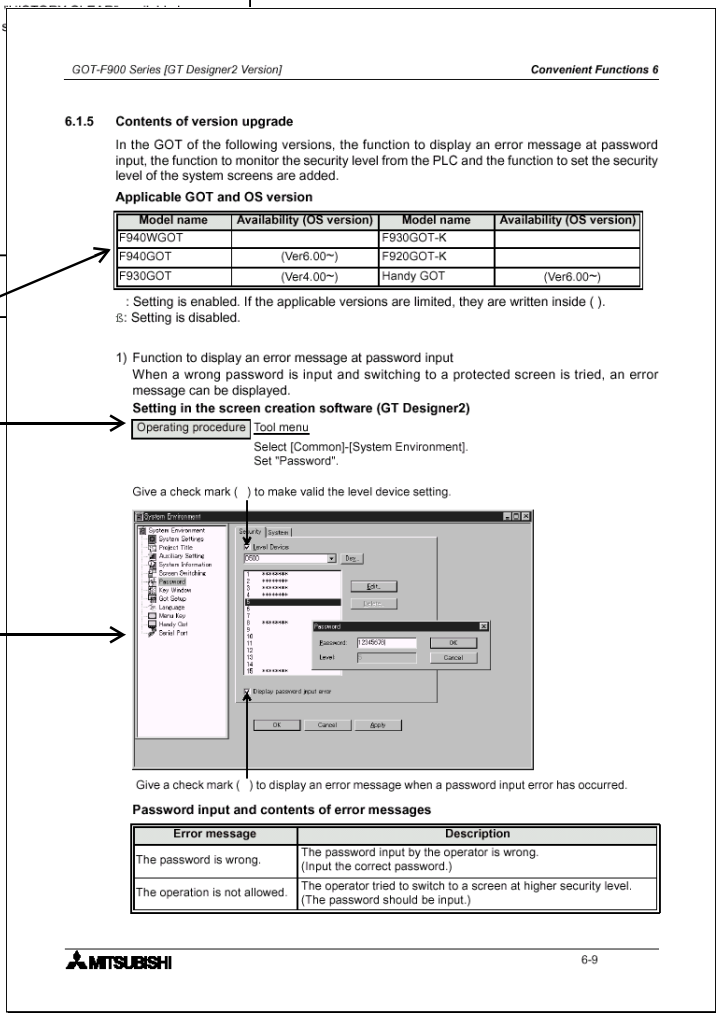
Section

Section

Touch switch operating procedure

GOT screen image

Program example



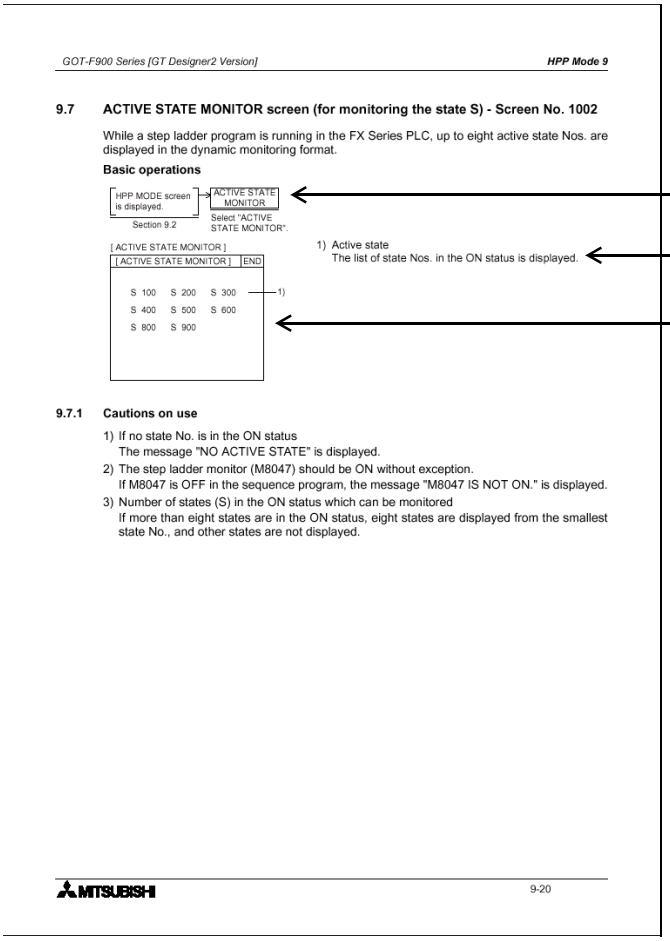
OS version applicable to the GOT

Screen creation software operating procedure

Screen creation software screen

Expressions and basic operations of operation keys

Operation keys described in the text are expressed as follows.
Unless otherwise specified, screen display examples and key operating procedures indicate cases in which the F940GOT is connected to the FX Series PLC.



Operation key operating procedure

1) The screen of the GOT works as touch switches. Touch an item with a finger to execute a corresponding operation (except in the F920GOT-K).
   In the description of operation example, each touch switch is shown with rectangular frame.

   [USER SCREEN MODE] , [LIST PROGRAM]

2) When the cursor control keys are to be pressed, it may be expressed as follows.

   [▲] , [▼] → [▲ , ▼]

3) When a same key is to be pressed several times or a same operation is to be executed, it may be expressed as follows.

   [▲] , [MORE] etc.

4) When a numeric value is to be input, input of an arbitrary numeric key among 0 to 9 may be expressed as follows.

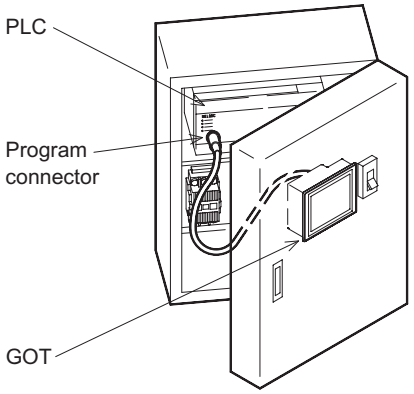
   [0~9]

1. Outline

This chapter explains the product configuration and system environment of the graphic operation terminal (GOT).
Confirm excellent functions of each unit.

1.1 Major Features

The graphic operation terminal (GOT) is so designed as to be installed on the panel surface of a control panel or operation panel and connected to the program connector of the PLC inside the control panel.
The GOT allows the user to monitor and change various devices of the PLC while checking the screen.
Screens created by the user screen mode and screens installed from the beginning in the GOT (system screens) are displayed. System screens offer many excellent functions.



1.1.1 User Screen Mode

Screen display function

Screens created by the user can be displayed.
Screens to be displayed can be restricted by using the screen security function.
User screens can be created using dedicated screen creation software.
This manual describes creation of screens using the GT Designer2.

1) Display function
   a) Up to 500 user screens can be displayed. For creating a screen, two or more screens can be overlapped one on top of another, and screens can be switched arbitrarily.
   b) Not only characters including alphabets and numbers but also simple graphics including straight lines, circles and rectangles as well as bit map data can be displayed.
2) Monitoring function
   a) Set values and current values of word devices of the PLC can be displayed in numeric values and bar graphs for monitoring.
   b) A specified area of the screen can be reversed according to the ON/OFF status of a bit device of the PLC.
3) Data change function
   a) Numeric data being monitored can be changed.
4) Switch function
   a) Bit devices of the PLC can be set to ON and OFF using the operation keys of the GOT. The display panel surface can be assigned as touch switches, and the switch function can be used.

1.1.2 System screen (utility)

1) Monitoring function

a) List program (only when the FX Series PLC is connected)

- In the instruction list program method, programs of the PLC can be read, written and monitored.

b) Buffer memory (only when the FX_{2N}/FX_{2NC} Series PLC is connected)

- The contents of the buffer memory (BFM) of special blocks can be read, written and monitored.

c) Device monitor

- The ON/OFF status of each device of the PLC as well as set values and current values of timers, counters and data registers can be monitored and changed.
- Different from the monitoring function of the screen display function described in the previous page, monitor display is given only when a device No. is selected by keys on the preliminarily prepared monitor screen.
- A bit device of the PLC can be specified, and it can be forcibly set to ON or OFF.

2) Data sampling function

The current value of a specified data register is acquired at a constant cycle or when the trigger condition is satisfied.

- The sampling data can be displayed in the list format or graph format.
- The sampling data can be output to the printer in the list format.

3) Alarm function

An alarm message can be assigned to each of up to consecutive 256 bit devices (32 devices in the F920GOT-K) of the PLC. When a bit device turns ON, an assigned message is displayed on the user screen. (The message overlaps the user screen.)
In addition, when a bit device turns ON, a specified user screen can be displayed.

- When a bit device turns ON, a message assigned (corresponding) to the bit device is displayed on the user screen. The list display is available also.
- The history of up to 1,000 alarms (turning ON of a bit device) can be saved.
  By using the screen creation software, the alarm history data can be read to a personal computer, and output to a printer.
- The number of times of alarm occurrence corresponding to each device can be stored.

4) Other functions

Many other useful functions are provided.

- The built-in clock function allows the user to set and display the time.
- The built-in two-port interface function enables data transfer between the personal computer in which the relay ladder creation software is started up and the PLC. At that time, screen display is enabled in the GOT.
- The screen contrast and buzzer sound can be set.

1.2 Name and Function of Each Part

This section describes the name and role of each part of the display area of the GOT.
For the operation switches and grip switch of the ET-900 and Handy GOT, refer to the separate document "GOT-F900 Series Hardware Manual [Connection]".

1.2.1 Front panel

1) Display

a) F920GOT-K

Graphic display of 128 × 64 dots

Character string:8 characters × 4 lines/full-width characters

The backlight can be changed over (between white and red).

b) F930GOT and F930GOT-K (horizontal display only)

Graphic display of 240 × 80 dots

Character string:30 characters × 5 lines/half-width characters (horizontal display)
10 characters × 15 lines/half-width characters (vertical display)

c) F940GOT

Graphic display of 320 × 240 dots

Character string:40 characters × 15 lines/half-width characters

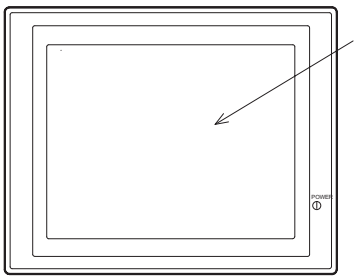
d) F940WGOT

Graphic display of 480 × 234 dots

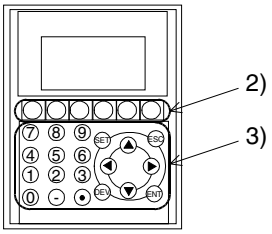
Character string:60 characters × 14 lines/half-width characters (horizontal display)
29 characters × 30 lines/half-width characters (vertical display)

Front panel of F930GOT/ F940GOT/F940WGOT

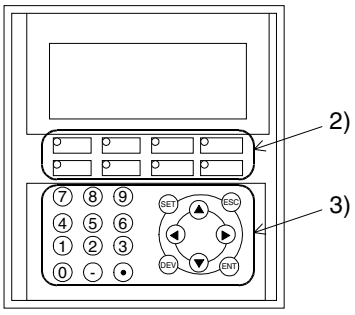
Examples:
F940GOT



F920GOT-K



F930GOT-K



2) Function switches

a) F920GOT-K: 6 membrane switches (without green LED)

b) F930GOT-K: 8 membrane switches with green LED

The operation of the function switches and turning ON/OFF of the LED can be set in the screen creation software. (For the setting method, refer to Chapter 7.)

3) Ten keys, cursor control keys, SET key, DEV key, ESC key and ENT key

a) F920GOT-K and F930GOT-K

Ten keys :"0" to "9", "-" and "."
Use the ten keys to input numeric values while inputting data.

Cursor control keys :"◀", "▶", "▲" and "▼"
Use these keys to move the cursor while inputting data.

SET key :Use this key to display the cursor while inputting data.

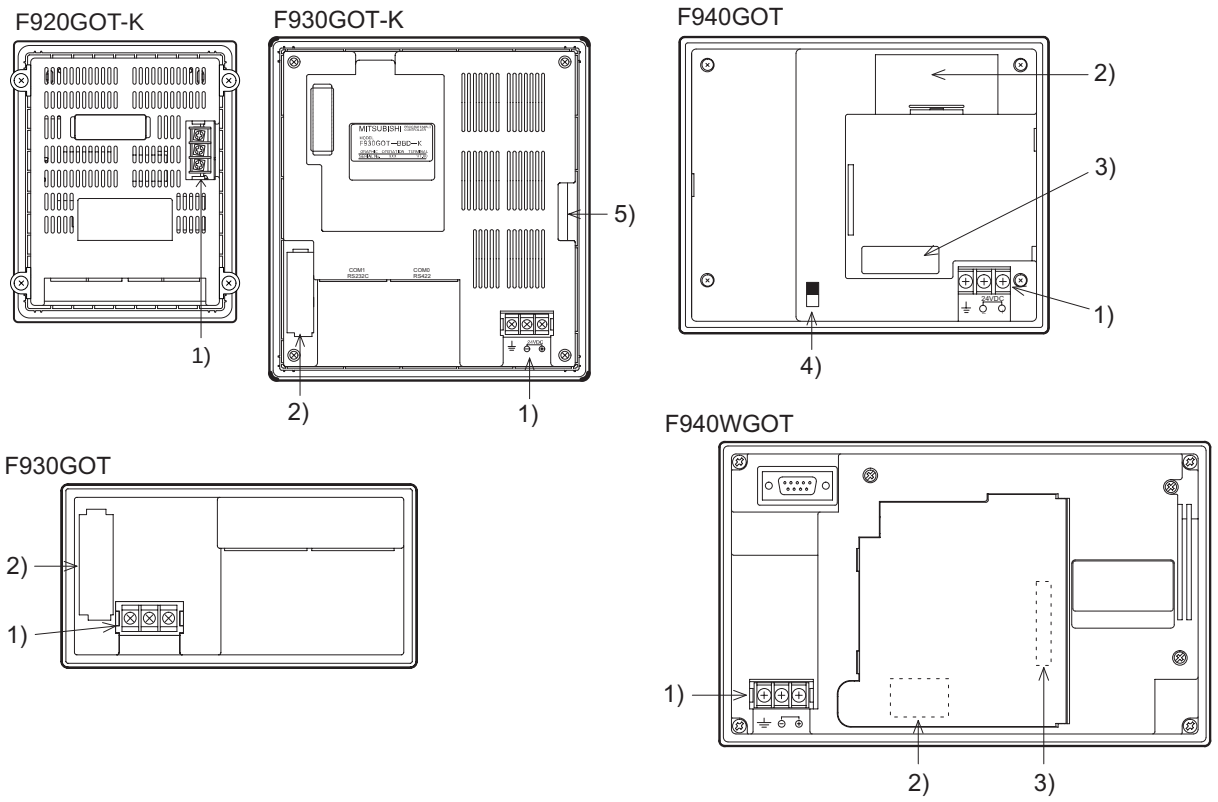
DEV key :Use this key to input devices in device monitor (system screen).
In the F920GOT-K, use this key also to switch a user screen to a system screen.

ESC key :Use this key to cancel the data input operation.
(In the F920GOT-K, use this key also to quit the system screen.)

ENT key :Use this key to determine the input numeric value while inputting data.

On the user screen, use the function switches of the F930GOT-K as switches, for inputting data and for switching the screen.
Mainly use the ten keys, cursor control keys, SET key, ESC key and ENT key to "input numeric values" on the user screen and change "ASCII input" data. While the system screen is displayed, use touch switches for setting.
(Some keys are valid even while the system screen is displayed. Refer to Section 7.4.)

1.2.2 Rear panel

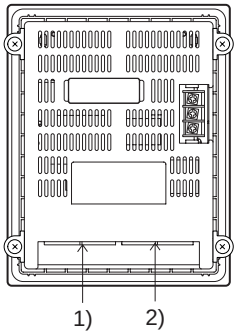


1) Power terminal
   Supplies the power to the GOT, and wires the ground.
   The F920GOT-K 5V type is supplied the power from the PLC via the connection cable.
2) Battery
   Saves the sampling data, alarm history and current time.
   Because the screen data is saved in the built-in flush memory, it is not required to be backed up by the battery.
   Battery name
   F920GOT-K: Not equipped with the battery
   F930GOT and F930GOT-K: FX2NC-32BL
   F940GOT and F940WGOT: PM-20BL
3) Extension interface
   Connects an optional extension equipment.
   When the data transfer adapter F9GT-40UMB is connected, the screen data can be transferred from the EPROM. When the memory board F9GT-40FMB is connected, the screen data can be transferred between the memory board and the GOT.
4) CN ↔ OP: selector switch
   Unused (F940GOT)
5) Name sheet
   Arbitrary key names can be assigned to the function switches of the F930GOT-K.
   Use a transparent sheet for OHP (packed together with the GOT), and cut it to the dimensions shown by the base sheet (Refer to the Installation Manual packed together with the GOT. Or refer to Section 16.5 of this manual.)
   For the and Handy GOT, refer to the separate document "GOT-F900 Series Hardware Manual [Connection]".

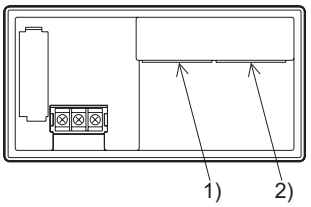
1.2.3 Function of connectors

Connect the PLC and peripheral equipment to the following connectors of the GOT.

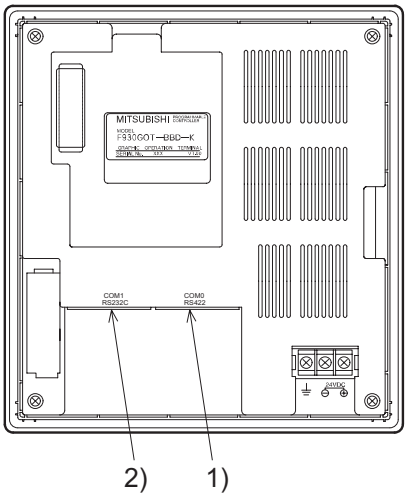
F920GOT-K



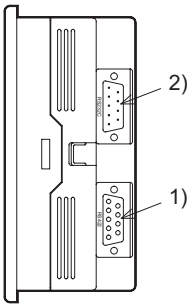
F930GOT



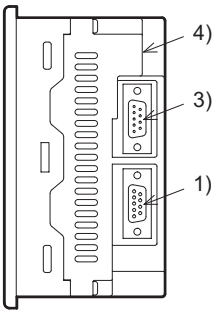
F930GOT-K



F940GOT



F940WGOT



1) PLC connector (RS-422 connector) D-sub, 9-pin, female connector
   - Use this connector to connect the PLC via the RS-422.
   - Use this connector also to connect two or more GOT units (via the RS-422). (Connection of two or more GOT units is not allowed in the F920GOT-K.)

2) Personal computer connector (RS-232C connector) D-sub, 9-pin, male connector
   - Use this connector to connect the personal computer for transferring the screen data created using the screen creation software.
   - Use this connector also to connect the PLC or micro computer board via the RS-232C. (The F920GOT-K can be connected only to the Q Series PLC.)
   - Use this connector also to connect two or more GOT units (via the RS-232C), a bar code reader or printer. (Connection of two or more GOT units, a bar code reader and printer is not allowed in the F920GOT-K.)
   - Use this connector for the two-port interface function (for connecting the personal computer in which the ladder support software is started up).

3) PLC connector (RS-232C connector) D-sub, 9-pin, male connector
   - Use this connector to connect the PLC or micro computer board via the RS-232C.
   - When using the F940WGOT, use this port also to connect two or more GOT units (through RS-232C), a bar code reader or a printer.

4) Personal computer connector (RS-232C connector) D-sub, 9-pin, male connector
   - Use this connector to connect the personal computer for transferring the screen data created using the screen creation software.
   - This connector is not available to connect the PLC.
   - Only while the GOT is connected to the PLC by way of the connector 3) (RS-232C), this connector is available to connect two or more GOT units (via the RS-232C), a bar code reader or printer.
   - Use this connector for the two-port interface function (for connecting the personal computer in which the ladder support software is started up).

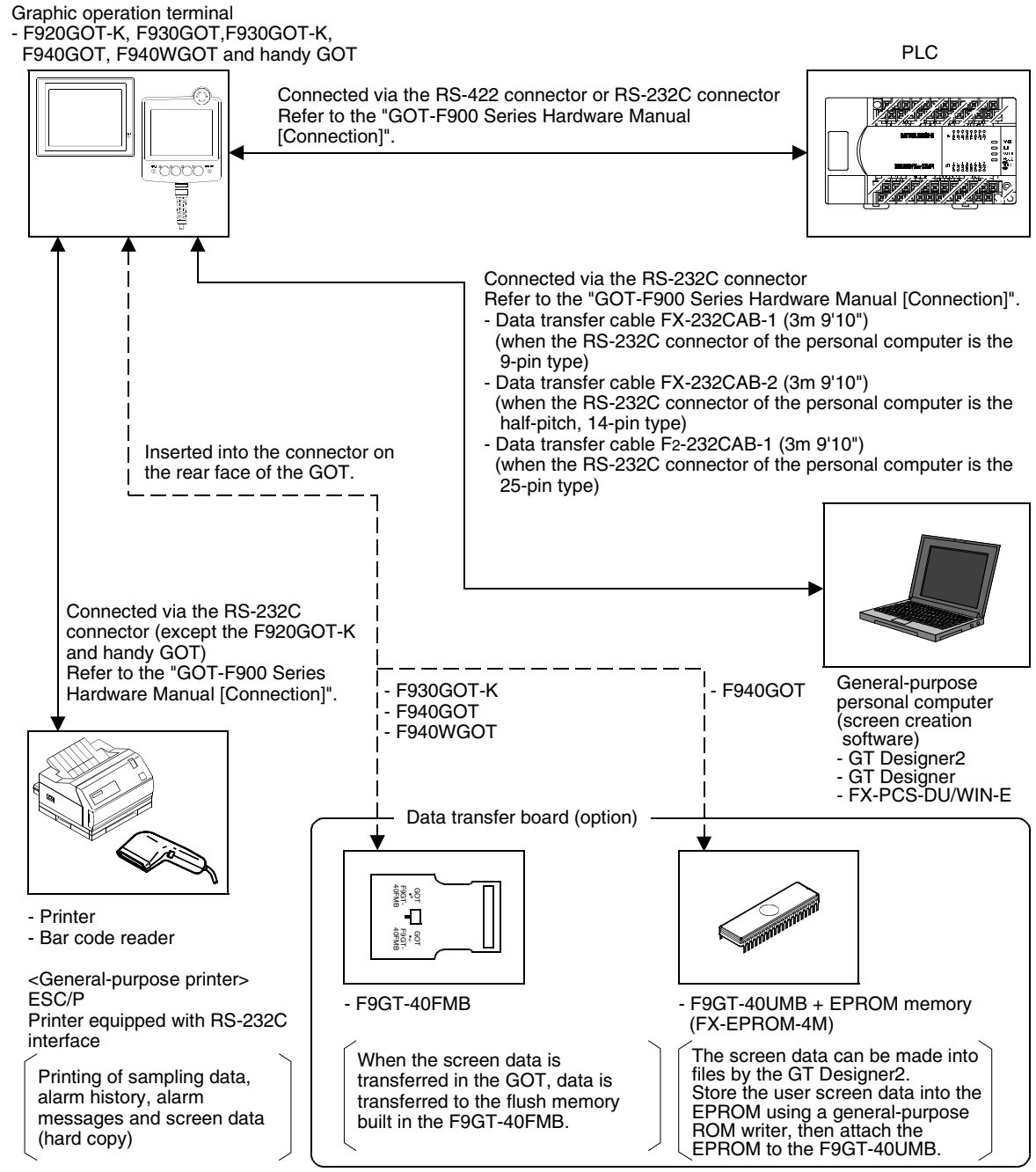
For connection of the PLC, micro computer board and personal computer, refer to the separate document "GOT-F900 Series Hardware Manual [Connection]".

1.3 System Configuration

This section explains connection between the GOT and the PLC and peripheral equipment.

1.3.1 Connection to peripheral equipment for GOT

The system configuration for the GOT is shown below.
For the applicable PLC, connection cable, setting method and details of the Handy GOT, refer to the "GOT-F900 Series Hardware Manual [Connection]".



1.3.2 Introduction of two-port interface function

For the details of the two-port interface function, refer to the "GOT-F900 Series Hardware Manual [Connection]".

Function:

The FX-PCS/WIN-E or GX Developer can be started up in the personal computer connected to the GOT, then sequence programs can be transferred and monitored.

Applicable PLC:

When the GOT is set to "CPU connection", the two-port interface function is available.

- When the GOT is connected to the FX, A, QnA or Q Series PLC via "CPU connection"
- When the GOT is connected to the QnA or Q Series serial communication unit

Restrictions:

- The F920GOT-K is available only when connected to the FX Series PLC via "CPU connection".
- The two-port interface function is not available when the GOT is connected to a PLC manufactured by any company other than Mitsubishi.

When using dedicated peripheral equipment:

When using the GOT and peripheral equipment dedicated to creation of sequence programs (which executes RS-422 communication such as the FX-20P-E) together with one PLC, connect the dedicated peripheral equipment to the built-in programming port, then add an option for connecting the GOT to the PLC.

- In the FX Series PLC, connect the GOT to a function extension board or special communication adapter.
- In the A Series PLC, connect the GOT to a computer link unit.
- In the QnA or Q Series PLC, connect the GOT to a serial communication unit.

1.4 Each Function and Applicable Model

✓: Available ×: Not available

Mode	Function	Model name			
		F920GOT-K	F930GOT-K F930GOT	F940GOT Handy GOT	F940WGOT
USER SCREEN MODE	TEXT DISPLAY	✓	✓	✓	✓
	DRAWING	✓	✓	✓	✓
	LAMP DISPLAY	✓	✓	✓	✓
	GRAPH DISPLAY	✓	✓	✓	✓
	NUMERIC DISPLAY	✓	✓	✓	✓
	NUMERIC INPUT	✓*1	✓*1	✓	✓
	SWITCH FUNCTION	✓*1	✓*1	✓	✓
	SCREEN SWITCHING	✓*1	✓*1	✓	✓
	RECIPE FUNCTION	✓*1	✓*1	✓	✓
	SECURITY FUNCTION	✓	✓	✓	✓
HPP MODE	PROGRAM (LIST) <only in FX Series>	×	×	✓	✓
	PARAMETER <only in FX Series>	×	×	✓	✓
	BFM MONITOR <only in FX2N and FX2NC Series>	×	×	✓	✓
	DEVICE MONITOR	✓	✓	✓	✓
	CURRENT VALUE/SET VALUE CHANGE	✓	✓	✓	✓
	FORCED ON/OFF	✓	✓	✓	✓
	STATE MONITOR	×	✓	✓	✓
	PC DIAGNOSIS <only in FX Series>	×	✓	✓	✓
SAMPLING MODE	SET CONDITION	×	×	✓	✓
	DISPLAY LIST/GRAPH	×	×	✓	✓
	CLEAR DATA	×	×	✓	✓
ALARM MODE	DISPLAY STATUS*2	×	×	✓	✓
	ALARM HISTORY*2	×	×	✓	✓
	ALARM FREQUENCY	×	×	✓	✓
	CLEAR HISTORY	×	×	✓	✓
TEST MODE	USER SCREEN	✓	✓	✓	✓
	DATA BANK	×	×	✓	✓
	DEBUG	×	×	✓	✓
	COMMUNICATION MONITOR	×	×	✓	✓
OTHER MODE	SET TIME SWITCH	✓*3	✓	✓	✓
	DATA TRANSFER	✓	✓	✓	✓
	PRINT OUT	×	✓	✓	✓
	ENTRY CODE	✓	✓	✓	✓
	SET-UP MODE	✓	✓	✓	✓

*1 When using the F920GOT-K, assign each function to a function switch.
When using the F930GOT-K, either type between touch switches and function switches can be set.

*2 Though the alarm mode is not provided on the system screen in the F920GOT-K, F930GOT-K and F930GOT, alarms can be displayed in the user screen mode.
When using the Alarm List in the F920GOT-K, the date and time cannot be displayed.

*3 In the F920GOT-K, the clock data of the PLC is displayed.
This clock data display function is available only when the connected PLC has the clock function.

1.5 Function List

Functions of the GOT are classified into six modes. The operator can select either mode to use each function.

Mode		Function	Outline of function	Reference chapter
USER SCREEN MODE	User screen	TEXT DISPLAY	Displays characters such as alphabets, numbers and external characters. Displays other languages. (Refer to 2.5.)	4
		DRAWING	Displays graphics such as straight lines, circles and rectangles.	
		LAMP DISPLAY	Reverses the screen display color in a specified range according to the ON/OFF status of a bit device of the PLC.	
		GRAPH DISPLAY	Displays the set value or current value of a word device of the PLC in the bar graph, line graph or meter format.	
		NUMERIC DISPLAY	Displays the set value or current value of a word device of the PLC in the numeric format.	
		NUMERIC INPUT	Allows to change the current value or set value of a word device of the PLC.	
		SWITCH FUNCTION	Controls the ON/OFF status of a device of the PLC. Allows to control a device in the momentary, alternate or set/reset format.	
		SCREEN SWITCHING	Switches the displayed screen. Switching can be specified from the PLC or a touch switch.	
	Others	RECIPE FUNCTION	Allows to transfer the data saved in the GOT to the PLC.	
		SECURITY FUNCTION	Displays only (user and system) screens whose entry code agrees.	6
HPP MODE	System screen (utility)	PROGRAM (LIST)	Allows to read, write and monitor programs in the instruction list program format (when the FX Series PLC is connected).	9
		PARAMETER	Allows to read and write parameters such as the program capacity and memory latch range (when the FX Series PLC is connected).	
		BFM MONITOR	Allows to monitor and change the set value of the buffer memory (BFM) of a special block for the FX2N/2NC Series (when the FX2N/2NC Series PLC is connected).	
		DEVICE MONITOR	Sets to ON/OFF a bit device and monitors the current value and set value of a word device by the device No. or comment expression.	
		CURRENT VALUE/SET VALUE CHANGE	Allows to change the current value and set value of a word device by the device No. or comment expression.	
		FORCED ON/ OFF	Allows to set to ON/OFF forcibly a bit device of the PLC.	

Mode		Function	Outline of function	Reference chapter
HPP MODE	System screen (utility)	STATE MONITOR	Monitors and displays automatically the state (S) No. during the ON operation (when the FX Series PLC is connected).	9
		PC DIAGNOSIS	Reads and displays the error information of the PLC (when the FX Series PLC is connected).	
SAMPLING MODE		SET CONDITION	Sets the condition such as (up to 4) devices to be sampled and the sampling start/end time.	10
		DISPLAY LIST/ GRAPH	Displays the sampling result in the list or graph format.	
		CLEAR DATA	Clears the sampling data.	
ALARM MODE		DISPLAY STATUS	Displays in the list of currently present alarms in the order of occurrence.	11
		ALARM HISTORY	Saves the alarm history in the order of occurrence together with the time of occurrence.	
		ALARM FREQUENCY	Stores the number of times of occurrence of each alarm.	
		CLEAR HISTORY	Deletes the alarm history.	
TEST MODE		USER SCREEN	Displays user screens in the order of screen No.	12
		DATA BANK	Changes the data used by the recipe function (data file transfer function).	
		DEBUG	Allows to confirm the operations to check whether key operations and screen switching were executed correctly while the user screen was displayed.	
		COMMUNICATION MONITOR	Displays the status of communication with the connected PLC.	
OTHER MODE		SET TIME SWITCH	Sets to ON/OFF a specified bit device at the specified time.	13
		DATA TRANSFER	Allows to transfer the screen data, sampling result and alarm history between the GOT and screen creation software.	
		PRINT OUT	Allows to print the sampling result and alarm history.	
		ENTRY CODE	Allows to register the entry code (password) to protect programs of the PLC.	
		SET-UP MODE	Allows the initial setting of the system language, connected PLC, serial communication, title screen, menu screen calling, current time, backlight OFF time setting, buzzer sound adjustment, LED contrast adjustment and screen data clear, etc.	

MEMO

2. Specifications

This chapter explains the specifications of the applicable version of equipment connectable to the GOT-F900, hardware and display unit.

2.1 OS version of GOT-F900 and availability in connected equipment

Some equipment (such as Mitsubishi PLC, PLC manufactured by another company, micro computer board, bar code and printer) cannot be connected depending on the version of the OS (operating system) in the GOT-F900.
In this section, check the OS version, and check its availability in equipment to be connected.

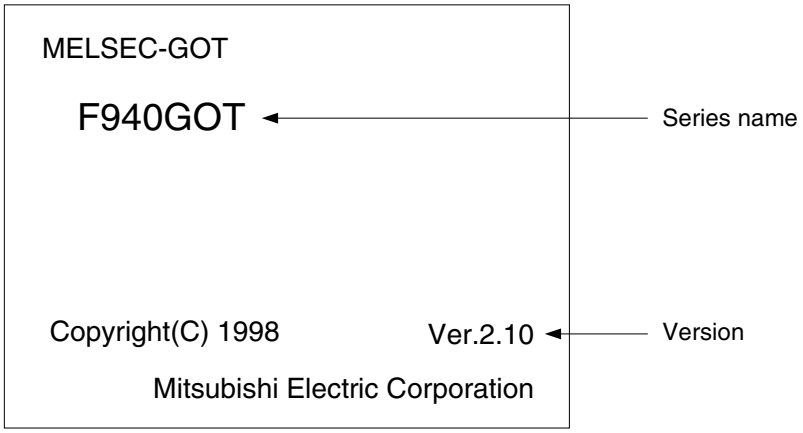
OS type

There are following five types of OS.

GOT-F900 Series	Name	Remarks
F940WGOT	940W system	
F940GOT, Handy GOT	940 system	
F930GOT	930 system	
F930GOT-K	930 system	The first product is Ver. 4.60 or later.
F920GOT-K	920 system	

2.1.1 How to Confirm OS Version of GOT-F900

When the power of the GOT-F900 is turned on, the screen shown below is displayed for several seconds to indicate the series name and the version number ("version 2.10" in the lower right position).
(The period of time to be displayed can be changed by the screen creation software or the GOT.)



On the rear panel of the GOT-F900 main unit, the nameplate indicating the manufacturer's serial number, the model name and the OS version is adhered. However, because the OS can be upgraded, it is recommended to confirm it using the method above.

2.1.2 PLC, Positioning unit, Inverter Manufactured by Mitsubishi

Connected equipment name and series name	RS-232C/ RS-422	OS version				Connection of two or more GOT units	Reference
		940W system	940 system	930 system	920 system		
MITSUBISHI Electric							
MELSEC-F FX Series (CPU direct connection)	**Connection type name [FXCPU direct connection]**						
Connection to programming port in FX CPU							
FX0,FX0S,FX1S,FX0N,FX1N,FX2N,FX2NC FX,FX2C FX2N +FX2N-422-BD FX1S +FX1N-422-BD FX1N +FX1N-422-BD	RS-422	1.00 or later	1.00 or later	1.00 or later	1.00 or later	✓*1	8.2.1
Connection to extended communication port							
FX1S+FX1N-232-BD FX1S+FX1N-CNV-BD+FX0N-232ADP FX1S+FX1N-CNV-BD+FX2NC-232ADP FX1N+FX1N-232-BD FX1N+FX1N-CNV-BD+FX0N-232ADP FX1N+FX1N-CNV-BD+FX2NC-232ADP FX2N+FX2N-232-BD FX2N+FX2N-CNV-BD+FX0N-232ADP FX2N+FX2N-CNV-BD+FX2NC-232ADP FX2NC+FX0N-232ADP FX2NC+FX2NC-232ADP	RS-232C	1.00 or later	1.00 or later	1.00 or later	1.20*2 or later	✓*1	8.2.2
MELSEC-A Series (CPU direct connection)	**Connection type name [ACPU direct connection]**						
Connection to programming port in A CPU							
AnN, AnA, AnS, AnSJ, AnSH, A1SH, A2C, A2CJ, A0J2H, AnU A2US(S1), A2USH, A1FX	RS-422	1.00 or later	1.00 or later	1.00 or later	1.00 or later	✓*1	9.2.1
MELSEC-A Series (computer link connection)	**Connection type name [A computer link connection]**						
Connection to computer link unit							
AJ71UC24, A1SJ71C24-R4, A1SJ71UC24-R4	RS-422	1.00 or later	1.00 or later	1.00 or later	1.20*2 or later	—	9.2.2
AJ71UC24, A1SJ71C24-R2, A1SJ71UC24-R2, A1CPUC24-R2, A2CCPU24	RS-232C						9.2.3
Motion controller (CPU direct connection)	**Connection type name [ACPU direct connection]**						
Connection to programming port in A CPU							
A171SCPU-S3, A171SHCPU, A172SHCPU, A173UHCPU, A273UHCPU	RS-422	1.00 or later	1.00 or later	1.00 or later	1.00 or later	✓*1	9.2.1
MELSEC-QnA/QnAS Series (CPU direct connection)	**Connection type name [QnACPU direct connection]**						
Connection to programming port in QnA CPU							
QnACPU, Q4ARCPU, Q2ACPU, Q2AHCPU, Q2ASCPU, Q2ASH(S1)CPU	RS-422	1.00 or later	3.00 or later	2.00 or later	1.00 or later	✓*1	10.2.1
MELSEC-QnA/QnAS Series (CPU direct connection)	**Connection type name [QnA computer link connection]**						
Connection to serial communication unit							
AJ71QC24, AJ71QC24-R4, A1SJ71QC24	RS-422	1.00 or later	3.00 or later	2.00 or later	1.20*2 or later	✓*1	10.2.2
AJ71QC24, AJ71QC24-R2, A1SJ71QC24, A1SJ71QC24-R2	RS-232C						10.2.3
MELSEC-A Series (computer link connection)	**Connection type name [A computer link connection]**						
Connection to computer link unit							
AJ71UC24, A1SJ71C24-R4 A1SJ71UC24-R4	RS-422	1.00 or later	3.00 or later	2.00 or later	1.20*2 or later	—	9.2.2
	RS-232C						9.2.3

Connected equipment name and series name	RS-232C/ RS-422	OS version				Connection of two or more GOT units	Reference
		940W system	940 system	930 system	920 system		
MELSEC-Q Series (CPU direct connection)						**Connection type name [QCPU direct connection]**	
Connection to programming port in Q CPU							
Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU	RS-232C	1.00 or later	4.10 or later	2.20 or later	1.00 or later	✓*1	11.2.1
Q00JCPU,Q00CPU,Q01CPU	RS-232C	1.30 or later	6.30 or later	4.30 or later	1.00 or later	✓*1	11.2.1
MELSEC-Q Series (CPU direct connection)						**Connection type name [QCPU direct connection]**	
Connection to serial communication unit							
QJ71C24	RS-422	1.00 or later	4.10 or later	2.20 or later	1.20*2 or later	—	11.2.2
QJ71C24, QJ71C24-R2	RS-232C						11.2.3
MELSEC-Q Series (CPU direct connection) (Q multiple PLC system Ver. B or later)						**Connection type name [QCPU direct connection]**	
Connection to programming port in Q CPU							
Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU	RS-232C	1.30 or later	6.30 or later	4.30 or later	1.00 or later	✓*1	11.2.1
Connection to serial communication unit							
QJ71C24	RS-422	1.30 or later	6.30 or later	4.30 or later	1.20*2 or later	—	11.2.2
QJ71C24, QJ71C24-R2	RS-232C						11.2.3
FX Series positioning unit (CPU direct connection)						**Connection type name [GM direct connection]**	
Connection to programming port in GM CPU							
FX2N-10GM, FX2N-20GM, FX-10GM, FX-20GM, E-20GM	RS-422	1.10 or later	6.10 or later	4.10 or later	—	—	12.2.1
FREQROL Series inverter (CPU direct connection)						**Connection type name [INV direct connection]**	
Connection to computer link (PU port, etc.)							
S500 Series (R-485 port built-in type only) A500 Series (PU port, FR-A5NR) E500 Series (PU port)	RS-422	1.10 or later	6.10 or later	4.10 or later	—	—	13.2.1

✓: Can connect —: Cannot connect

*1 Excluding the 920 system

*2 Excluding the 5 V type F920GOT-K.

2.1.3 PLC Manufactured by Other Companies

The table below describes the product evaluated in each series.

Connected equipment name and series name	RS-232C/ RS-422	OS version				Connection of two or more GOT units	Reference
		940W system	940 system	930 system	920 system		
General							
Microcomputer (general-purpose communication)						**Connection type name [Micro computer connection]**	
Connection to serial communication port							
Personal computer or microcomputer board equipped with RS-232C or RS-422 interface	RS-422	1.00 or later	1.00 or later	1.00 or later	1.20*2 or later	✓*1	14.2.1
	RS-232C						14.2.2
Omron							
SYSMAC COM1/C200H Series (upper link)						**Connection type name [SYSMAC C]**	
Connection to RS-232C port built in CPU							
CQM1 (built-in upper link) - CQM1-CPU21	RS-232C	1.00 or later	1.00 or later	1.00 or later	1.20*2 or later	—	15.2.2
CQM1H (built-in upper link) - CQM1H-CPU61	RS-232C	1.40 or later	6.40 or later	4.40 or later	1.20*2 or later	—	15.2.2
Connection to host link unit							
C200H/C200HS - C200H-CPU01 + C200H-LK202-V1 - C200HS-CPU31 + C200H-LK202-V1	RS-422	1.00 or later	1.00 or later	1.00 or later	1.20*2 or later	—	15.2.1
C200H/C200HS - C200H-CPU01 + C200H-LK201-V1 - C200HS-CPU31 + C200H-LK201-V1	RS-232C						15.2.2
SYSMAC CS1 Series (upper link)						**Connection type name [SYSMAC C]**	
Connection to RS-232C port built in CPU							
CS1G-CPU45-V1	RS-232C	1.00 or later	6.00 or later	4.00 or later	1.20*2 or later	—	15.2.2
Connection to serial communication board/unit							
CS1W-SCB41 (port 1, port 2)	RS-422	1.00 or later	6.00 or later	4.00 or later	1.20*2 or later	—	15.2.1
	RS-232C						15.2.2
CS1W-SCU21 (port 1, port 2)	RS-232C						15.2.2
SYSMAC α Series (upper link)						**Connection type name [SYSMAC C]**	
Connection to RS-232C port built in CPU							
C200HX-CPU44-Z	RS-232C	1.62 or later	6.62 or later	4.62 or later	1.20*2 or later	—	15.2.2
Connection to serial communication board							
C200HW-COM06-V1 (port A, port B)	RS-422	1.62 or later	6.62 or later	4.62 or later	1.20*2 or later	—	15.2.1
	RS-232C						15.2.2
SYSMAC CPM 1A/2A/2C Series (upper link)						**Connection type name [SYSMAC C]**	
Connection to peripheral port built in CPU							
CPM1A-10CDR-A + CQM1-CIF01 (Level conversion of peripherique port) + Conversion connector [25pin → 9pin] CPM2C-10CDR-D + CPM2C-CIF01-V1 (RS232C et port peripherique) CPM2C-10CDR-D + CPM2C-CN111	RS-232C	1.62 or later	6.62 or later	4.62 or later	1.20*2 or later	—	15.2.1
Connection to RS-232C port built in CPU							
CPM2A-30CDR-A	RS-232C	1.62 or later	6.62 or later	4.62 or later	1.20*2 or later	—	15.2.2
SYSMAC CJ1 Series (upper link)						**Connection type name [SYSMAC C]**	
Connection to RS-232C port built in CPU							
CJ1G-CPU44	RS-232C	1.62 or later	6.62 or later	4.62 or later	1.20*2 or later	—	15.2.2

Connected equipment name and series name	RS-232C/ RS-422	OS version				Connection of two or more GOT units	Reference
		940W system	940 system	930 system	920 system		
Fuji Electric							
FLEX-PC N Series (link unit)						**Connection type name [FLEX-PC N]**	
Connection to RS-232C port built in CPU							
NJ Series - NJ-CPU-B16	RS-232C	1.00 or later	1.00 or later	1.00 or later	—	—	16.2.2
Connection to link unit							
NB Series - NB-RS1-AC NJ Series - NJ-RS4 NS Series - NS-RS1	RS-422	1.00 or later	1.00 or later	1.00 or later	—	—	16.2.1
NB Series - NB-RS1-AC NJ Series - NJ-RS2 NS Series - NS-RS1	RS-232C						16.2.2
Yasukawa Electric							
Machine controller (memo bus connection)						**Connection type name [Machine controller]**	
Connection to RS-232C port built in CPU							
MP920, MP930, CP9200SH	RS-232C	1.00 or later	5.00 or later	3.00 or later	—	—	17.2.1
Connection to memo bus unit							
- MP920 + CP-217IF	RS-422	1.00 or later	5.00 or later	3.00 or later	—	—	17.2.1
- CP9200SH + CP-217IF	RS-232C						17.2.2
Matsushita Electric Works							
FP Series (CPU direct connection)						**Connection type name [FP]**	
Connection to COM port built in CPU							
FP0 Series - FP0-T32CT FP2SH Series - FP2-C2	RS-232C	1.10 or later	6.10 or later	4.10 or later	1.20*2 or later	—	18.2.1
Connection to tool port built in CPU							
FP0 Series - FP0-T32CT FP2SH Series - FP2-C2	RS-232C	1.10 or later	6.10 or later	4.10 or later	1.20*2 or later	—	18.2.1
Connection to COM port for communication with computer							
FP2SH Series - FP2-C2+FP2-CCU	RS-232C	1.10 or later	6.10 or later	4.10 or later	1.20*2 or later	—	18.2.1
FPΣ Series (CPU direct connection)						**Connection type name [FP]**	
Connection to tool port built in CPU							
FPG-C32T	RS-232C	1.62 or later	6.62 or later	4.62 or later	1.20*2 or later	—	
Connection to COM port for communication with computer							
FPG-C32T+FPG-COM1 (port 1) FPG-C32T+FPG-COM2 (port 1, port 2)	RS-232C	1.62 or later	6.62 or later	4.62 or later	1.20*2 or later	—	

Connected equipment name and series name	RS-232C/ RS-422	OS version				Connection of two or more GOT units	Reference
		940W system	940 system	930 system	920 system		
Allen-Bradly							
SLC500 Series (CPU direct connection)							**Connection type name [SLC500]**
Connection to port built in CPU							
SLC5/04 (1747-L541)	RS-232C	1.00 or later	2.00 or later	2.00 or later	1.20*2 or later	—	19.2.1
MicroLogix Series (CPU direct connection)							**Connection type name [SLC500]**
Connection to port built in CPU							
MicroLogix 1000 (D Series and later) - 1761-L10BWA Micro Logix 1000 analog - 1761-L20AWA-5A Micro Logix 1200 - 1762-L24BWA Micro Logix 1500 - 11764-24BWA(base) + 1764-LSP(CPU)	RS-232C	1.00 or later	6.00 or later	4.00 or later	1.20*2 or later	—	19.2.1
SIEMENS AG							
SIMATIC S7-300/400 Series (CPU direct connection)							**SIMATIC S7 Series (SIMATIC S7)**
Connection to port built in CPU							
S7-313 (6ES7 1AD03-0AB0) + HMI adapter (6ES7 972-0CA11-0XA0)	RS-232C	1.00 or later	5.00 or later	3.00 or later	1.20*2 or later	—	20.2.1
SIMATIC S7-200 Series (CPU direct connection)							**SIMATIC S7 Series (SIMATIC S7)**
Connection to port built in CPU							
S7-216-2 (6ES7 216-2BD00-0XB0) + PC/PPI cable (6ES7 901-3BF20-0ZA0)	RS-232C	1.20 or later	6.20 or later	4.20 or later	—	—	20.2.1

✓: Can connect —: Cannot connect

*1 Excluding the 920 system

*2 Excluding the 5 V type F920GOT-K.

2.1.4 Others

The table below describes the product evaluated in each series.

Connected equipment name and series name	RS-232C/ RS-422	OS version				Connection of two or more GOT units	Reference
		940W system	940 system	930 system	920 system		
General							
General-purpose printer for RS-232C						**SIMATIC S7 Series (RS-232C general-purpose printer)**	
Connection to RS-232C port							
Connection to ESC/P compatible printer equipped with built-in RS-232C interface LBP450 (laser printer for A4 size) [Cannon] LP8000SX (laser printer for A4 size) [EPSON]	RS-232C	1.00 or later	1.00 or later	1.00 or later	—	—	21.2.1
Bar code reader						**SIMATIC S7 Series (Bar code reader)**	
Connection to RS-232C port							
BCH5432-STA [Nihon Denki Seiki]	RS-232C	1.00 or later	2.00 or later	2.00 or later	—	—	21.2.1

✓: Can connect —: Cannot connect

2.2 Hardware Specifications

This section explains the hardware specifications of the GOT-F900 Series.

1) General specifications **"□" of the GOT model name indicates 0 or 3.**

<table>
<tr><th>Item</th><th>F940WGOT</th><th colspan="2">F940GOT</th><th>F930GOT-K</th></tr>
<tr><th>Product model name</th><th>F940WGOT-TWD-E</th><th>F940GOT-SWD-E</th><th>F940GOT-LWD-E</th><th>F930GOT-BBD-K-E</th></tr>
<tr><td>Supply voltage</td><td colspan="4">24V DC+10%-15%
(service power supply of PLC or separately prepared DC power supply)</td></tr>
<tr><td>24V DC current consumption (backlight OFF)</td><td>650mA/24V DC*1
(400mA/24V DC)</td><td>410mA/24V DC
(180mA/24V DC)</td><td>390mA/24V DC
(180mA/24V DC)</td><td>220mA/24V DC
(120mA/24V DC)</td></tr>
<tr><td>Fuse</td><td colspan="4">Built-in (irreplaceable)</td></tr>
<tr><td>Allowable momentary power failure time</td><td colspan="4">Operation continues against power failure of 5ms or less.</td></tr>
<tr><td>Built-in lithium battery</td><td>PM-20BL
(life: Approx. 5 years)</td><td colspan="2">PM-20BL
(life: Approx. 5 years)</td><td>FX2NC-32BL
(life: Approx. 3 years)</td></tr>
<tr><td>Ambient temperature</td><td>0~50×C*2</td><td colspan="2">0~50×C*3</td><td>0~50×C</td></tr>
<tr><td>Ambient humidity</td><td colspan="4">35 to 85%RH (no condensation)</td></tr>
<tr><td>Working atmosphere</td><td colspan="4">Must be free of lamp black, corrosive gas, flammable gas, or excessive amount of electroconductive dust particles and must be no direct sunlight. (Same as for saving)</td></tr>
<tr><td>Vibration resistance</td><td colspan="4"><table><tr><td></td><td>Frequency</td><td>Acceleration</td><td>Amplitude</td><td rowspan="5">10 times in each of X, Y and Z directions (for 80 min)</td></tr><tr><td rowspan="2">With intermittent vibration</td><td>10~57Hz</td><td>–</td><td>0.075mm</td></tr><tr><td>57~150Hz</td><td>9.8m/s^2</td><td>–</td></tr><tr><td rowspan="2">With continuous vibration</td><td>10~57Hz</td><td>–</td><td>0.035mm</td></tr><tr><td>57~150Hz</td><td>4.9m/s^2</td><td>–</td></tr></table></td></tr>
<tr><td>Impact resistance</td><td colspan="4">147 m/s^2, 3 times in each of X, Y and Z directions</td></tr>
<tr><td>Noise resistance</td><td colspan="4">By noise simulator of 1,000 Vp-p in noise voltage, 1 μs in noise width and 30 to 100 Hz in frequency</td></tr>
<tr><td>Withstand voltage</td><td colspan="4">500V AC for 1 min
(between all power terminals and ground terminal)</td></tr>
<tr><td>Insulation resistance</td><td colspan="4">5 MΩ or more by 500V DC megger
(between all power terminals and ground terminal)</td></tr>
<tr><td>Grounding</td><td colspan="4">Grounding resistance 100Ω or less</td></tr>
<tr><td>Protective structure</td><td>Equivalent to IP65f*6*7</td><td colspan="2">Equivalent to IP65f*6*7</td><td>Equivalent to IP65f*6*7</td></tr>
<tr><td>Display element Life</td><td colspan="4">Approx. 50,000 hours or more (working temperature: 25°C)</td></tr>
<tr><td rowspan="2">Backlight Life*4</td><td>50,000 hours
or more</td><td colspan="2">40,000 hours
or more</td><td>50,000 hours
or more</td></tr>
<tr><td colspan="4">Cold cathode fluorescent tube backlight (working temperature: 25°C)</td></tr>
</table>

	F930GOT	F920GOT-K		Handy GOT	
	F930GOT-BWD-E	**F920GOT-BBD-K-E**	**F920GOT-BBD5-K-E**	**F94□GOT-SBD-(R)H-E**	**F94□GOT-LBD-(R)H-E**
			5V DC Supplied from PLC	24V DC+10%-15% (separately prepared DC power supply)	
	200mA/24V DC (100mA/24V DC)	80mA/24V DC (70mA/24V DC)	220mA/5V DC (180mA/5V DC)	300mA/24V DC (200mA/24V DC)	
	Built-in (irreplaceable)		–	Built-in (irreplaceable)	
	Operation continues against power failure of 5ms or less.		–	Operation continues against power failure of 5ms or less.	
	FX2NC-32BL (life: Approx. 3 years)	–		FX2NC-32BL (life: Approx. 3 years)	
	0~50°C	0~50°C		0~40°C	
	35 to 85%RH (no condensation)				
	Must be free of lamp black, corrosive gas, flammable gas, or excessive amount of electroconductive dust particles and must be no direct sunlight. (Same as for saving)				
	<table><tr><th></th><th>Frequency</th><th>Acceleration</th><th>Amplitude</th><th rowspan="5">10 times in each of X, Y and Z directions (for 80 min)</th></tr><tr><td rowspan="2">With intermittent vibration</td><td>10~57Hz</td><td>–</td><td>0.075mm</td></tr><tr><td>57~150Hz</td><td>9.8m/s^2</td><td>–</td></tr><tr><td rowspan="2">With continuous vibration</td><td>10~57Hz</td><td>–</td><td>0.035mm</td></tr><tr><td>57~150Hz</td><td>4.9m/s^2</td><td>–</td></tr></table>				
	147 m/s^2, 3 times in each of X, Y and Z directions				
	By noise simulator of 1,000 Vp-p in noise voltage, 1 μs in noise width and 30 to 100 Hz in frequency				
←		500V AC for 1 min *5		500V AC for 1 min (between all power terminals and ground terminal)	
←		5 MΩ or more by 500V DC megger *5		5 MΩ or more by 500V DC megger (between all power terminals and ground terminal)	
←		Grounding resistance 100Ω or less	–	Grounding resistance 100Ω or less	
	Equivalent to IP65f*6*7	Equivalent to IP65f *6*7		Equivalent to IP54 *6	
	Approx. 50,000 hours or more (working temperature: 25°C)				
	50,000 hours or more	–		40,000 hours or more	
		LED (Red/White)		Cold cathode tube (working temperature: 25°C)	

*1 When the power is turned on, the current consumption of 750 mA/24V DC maximum is applied.
*2 0 to 50×C when the screen is installed laterally. 0 to 40×C when the screen is installed longitudinally or horizontally.
*3 0 to 40×C when the extension interface is used.
*4 The life of the backlight above indicates the value at 25×C.
*5 Between all power terminals of the PLC and ground terminal.
*6 The relevancy is confirmed in the test for IP65f or IP54. However, this test result does not provide any guarantees that the product stands against use in all sorts of environment.
*7 As regarding the front panel

1) Switch/lamp/buzzer specifications **"□" of the GOT model name indicates 0 or 3.**

Item		F940WGOT	F940GOT	F930GOT-K	
Product model name		F940WGOT-SWD-E	F940GOT-SWD-E F940GOT-LWD-E	F930GOT-BBD-K-E	
Switch/key	Operation switch	–	–	–	
	Function key	–	–	8 switches	
	Grip switch	–	–	–	
	Emergency stop switch	–	–	–	
	Keylock switch	–	–	–	
	Ten-key keypad	–	–	0~9, (-), (.)	
	Cursor key	–	–	ENT,ESC,SET,DEV, ▼,◀,▶,▲	
Lamp	Power indicator LED	–	1 LED (green)	–	
	Operation indicator LED	–	–	–	
	Function key LED	–	–	8 switches(green)	
	Grip switch indicator LED	–	–	–	
Buzzer*1	Buzzer	–	–	–	
	Built-in buzzer	Provided	Provided	Provided	

*1 The buzzer sounds as its power input from the outside of the GOT. When a touch key on the screen is pressed, the built-in buzzer sounds. (The in-built buzzer of F920GOT-K sounds only when the key-pad is operated.)

2) External interface specifications **"□" of the GOT model name indicates 0 or 3.**

Item		F940WGOT	F940GOT	F930GOT(-K)	
Product model name		F940WGOT-SWD-E	F940GOT-SWD-E F940GOT-LWD-E	F930GOT-BWD-E F930GOT-BBD-K-E	
Serial interface	RS-232C	9-pin D-Sub, male port, 2 channels #4-40UNC Inch screw thread	9-pin D-Sub, male port #4-40UNC Inch screw thread	9-pin D-Sub, male port #4-40UNC Inch screw thread	
	RS-422	9-pin D-Sub, female port M2.6 Metric screw thread	9-pin D-Sub, female port M2.6 Metric screw thread	9-pin D-Sub, female port M2.6 Metric screw thread	
External I/O connection	For operation switch	–	–	–	
	For emergency stop switch	–	–	–	

	F930GOT	F920GOT-K	Handy GOT			
	F930GOT-BWD-E	F920GOT-BBD-K-E F920GOT-BBD5-K-E	F94□GOT-SBD-H-E F94□GOT-LBD-H-E		F94□GOT-SBD-RH-E F94□GOT-LBD-RH-E	
	–	–	4 switches (4 contacts/ common)	a contact 10 mV/24V DC Life: 1,000,000 times	4 switches (4 contacts/ common)	a contact 10 mV/24V DC Life: 1,000,000 times
	–	6 switches	–	–	–	–
	–	–	1 switch (assigned as key in display unit)	–	1 switch (JSHD4H2 manufactured in Sweden) 3-positioned OFF/ ON/OFF (individual wiring)	2a contact 1A/24V DC (resistance load)
	–	–	1 switch (AH165-VR01 manufactured by Fuji Electric) (individual wiring)	b contact 1A/24V DC (resistance load) Life: 100,000 times or more	1 switch (AH165-VR02 manufactured by Fuji Electric) (individual wiring)	2b contact 1A/24V DC (resistance load) Life: 100,000 times or more
	–	–	–	–	1 switch (with 2 keys) (AS6M-2KT1PB manufactured by IDEC Corporation) (individual wiring)	c contact 1A/24V DC (resistance load) Life: 100,000 times or more
	–	0~9, (-), (.)	–		–	
	–	ENT,ESC,SET,DEV, ▼,◀,▶,▲	–		–	
	–	–	1 LED (green)		1 LED (green)	
	–	–	4 LED (green)		4 LED (green)	
	–	–	–		–	
	–	–	1 LED (green)		1 LED (green)	
	–	–	–		–	
	Provided	Provided	Provided		Provided	

	F920GOT-K	Handy GOT			
	F920GOT-BBD-K-E F920GOT-BBD5-K-E	F94□GOT-SBD-H-E F94□GOT-LBD-H-E		F94□GOT-SBD-RH-E F94□GOT-LBD-RH-E	
	9-pin D-Sub, male port #4-40UNC Inch screw thread	9-pin D-Sub, male connector Screen data transfer Dedicated to personal computer port		9-pin D-Sub, male connector Screen data transfer Dedicated to personal computer port	
	9-pin D-Sub, female port M2.6 Metric screw thread	Dedicated port F940GOT-*BD-H:RS-422 F943GOT-*BD-H:RS-232C		Dedicated port F940GOT-*BD-RH:RS-422 F943GOT-*BD-RH:RS-232C	
	–	4 switches (4 contacts/common)	External cable (with 25-pin D-Sub connector or untied)	4 switches (4 contacts/common)	External cable (with 37-pin D-Sub connector or untied)
	–	1 switch(a contact)		1 switch(a contact)	

2.3 Display unit specifications

The table below shows display languages (system language/user screen language) for Japan-oriented products.
For overseas-oriented products, refer to "Fonts built in the display unit (list of Japan-oriented and overseas-oriented products)" in "Introduction".

Item	Specifications			
	F920GOT-BBD5-K-E F920GOT-BBD-K-E	F930GOT-BWD-E	F930GOT-BBD-K-E	
Display elemen				
LCD type	STN type full-dot matrix LCD	STN type full-dot matrix LCD		
Dot pitch Horizontal × Vertical (mm)	0.47×0.47	0.47×0.47		
Display color	2 colors (blue and white)	2 colors (blue and white)		
Screen (For the details, refer to the later description.)	128 × 64 dots LCD 8 full-width characters × 4 lines Effective display size: 60 × 30 mm (Type 3)	240 × 80 dots LCD 15 full-width characters × 5 lines Effective display size: 117 × 42 mm (Type 4)		
Service life	Liquid crystal: Approx. 50,000 hours (at room temperature = 25°C and room humidity)			
Display language				
System language	Japanese and English (Japanese can be selected as the system language only when Japanese is selected as the user screen language.)			
User screen language	Japanese, English, Italian, Dutch, Swedish, Spanish, Danish, German, Portuguese and French	Japanese, English, Italian, Dutch, Swedish, Spanish, Danish, German, Portuguese and French		
	Alphabets, numbers and Katakana can be displayed in the size of 1/2 to 4 times in the vertical direction and 1 to 4 times in the horizontal direction. Kanji (at the first shift JIS level) can be displayed in up to 1 to 4 times in both the vertical and horizontal directions.			
Screen creation environment Windows	When displayed in Japanese Start up the GT Designer2 in the Japanese OS (Windows), then create screens. (English can be input also.)			
	When displayed in language other than Japanese (Refer to 3.9.) Start up GT Designer2 (SW1D5C-GTD2-E) with OS (Windows) of the correspondence to the displayed language, and make the screen. To display the user screen in Japanese Start up GT Designer2 (SW1D5C-GTD2-J) of a Japanese version with Japanese OS (Windows), and make the screen.			
Backlight				
Type	LED(The color can be changed over between white and red.)	Cold cathode (Service life: 50,000 hours or more at 25°C)		
Touch switch				
Number of available touch switches	No touch switch	Up to 50 touch switches/screen		
Configuration (Horizontal × Vertical)	--	Matrix configuration: 15 × 4		

*1 In the F940WGOT, data is displayed vertically with the approximate dot pitch ratio "Horizontal : Vertical = 1 : 1.16".

	Specifications		
	F940GOT-LWD-E F940GOT-LBD-H-E F943GOT-LBD-H-E	**F940GOT-SWD-E F940GOT-SBD-H-E F943GOT-SBD-H-E**	**F940WGOT-TWD-E**
	STN type full-dot matrix LCD		TFT type full-dot matrix LCD
	0.36 × 0.36		0.324 × 0.375 *1
	2 colors (black and white)	8 colors	256 colors
	320 × 240 dots LCD 20 full-width characters × 15 lines Effective display size: 115 × 86 mm (Type 6)		480 × 234 dots LCD 30 full-width characters × 14 lines Effective display size: 155.5 × 87.8 mm (Type 7)
	Liquid crystal: Approx. 50,000 hours (at room temperature = 25°C and room humidity)		
	Japanese and English (Japanese can be selected as the system language only when Japanese is selected as the user screen language.)		
	Japanese, English, Chinese (simplified), Chinese (traditional), Korean, Italian, Dutch, Swedish, Spanish, Danish, German, Portuguese and French		Japanese, English, Chinese (simplified), Chinese (traditional), Korean, Italian, Dutch, Swedish, Spanish, Danish, German, Portuguese and French
	Alphabets, numbers and Katakana can be displayed in the size of 1/2 to 4 times in the vertical direction and 1 to 4 times in the horizontal direction. Kanji (at the first shift JIS level) can be displayed in up to 1 to 4 times in both the vertical and horizontal directions.		
	When displayed in Japanese Start up the GT Designer2 in the Japanese OS (Windows), then create screens. (English can be input also.)		
	When displayed in language other than Japanese (Refer to 3.9.) Start up GT Designer2 (SW1D5C-GTD2-E) with OS (Windows) of the correspondence to the displayed language, and make the screen. To display the user screen in Japanese Start up GT Designer2 (SW1D5C-GTD2-J) of a Japanese version with Japanese OS (Windows), and make the screen.		
	Cold cathode (Service life: 40,000 hours or more at 25°C)		Cold cathode (Service life: 50,000 hours or more at 25°C)
	Up to 50 touch switches/screen		
	Matrix configuration: 20 × 12		30 × 12 matrix configuration (last column composed of 14 dots)

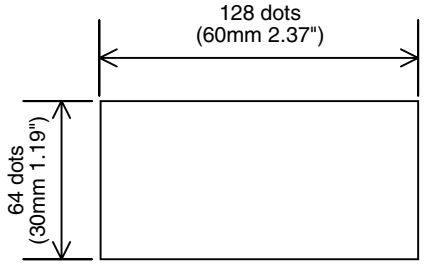
Item	Specifications			
	F920GOT-BBD5-K-E F920GOT-BBD-K-E	F930GOT-BWD-E	F930GOT-BBD-K-E	
Number of screens				
Base screen	Up to 500 user screens Screen Nos. are 1 to 500 when the GT Designer2 is used. (Screen Nos. are 0 to 499 when data created using the FX-PCS-DU/WIN-E are used.)			
Key window	--	3 screens (screen Nos. are 1 to 3.)		
System screen	12 screens (screen Nos. are 1 to 3.)	25 screens (screen Nos. are 1 to 3.)		
memory				
User memory	Flush memory (128 kB)	Flush memory (256 kB)		

- Bright dots (always lit) and dark dots (unlit) may appear on a liquid crystal display panel. It is impossible to completely avoid this symptom, as the liquid crystal display comprises of a great number of display elements.
  Flickers may be observed depending on the display color.
  Please note that these dots appear due to its characteristic and are not caused by product defect.
- When the same screen is displayed for a long time, an incidental color or partial discoloration is generated on the screen due to heat damage, and it may not disappear.
- Using the GOT Backlight OFF function can prolong the life of the backlight.
  For details on the Backlight OFF function, refer to the following.
  Section 3.6 and 8.4

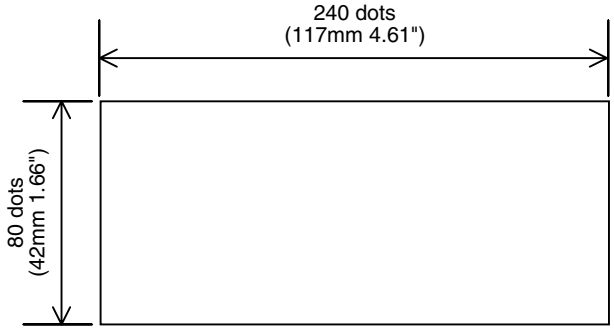
	Specifications		
	F940GOT-LWD-E F940GOT-LBD-H-E F943GOT-LBD-H-E	**F940GOT-SWD-E F940GOT-SBD-H-E F943GOT-SBD-H-E**	**F940WGOT-TWD-E**
	Up to 500 user screens Screen Nos. are 1 to 500 when the GT Designer2 is used. (Screen Nos. are 0 to 499 when data created using the FX-PCS-DU/WIN-E are used.)		
	3 screens (screen Nos. are 1 to 3.)		
	30 screens (screen Nos. are 1001 to 1030.)		
	Flush memory (512 KB)		Flush memory (1MB)

Screen form and display size

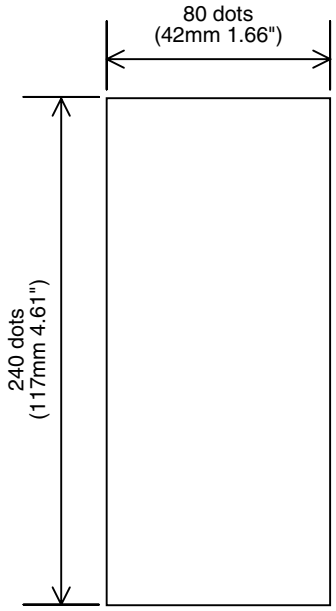
1) F920GOT-K
   One horizontal window can be displayed.



2) F930GOT and F930GOT-K (horizontal display)
   In the F930GOT-K, one horizontal window can be displayed.
   In the F930GOT, one horizontal window or one vertical window can be displayed.

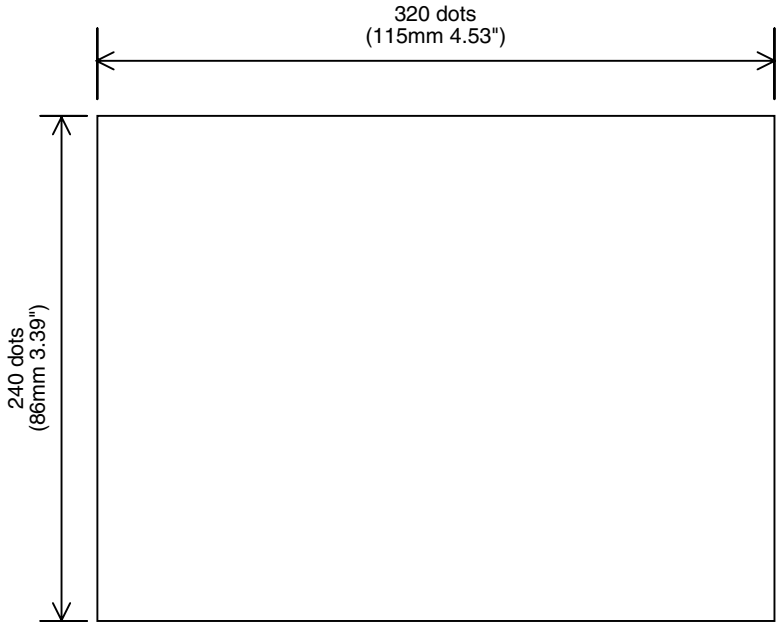


   F930GOT (vertical display)



3) F940GOT

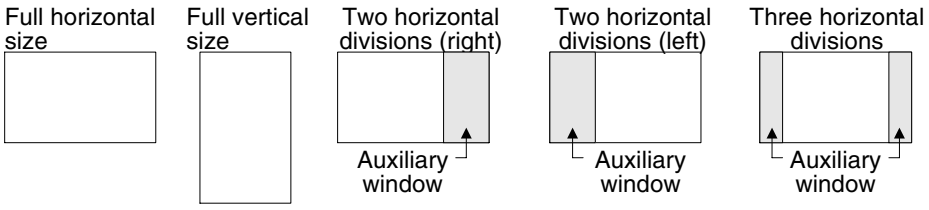
Only one horizontal window can be displayed.



4) F940WGOT (horizontal display)

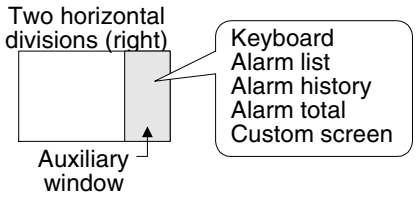
Screen layout and dividing function

When the screen layout is horizontal or vertical, two divisions or three divisions can be selected and combined.



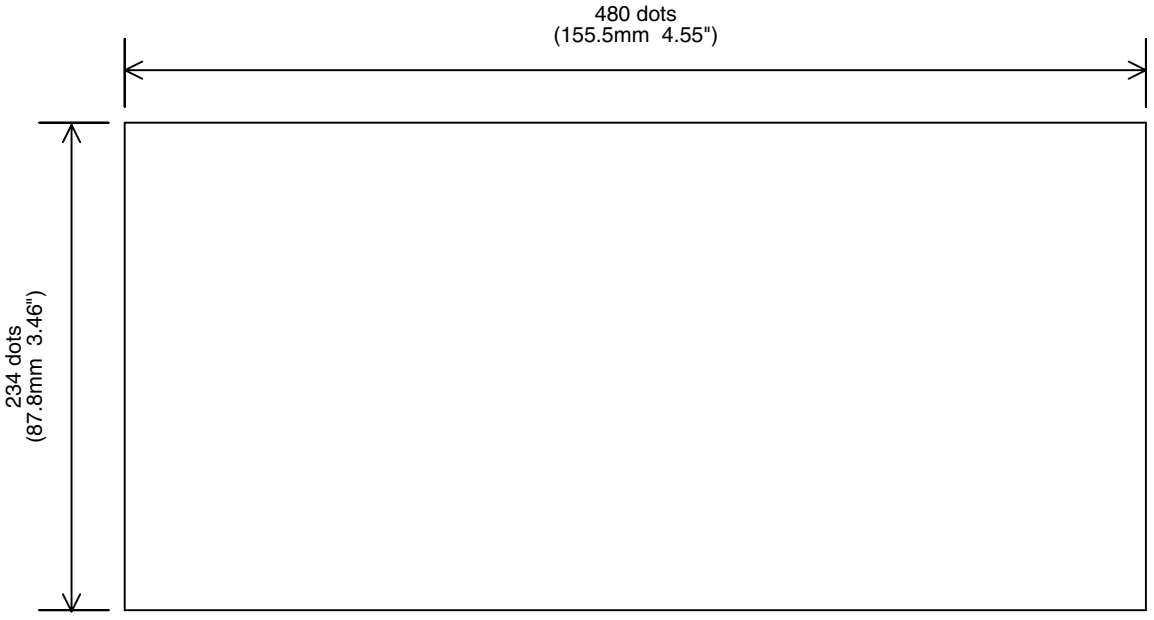
Auxiliary window

When dividing the screen, the functions displayed on the auxiliary window can be selected among the following, and the background color can be set.

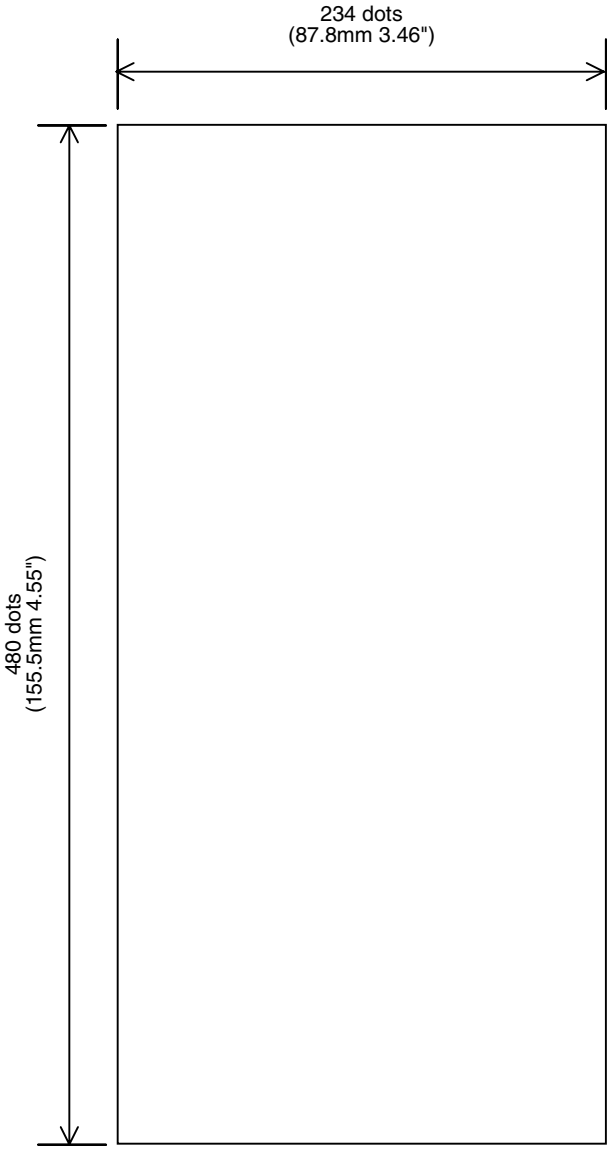


Auxiliary window	Contents of display
Keyboard	According to the change target (Numeric Input or ASCII Input), the decimal, hexadecimal or ASCII keyboard is displayed. The keyboard to be displayed can be selected among system (default) keyboards and custom keyboards created by the user.
Alarm history	The information equivalent to the alarm history in the alarm mode is displayed.
Alarm list	The information equivalent to the alarm list in the alarm mode is displayed.
Alarm Frequency	The information equivalent to the Alarm Frequency in the alarm mode is displayed.
Customized auxiliary screen	Screen components such as ASCII, Numeric Display and Touch Switch similar to those on the main window can be displayed.

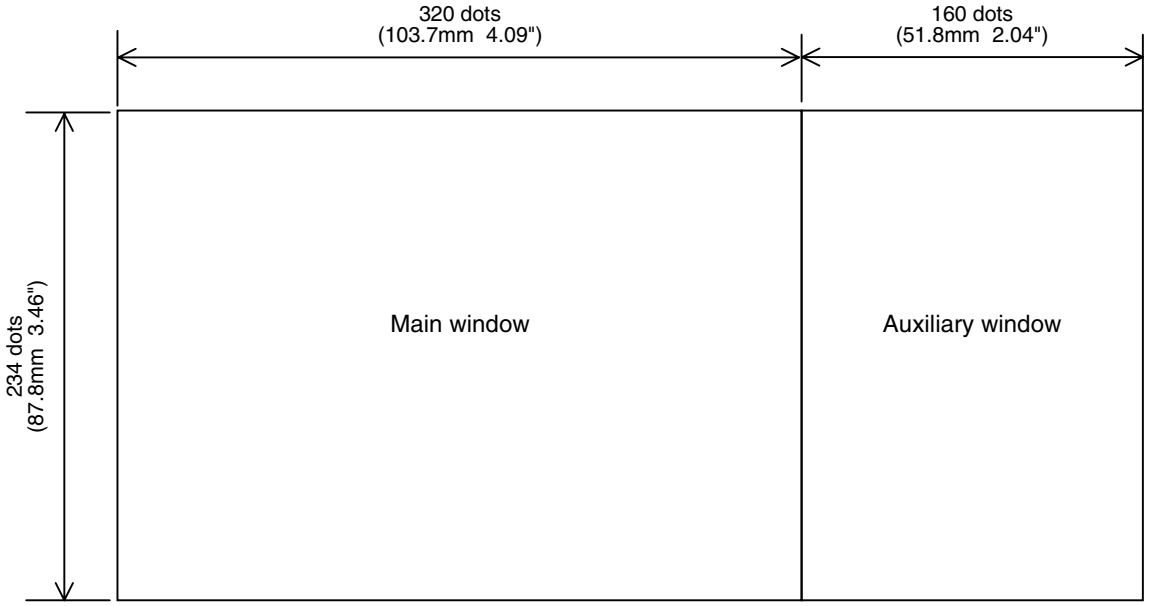
The screen dot pitch is 0.324 (horizontal direction) × 0.375 (vertical direction).
Accordingly, data is displayed vertically in the ratio of approximately "1 : 1.16".



F940WGOT (vertical display)

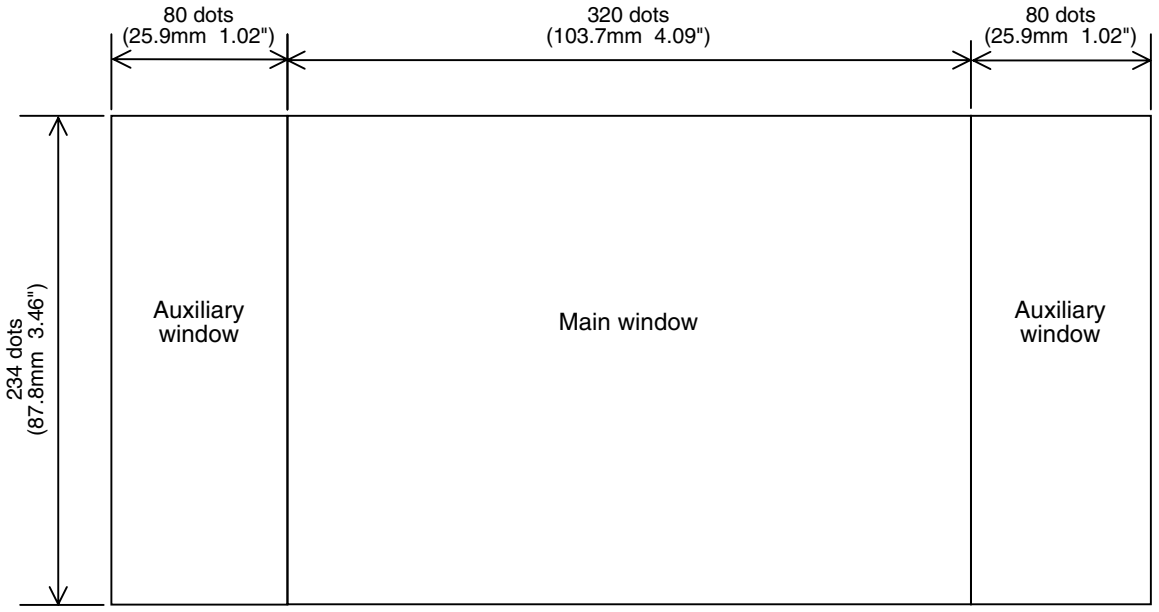


F940WGOT (two-division display)



When the auxiliary window is laid out on the left side of the main window, the number of display dots on the main window and auxiliary window are equivalent to those shown above.

F940WGOT (three-division display)

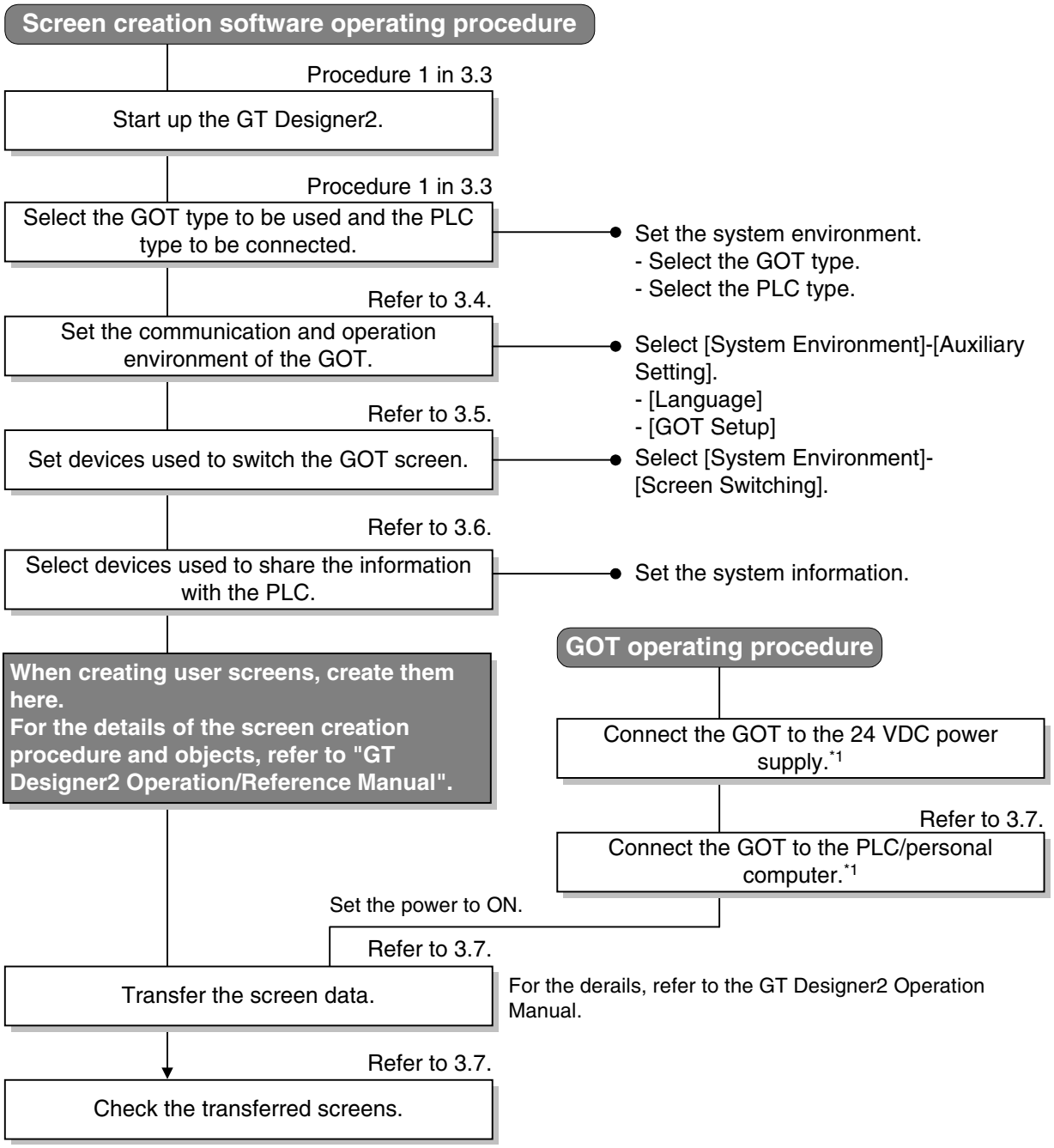


3. Basic Settings Using Screen Creation Software

This chapter explains the basic screen setting procedures using the screen creation software GT Designer2.

3.1 Outline procedure

The flowchart below shows the procedures to start up the screen creation software, execute the basic settings, connect a personal computer to the GOT, and transfer the screen data.



*1 For the details of the connection method and connection cable, refer to "GOT-F900 Series Hardware Manual [Connection]".

3.2 Items allowed to be set by the screen creation software

The setting of the GOT-F900 shown in the table below can be achieved using the screen creation software.

System Environment	Set items
System Setting	GOT Type PLC Type Screen Color
Project Title	Project Title Project ID Comment Creator
Auxiliary Setting	Key Window/Cursor Display Setting Use Serial Port, Setup, Language, Menu Key. Display Format
System Information	Read Device Write device
Screen Switching	Base Screen Overlap Window Uninitialize switching device.
Password	Security Level Password
Key Window	Key Window Setting

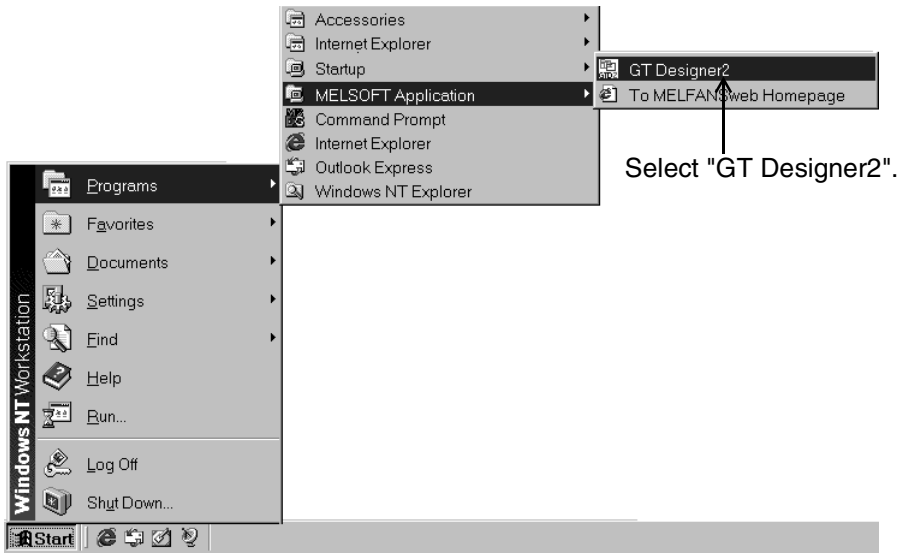
When a check mark (✓) is given to "Use Serial Port, Setup, Language, Menu Key.", setting of the following items becomes valid.
When setting the following items in the GOT, do not give a check mark (✓).
(For the details, refer to Operation 2 in Section 3.4.)

System Environment	Set items	Remarks
GOT Setup	Opening Screen Time Backlight off Time Connection Port, Type, Station No., Buzzer	Set these items according to connected PLC.
Language	System Language Character set Date Format	For built-in fonts, refer to "Introduction".
Menu Key	Key Position	Set these items when changing the system screen call key.
Handy GOT Setting	Grip Switch Setting Momentary Switch Operation Grip Switch LED Operation	Use these items in the Handy GOT type.
Serial Port	Speed Handshaking Parity Data Bit Stop Bit	Set these items only when connecting a printer or microcomputer.

3.3 Starting up the screen creation software

Suppose that the GT Designer2 is installed in the Windows personal computer.
For the details of installation, refer to the "GT Designer2 Operating Manual".

1. Start up the screen creation software.



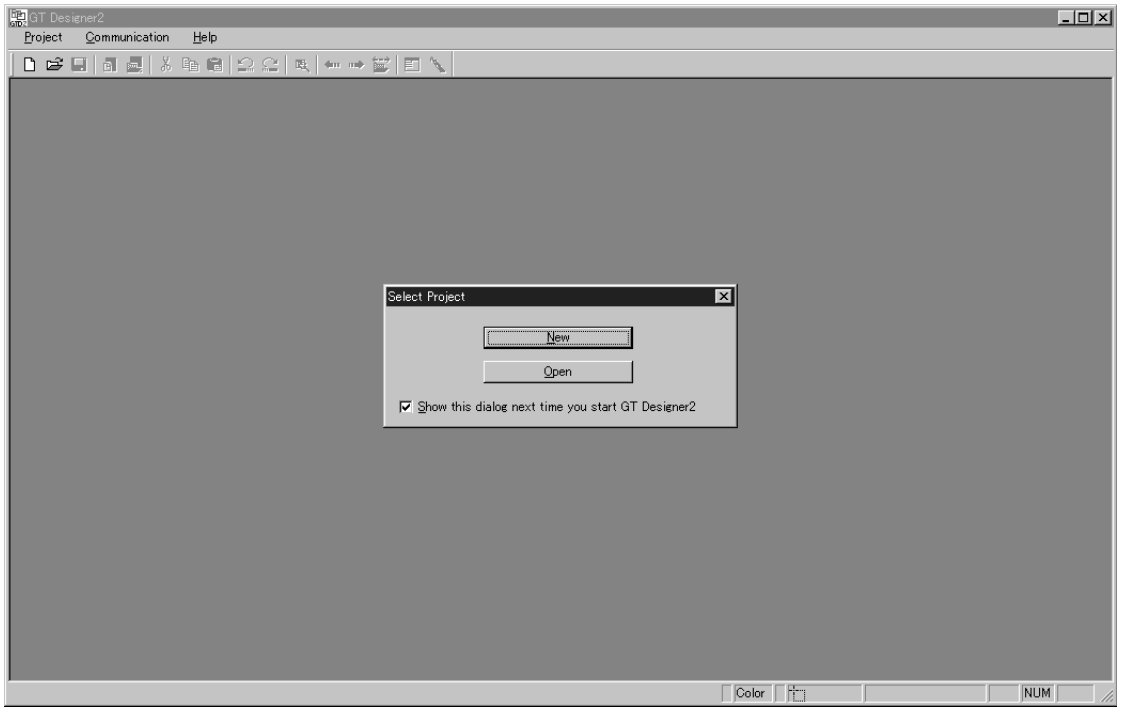
2. Select "New" or "Open".

When reading a saved file

For reading the data created using the GT Designer or DU/WIN, select "Open", then set "File Type" to "GT Designer Files (*GTD)" or "DU-WIN Files (*DUP)".

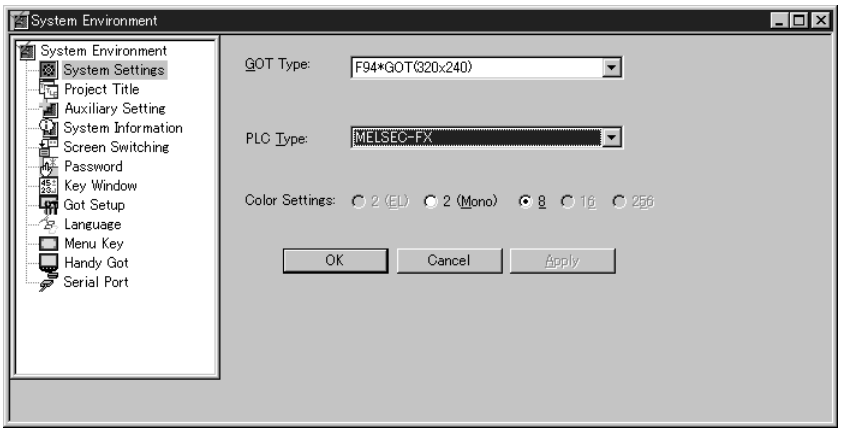
When reading a file from the GOT

Select "New", then select "Communication"-"To/From GOT".



3. Select the GOT type and PLC type, then click [OK].

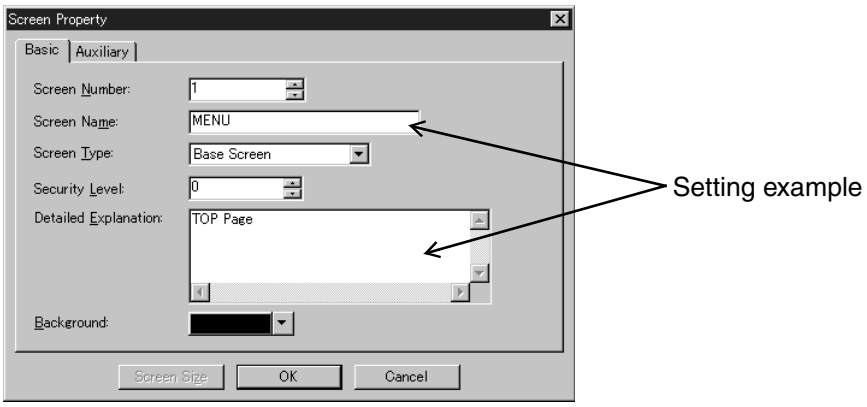
When selecting the GOT type, refer to the table below.



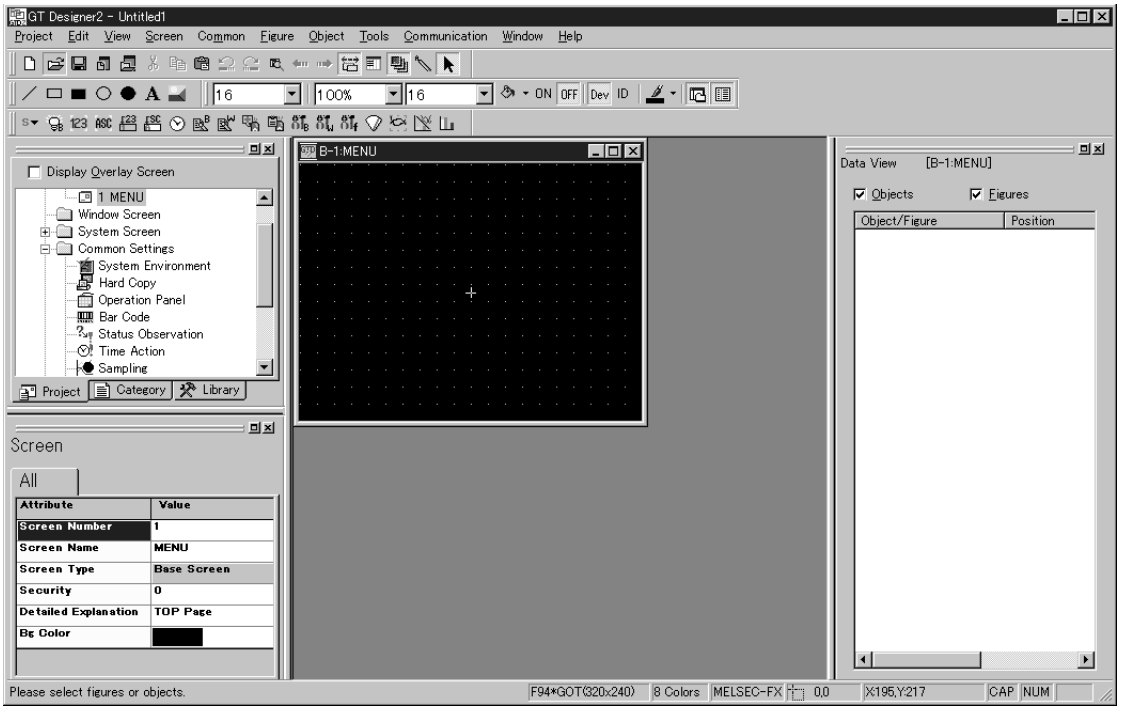
GOT Type	Model name		Remarks
F940WGOT (480×234)	Installed on panel surface	F940WGOT-TWD	For Japan
		F940WGOT-TWD-E,F940WGOT-TWD-C	For overseas
F94*GOT (320×240)	Installed on panel surface	F940GOT-SWD,F940GOT-LWD F943GOT-SWD,F943GOT-LWD	For Japan
		F940GOT-SWD-E,F940GOT-LWD-E F940GOT-SWD-C,F940GOT-LWD-C	For overseas
	Handy type	F940GOT-SBD-H,F940GOT-LBD-H F940GOT-SBD-RH,F940GOT-LBD-RH	For Japan
		F940GOT-SBD-H-E,F940GOT-LBD-H-E F940GOT-SBD-RH-E,F940GOT-LBD-RH-E	For overseas
		F943GOT-SBD-H,F943GOT-LBD-H F943GOT-SBD-RH,F943GOT-LBD-RH	For Japan
		F943GOT-SBD-H-E,F943GOT-LBD-H-E F943GOT-SBD-RH-E,F943GOT-LBD-RH-E	For overseas
F93*GOT (240×80)	Installed on panel surface	F930GOT-BBD-K F930GOT-BWD F933GOT-BWD	For Japan
		F930GOT-BBD-K-E,F930GOT-BBD-K-C F930GOT-BWD-E,F930GOT-BWD-C F930GOT-BWD-T	For overseas
F920GOT (128×64)	Installed on panel surface	F920GOT-BBD-K F920GOT-BBD5-K	For Japan
		F920GOT-BBD-K-E F920GOT-BBD5-K-E F920GOT-BBD-K-C F920GOT-BBD5-K-C	For overseas

4. When "Screen Property" of the base screen 1 is displayed, execute the required settings and click [OK].

Because the properties can be set later, [OK] may be clicked without setting anything.



5. The GT Designer2 is started up, and ready for screen creation.



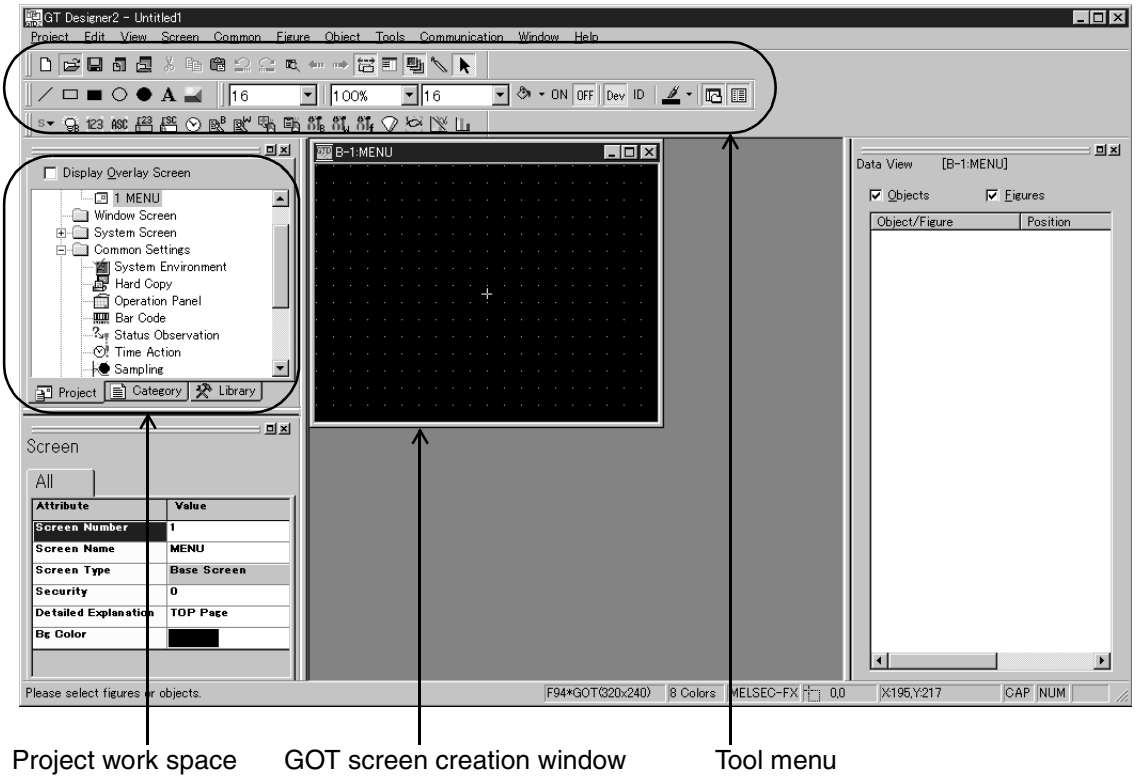
6. Set the communication and operation environment of the GOT.

To Section 3.4

3.4 Communication setting and SET UP MODE of the GOT

Suppose that the GT Designer2 is started up by the procedure described in the preceding section.

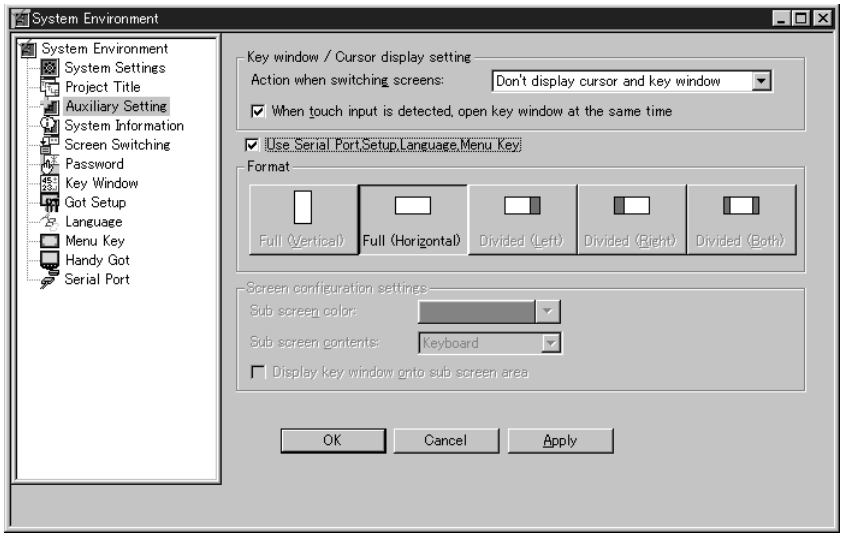
1. Click [Common Settings]-[System Environment] in the project work space.



Project work space GOT screen creation window Tool menu

2. Click [Auxiliary Setting] in the "System Environment" tree.

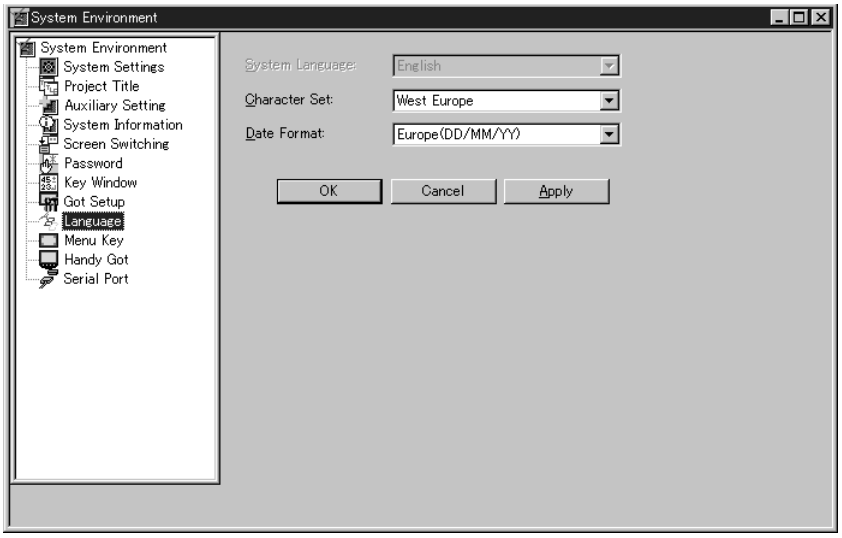
Give a check mark (✓) to "Use Serial Port, Setup, Language, Menu Key."



When a check mark is given, the settings described in the steps 3 to 6 in the next page and later are valid. When setting the contents described in the steps 3 to 6 in the GOT, do not give a check mark. Instead, set the operation environment of the GOT.
(Refer to section 8.4.)

3. Click [Language] in the "System Environment" tree.

Select either language (Japanese or English) to be displayed on the system screen.
In "Character Set", select a font to be displayed on user screens. (Refer to Section 3.9.)



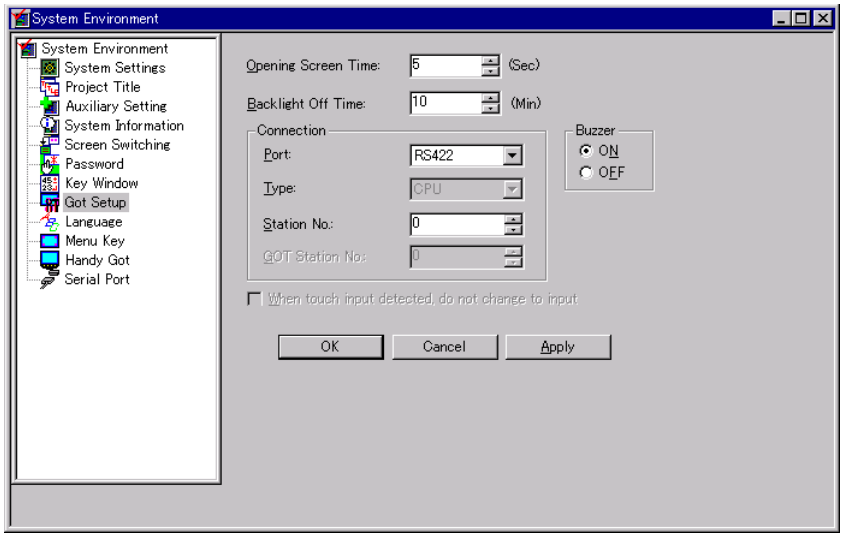
For the "System Language" which corresponds to selected "Character Set" refer to the following table. (GT Designer2 Ver. 1.02C or later)

Character Set	System language		
	Japanese	English	Chinese (Simplified)
Japanese	✓	✓	×
Chinese (Traditional)	×	✓	×
Chinese (Simplified)	×	✓	✓
Western European	×	✓	×
Korean	×	✓	×

This table indicates combinations allowed in the GT Designer2, and does not indicate languages which can be displayed in the GOT-F900 (using built-in fonts).

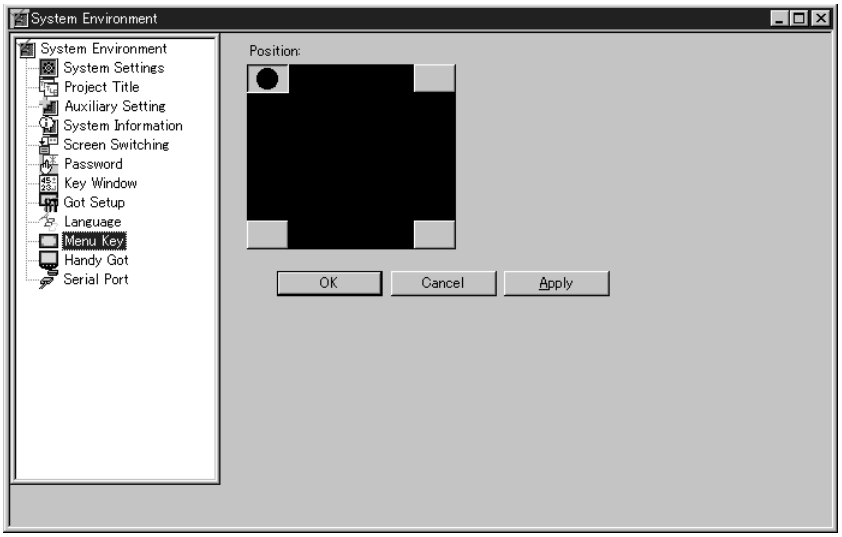
4. Click [GOT Setup] in the "System Environment" tree.

Set "Port" in "Connection" according to the actual equipment connection status.



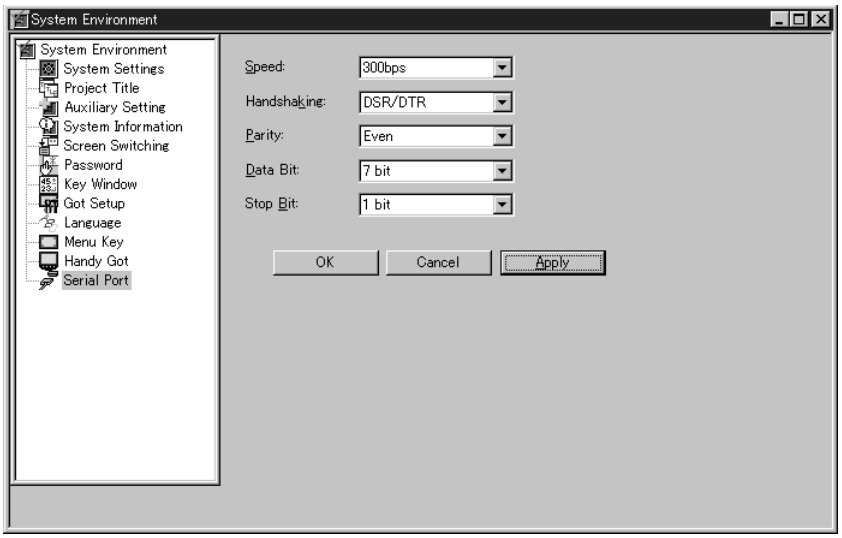
5. Click [Menu Key] in the "System Environment" tree.

Set the keys to call the system menu using the touch switch function of the GOT in the user screen mode.



The initial value is one key at the upper left corner (which is the factory default in the GOT).
One or two keys can be set.
If the menu keys are not set, the system menu cannot be called in the user screen mode.
When the power of the GOT is set to ON while the upper left corner of the screen is pressed and held, the GOT is started up with the system menu.

6. Click [Serial Port] for general-purpose communication (micro computer).



The settings above are required for general-purpose communication (micro computer) or for connecting a printer to the GOT.

7. Set the devices to switch the screen.

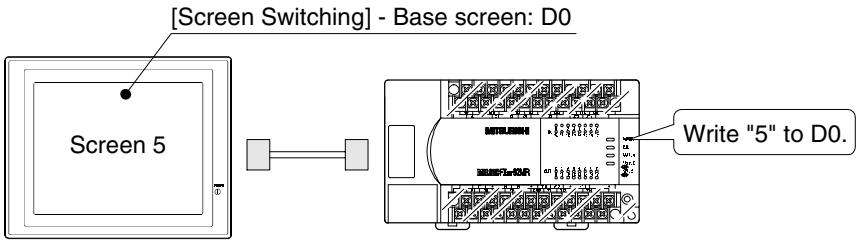
To section 3.5

3.5 Setting the screen switching devices

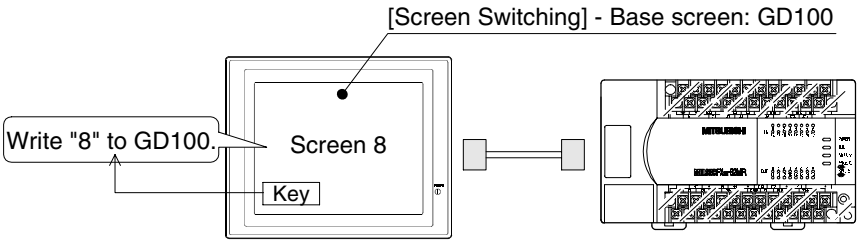
The base screen and overlap windows 1 and 2 displayed on the GOT can be controlled or uncontrolled from the PLC.

1. Confirm the screen switching type.

1) When controlling screen switching from the PLC

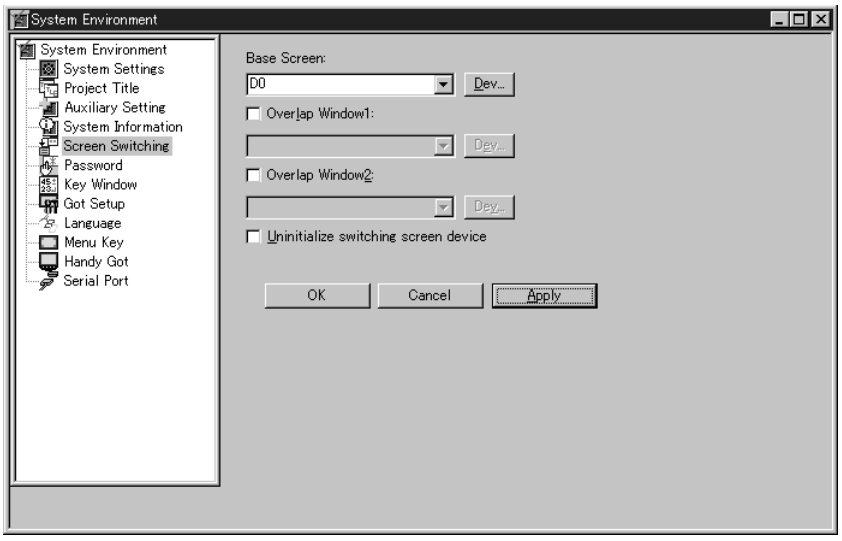


2) When controlling screen switching inside the GOT



2. Click "Screen Switching" in "System Environment".

The initial value "GD100 (device inside the GOT)" is set as the device for "Base Screen". For controlling screen switching from the PLC, specify a device of the PLC such as "D0". Make sure that devices set here are not used for controlling the machine.



When switching the screen using a device inside the GOT

Specify a device (GD100 to GD1023) inside the GOT.

When overlapping the screen

Give a check mark ( ) to "Overlap Window 1" and "Overlap Window 2", then specify a device for each window.

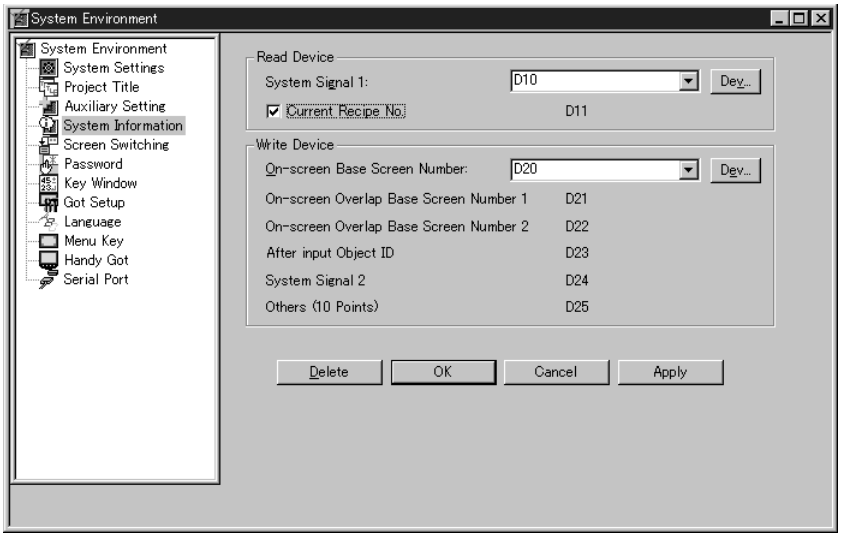
3. Set the system information.

To Section 3.6

3.6 Setting the system information

For giving the instruction from the PLC to turn off the backlight of the GOT and for monitoring the status information from the PLC such as the No. of the displayed screen and battery drop warning of the GOT, "Read Device" and "Write Device" should be set.

1. Click "System Information" in "System Environment".



Caution

Make sure that devices set here are not used for controlling the machine.

3.6.1 Functions of the system information (GT Designer2)

System information devices are classified into read devices and write devices as shown below. Specify word devices for the system information.

1) Read device (GOT ← PLC)
One word device (16 bits) or two word devices (when using the recipe function) are occupied. (Read devices are not set in the factory.)
[When the data register D10 is assigned]

Data register		Function	Contents of control
System signal 1			
D10	b0*2	Alarm history clear	ON : Clears the history of the alarm history function. OFF : Does not clear the history of the alarm history function.
	b1	Backlight OFF	ON : Turns the baclkight to OFF after the preset backlight off period of time. OFF : Always keeps ON the backlight.
	b2*2*3	Sampling data clear	OFF → ON: Clears the sampling data of the sampling function. ON → OFF: Does not clear the sampling data.
	b3	Reserved	Not used
	b4	Reserved	Not used
	b5*2	Bar code input invalid	ON : Makes invalid the bar code function. OFF : Makes valid the bar code function.
	b6*2	Bar code input completion flag reset	ON : Sets to OFF the "bar code input signal (system signal 2)". OFF : Does not set to OFF the "bar code input signal (system signal 2)". Sets to OFF the b5 of the write device D☐+4 (system signal 2) which has completed writing of the input data of the bar code reader to a device.
	b7	Reserved	Not used
	b8*2	Entry code input request*1	ON : Displays automatically the entry code input window when the current screen is switched to a screen at higher security level. OFF : Does not display automatically the entry code input window.
	b9	Reserved	Not used
	b10	Keypad information valid signal 1	[Only in the F920GOT-K and F930GOT-K] ON : Writes the information on pressing of the keypad to the write devices D☐+5 and D☐+6. OFF : Does not write such information.
	b11	Keypad information valid signal 2	[Only in the F920GOT-K] (For the details, refer to Section 7.5.) ON : Writes information to the write devices D☐+5 and D☐+6 when the key pad status is changed or when a scan processing is executed inside the GOT. OFF : Writes information to the write devices D☐+5 and D☐+6 when the key pad status is changed. [Only in the F930GOT-K] (For the details, refer to Section 7.5.) ON : Writes the information to the write devices D☐+5 and D☐+6 when the key pad status is changed and in a constant cycle (about 1 sec). OFF : Writes the information to the write devices D☐+5 and D☐+6 when the key pad status is changed.
	b12 to b15	Reserved	Not used
Used recipe No.			
D11		Recipe	Specify the recipe No. (No. 1 or later) to be transferred to the PLC by the recipe function. Specify a desired recipe file No. created using the GT Designer2 subtracted by "1". Example: When transferring the recipe file No. 5, write "4 (= 5-1)".

*1 In the F920GOT-K, the entry code input window is displayed automatically without regard to the system information status.
*2 It is not available in the F920GOT-K.
*3 It is not available in the F930GOT, F933GOT and F930GOT-K.

2) Write devices (GOT → PLC)
Fifteen word devices (16 bits) are occupied. (Write devices are not set in the factory.)
[When the data register D20 is assigned]

Data register		Function	Contents of control
Displayed base screen			
D20		User Screen Mode	Stores the No. of the screens currently displayed. D20: Stores the No. of the screen currently displayed.
Overlap window 1			
D21		User Screen Mode	Stores the No. of the screens currently displayed. D21: Stores the No. of the second screen when two or more screens are overlapped (overlap window 1).
Overlap window 2			
D22		User Screen Mode	Stores the No. of screens currently displayed. D22: Stores the No. of the third screen when three or more screens are overlapped (overlap window 2).
Input completion object ID			
D23		Numeric input, ASCII input	D23: User ID of an object whose input is completed.
System signal 2			
D24	b0	Alarm device ON confirmation	ON : Indicates that either one among devices assigned in the alarm function is ON. OFF : Indicates that either one among devices assigned in the alarm function is OFF.
	b1*1*2	Sampling function under-execution ON signal	ON : Indicates that the device value of the sampling function is being sampled. OFF : Indicates that the device value of the sampling function is not being sampled.
	b2	Numeric Input/ ASCII Input	ON : Indicates that the input value is determined in the Numeric Input function. OFF : Indicates that the input value is not determined in the Numeric Input function.
	b3*1	Battery voltage drop detection	ON : Indicates that the battery voltage of the GOT has dropped. (It is recommended to replace the battery within 1 month after this bit turns ON.) OFF : Indicates that the battery voltage is normal.
	b4	Handy GOT grip switch pressing	ON : Indicates that the grip switch of the F94*Handy GOT (except the RH model) is pressed. OFF : Indicates that the grip switch of the F94*Handy GOT is not pressed.

Data register		Function	Contents of control
D24	b5*1	Bar code input completion	ON : Indicates that the data read by the bar code reader is stored in a specified device. OFF : Indicates that the data is not read by the bar code reader. The timing at which the data read by the bar code reader is stored in the PLC CPU can be checked using this signal. (When b6 of the read device D□+0 is set to ON, this bit turns OFF.)
	b6	Reserved	Not used
	b7	Reserved	Not used
	b8	Numeric Input/ ASCII Input data under-change confirmation signal	ON : Indicates that data is being changed in the Numeric Input or ASCII Input function. OFF : Indicates that data is not being changed in the Numeric Input or ASCII Input function.
	b9	Keypad information signal 1	[Only in the F920GOT-K and F930GOT-K] ON : Indicates that the cursor is displayed in the Alarm List Display or Alarm History Display. OFF : Indicates that the cursor is not displayed in the Alarm List Display or Alarm History Display.
	b10	Keypad information signal 2	[Only in the F920GOT-K and F930GOT-K] ON : Indicates that the backlight is ON. OFF : Indicates that the backlight is OFF.
	b11 to b15	Reserved	Not used
Others (10 points)			
D25 to D26		Keypad information	[Only in the F920GOT-K and F930GOT-K] When a key on the keypad is pressed, a corresponding bit turns ON. Futher information can be found in section 7.5.
D27 to D34		Reserved	Unused (These devices can be used as general word devices on user program in PLC.)

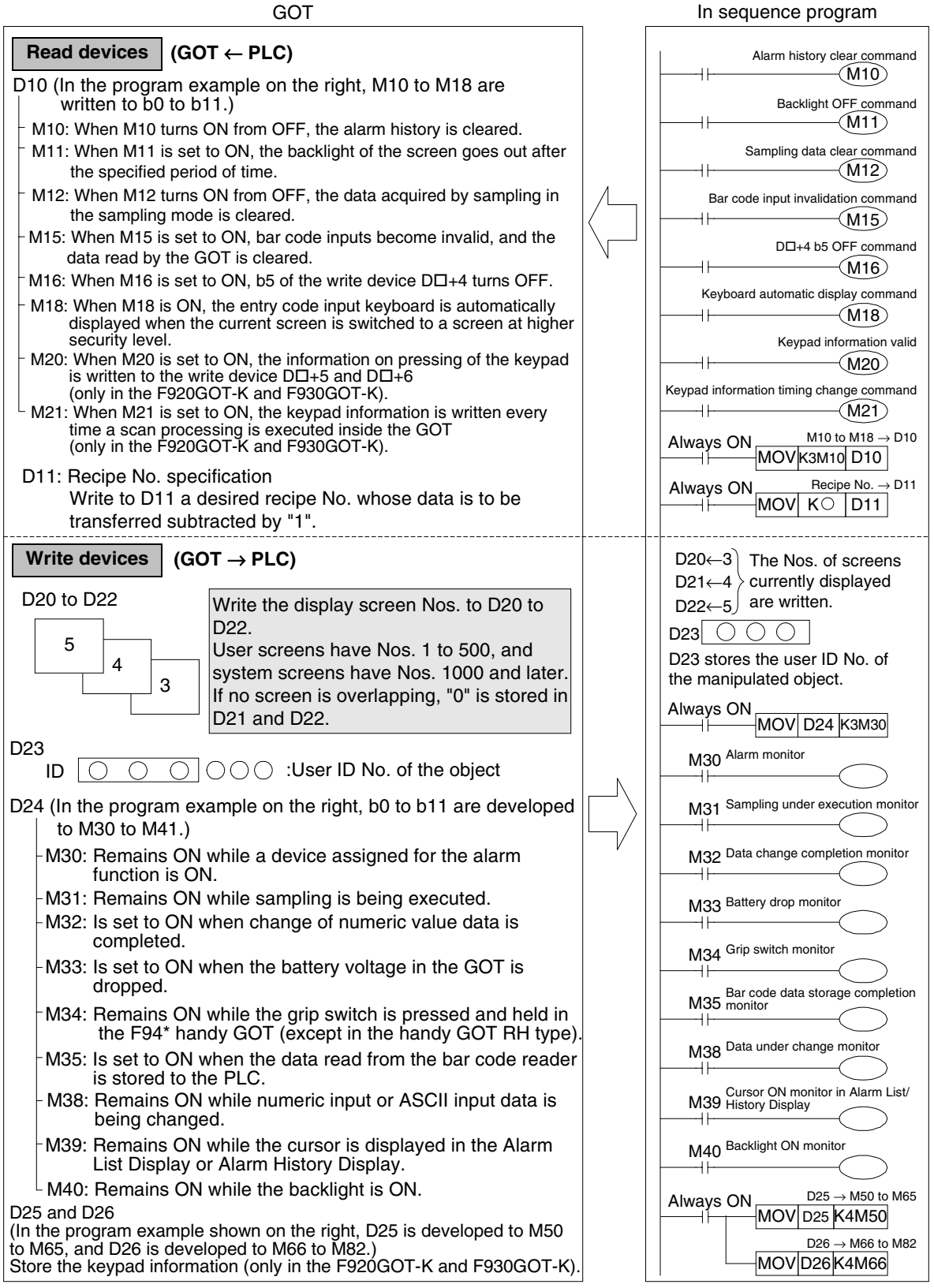
*1 It is not available in the F920GOT-K.

*2 It is not available in the F930GOT, F933GOT and F930GOT-K.

3.6.2 Relationship to sequence program

Operations are explained below for the system information devices assigned in the previous page.

When the following devices are assigned; Read devices : D10
Write devices : D20



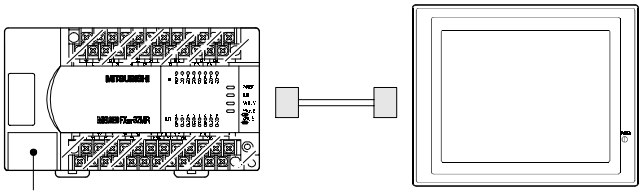
3.7 Preparation of the GOT (connection to the PLC and transfer of the screen data)

1. Connect the power supply to the GOT.

For the connection, refer to the "GOT-F900 Series Hardware Manual [Connection]".

2. Connect the PLC to the GOT with a communication cable.

For the connection, refer to the "GOT-F900 Series Hardware Manual [Connection]".



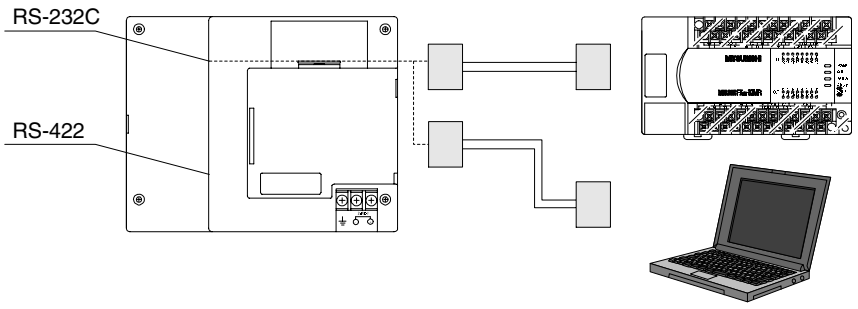
Connection examples with the FX Series PLC via the RS-422

FX Series PLC	Destination connector	Communication specifications	Communication cable
FX1S/1N Series	Connector for peripheral equipment	RS-422	FX-50DU-CAB0 (3m (9' 10")) FX-50DU-CAB0-☐M ("☐" is an either number among 1, 10, 20 and 30.)
	FX1N-422BD		
FX0N Series	Connector for peripheral equipment	RS-422	
FX2N Series	Connector for peripheral equipment	RS-422	
	FX2N-422BD		
FX2NC Series	Connector for peripheral equipment	RS-422	

Caution

When using the RS-232C connector in the same way as the connected equipment, do not execute connection here.

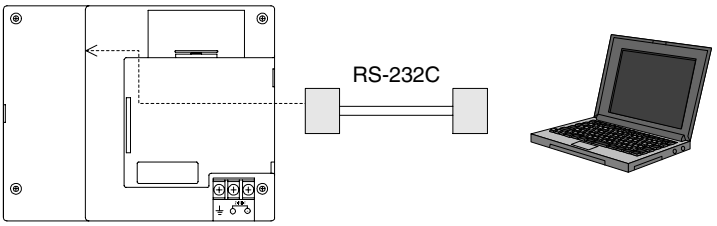
Example: In the case of F940GOT (rear face)



3. Connect the personal computer to the GOT with a communication cable.

Connect the cable to the RS-232C connector both in the GOT and personal computer.

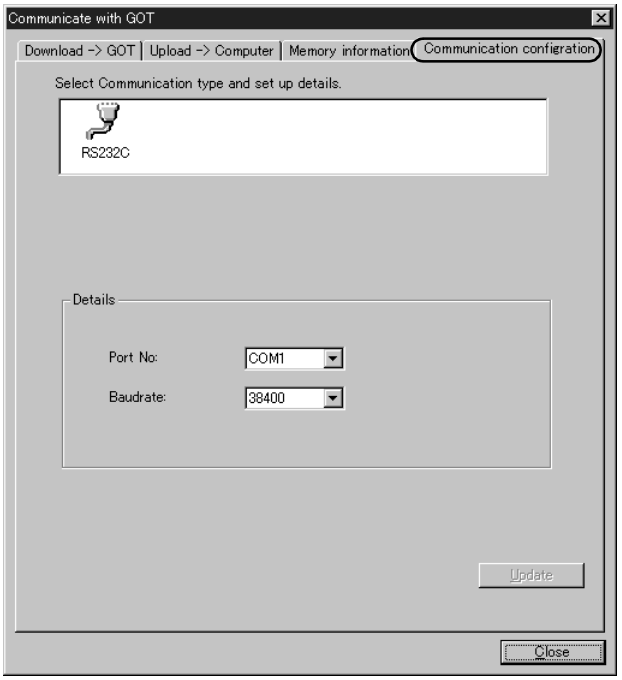
In the case of F940GOT (rear face)
For the connection, refer to the "GOT-F900 Series Hardware Manual [Connection]".



Connection cable (RS-232C)	Connector shape in personal computer
FX-232CAB-1	9-pin D-Sub, male
FX-232CAB-2	Half-pitch, 14-pin
F2-232CAB-1	25-pin D-Sub, female

4. Select the communication port of the personal computer connected to the GOT.

Select "Communication"-"To/From GOT" from the tool menu, then select the [Communication Configuration] tab.
The port Nos. are assigned to COM1, etc. according to the number of ports in the RS-232C interface in the personal computer.

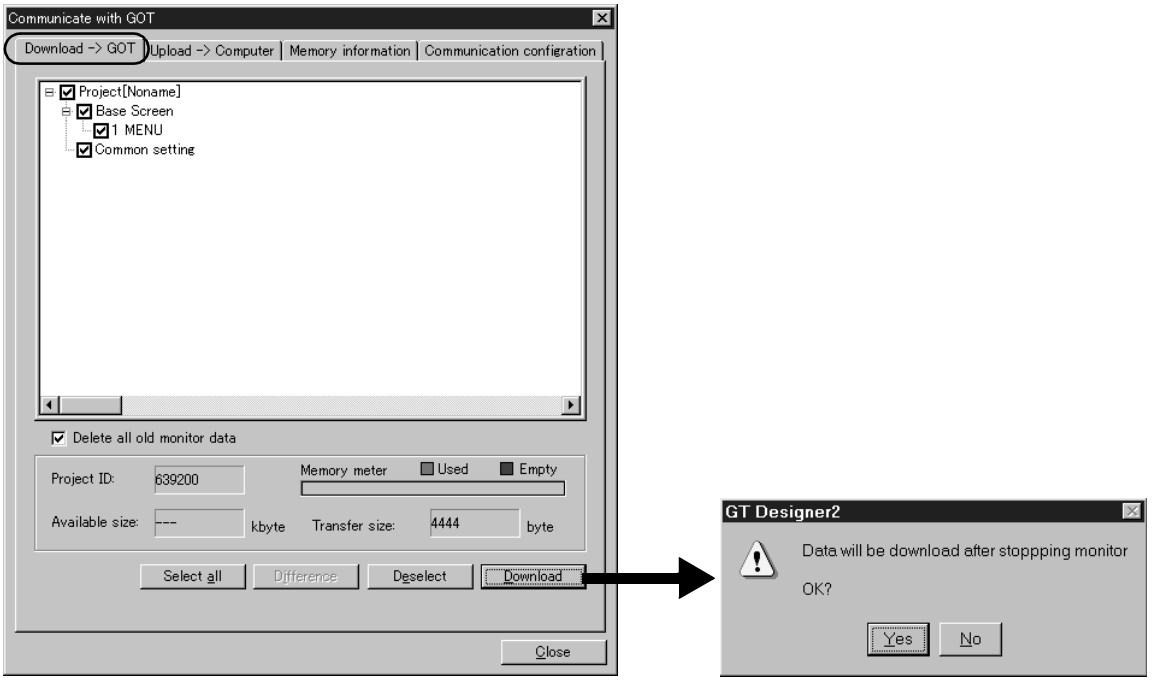


Reference

If the communication condition is bad and transfer is disabled, set the baud rate to a smaller value.

5. Write (download) the system environment settings and screen data to the GOT.

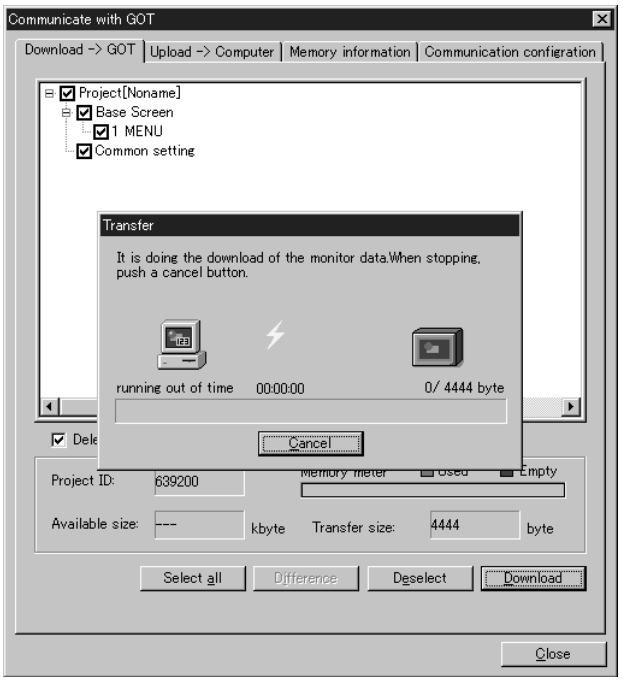
Select the [Download → GOT] tab.
Select the screen No. to be transferred, then click [Download].



6. The confirmation dialog box (shown above) is displayed.

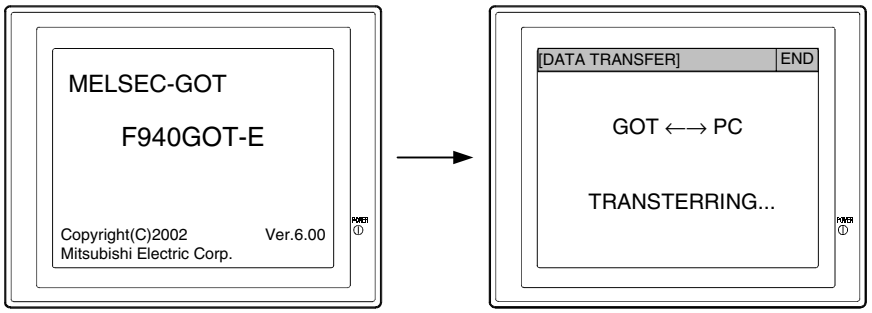
When write should be executed, click [Yes].

7. Write is executed.



8. The GOT screen is switched to the transfer mode screen.

Example in the F940GOT-SWD-E



Caution: When the GOT does not become the transfer mode

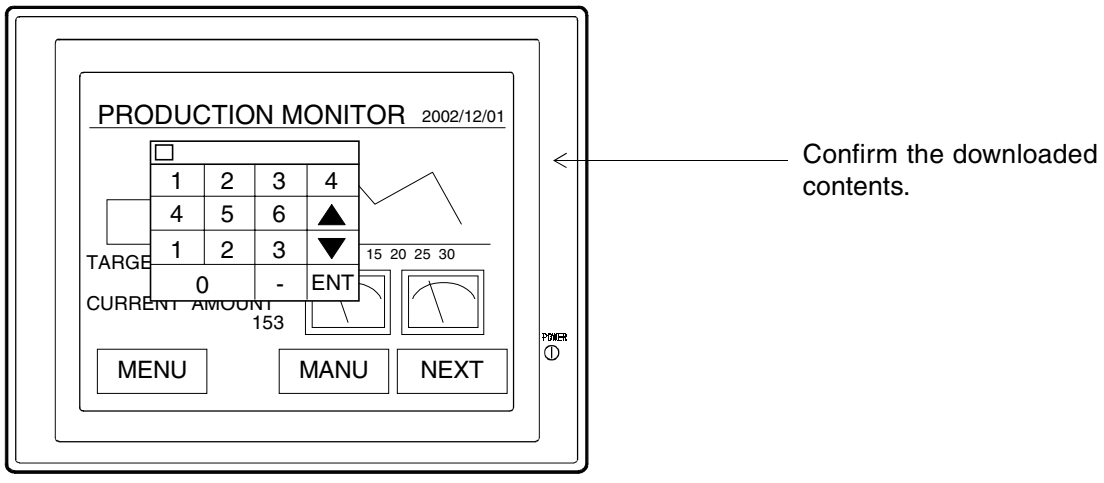
If the RS-232 port in the GOT has been set for RS-232C connection with the PLC (micro computer) or for connection with the printer or bar code reader, automatic changeover to the transfer mode is not executed, but a communication error occurs.
In such a case, select [SELECT MODE]-[OTHER MODE]-[DATA TRANSFER], then execute write (download).

9. The transferred screen data is displayed on the GOT.

10. Check the screen data in the GOT.

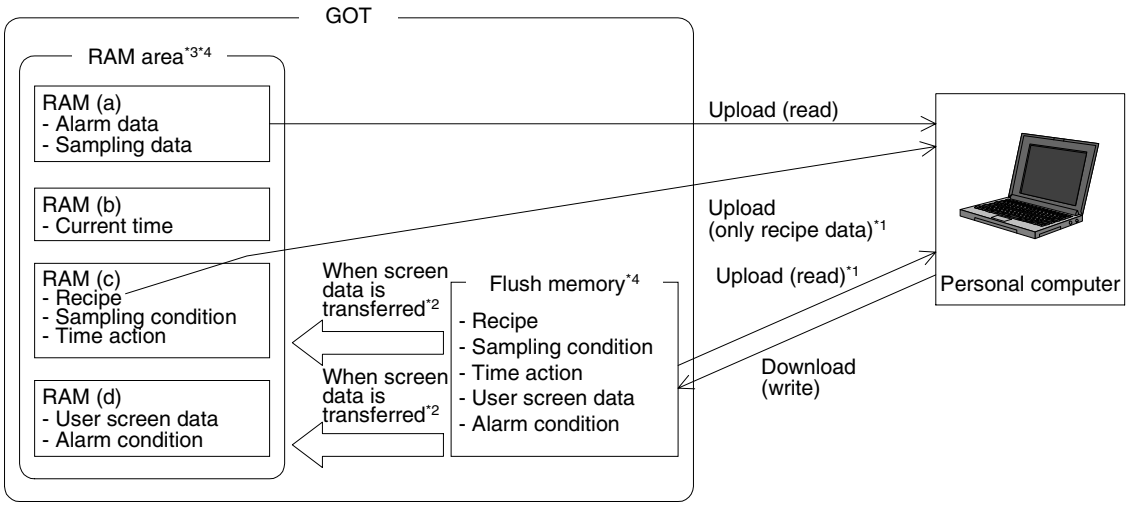
(If screen data has not been created yet, check only communication with the PLC.)

1) Confirm that there are no errors in the created data using the "Screen List" function.
   → Select [SELECT MODE]-[TEST MODE]-[USER SCREEN] in the GOT. (Refer to Section 12.2.)
2) Connect the PLC, and confirm the displayed contents by switching and monitoring the screens.
3) If a communication error has occurred, confirm the contents of the error using the "COMMUNICATION MONITOR" function. (F94□GOT and Handy GOT)
   → Select [SELECT MODE]-[TEST MODE]-[COMMUNICATION MONITOR] in the GOT. (Refer to Section 12.5.)
4) Check communication with the PLC using the "DEVICE MONITOR" function.
   → Select [SELECT MODE]-[HPP MODE]-[DEVICE MONITOR] in the GOT. (Refer to Section 9.5.)



3.8 Saving destination and backup of the created data

The following data are saved in the RAMs and flush memory built in the GOT.
The data (such as screen data) stored in the flash memory is kept held even if the battery voltage becomes low.



*1 The recipe data is read from the RAM (C) area in the following versions.
In any GOT unit former than the following versions, the recipe data is read from the built-in flush memory.

Applicable GOT and OS version

Model	Availability (OS version)	Model	Availability (OS version)
F920GOT-K	✓	F940GOT	✓(Ver. 6.30~)
F930GOT-K	✓	F940WGOT	✓(Ver. 1.30~)
F930GOT	✓(Ver. 4.30~)	Handy GOT	✓(Ver. 6.30~)

✓: Setting is enabled. If applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

*2 When the screen data is downloaded (written) from the personal computer, the flush memory, RAM (c) and RAM (d) inside the GOT are updated.
If the data stored in the built-in RAM area is deleted or unstable due to drop of the battery voltage, the GOT restores the built-in RAM area with the following contents when the power is set to ON.

1) RAM (a) area
The alarm data and sampling data are initialized. (The existing alarm data and sampling data are cleared.)
2) RAM (b) area
The current time data is initialized. Accordingly, set the current time again in the GOT.
3) RAM (c) area
All setting data including the recipe, sampling condition, time action and SET UP MODE are restored by the flush memory.
However, if the setting data above are not stored in the flush memory, the initial values in the GOT are adopted.
4) RAM (d) area
All setting data including the user screen data and alarm condition are restored by the flush memory.

*3 In the F920GOT-K, the RAM area is changed into the EEPROM area.

*4 The setting data saved in the RAM (a), RAM (b), RAM (c) and flush memory may not be available depending on the support function in each GOT.

Cautions on use

1) Effect given when the battery voltage is dropped or when the GOT is used without any battery
   When the SET UP MODE is executed in "SET-UP MODE" in the GOT, the contents are saved in the RAM (c).
   If the battery voltage is dropped, the saved setting data may be deleted or unstable, and communication with the PLC may be disabled. To cope with this, it is recommended to set the operation environment using the screen creation software.
   Because the F920GOT-K has built-in EEPROM, there is no fear that data may be deleted caused by dropped battery voltage. (The number of times of overwriting the EEPROM is 10,000.)

2) When the SET UP MODE is changed in the GOT
   The operation environment can be set in the GOT (which is saved in the RAM (c)) or the screen creation software (which is transferred and saved in the flush memory), and the contents set later are adopted.
   As described in "Effect given when the battery voltage is dropped" above, it is recommended to set the operation environment using the screen creation software.

3.9 Personal computer environment of PC to input multiple language and GOT

This section explains differences between the configuration to create GOT-F900 screens in each language and the Windows environment.
In the Windows XP and Windows 2000, each language can be input in the GT Designer2 by using the multiple language function of the Windows.

3.9.1 Using Windows XP and Windows 2000

By using the multi-language function of the Windows, languages such as Chinese and Korean can be input on the Windows in the English version.
(Languages not supported by the used Windows cannot be input.)

1) Screen creation condition

   a) Applicable Windows languages

   Windows XP and Windows 2000 Professional in each language version

   b) Applicable GT Designer2 versions

   Ver. 1.01B or later (produced in April, 2003 or later)
   In a version former than the above, the Windows in the desired language version is required.

   c) Applicable GOT-F900 Series models

   GOT models having the built-in font of the language to be displayed
   Built-in fonts vary depending on each model. Accordingly, select a model corresponding to the language to be used.
   For the details, refer to "Fonts built in the display unit (list of Japanese-oriented and overseas-oriented products)" in "Introduction".

2) Combinations of the screen creation software and the Windows
   The screen creation software GT Designer2 in the Japanese and English versions allows to create screens in each language.

Desired language (Character Set)	Description
Japanese	GT Designer2 type / Windows (OS) type: GT Designer2 in Japanese version — Windows in Japanese version GT Designer2 in English version — Windows in each language version except Japanese
English	
Chinese (Traditional)	
Chinese (Simplified)	
Korean	
Western European	

3.9.2 Using Windows 98, Windows NT4.0 and Windows Me

When the desired language is not Japanese, screens can be created by combining the GT Designer2 (English version) and the Windows in each language version.
When the desired language is Japanese, screens can be created by combining the GT Designer2 (Japanese version) and the Windows in the Japanese version.

1) Screen creation condition

   a) Applicable Windows languages

      The Windows in the desired language version is required.

   b) Applicable GT Designer2 versions

      Ver. 1.00A (first article) or later

   c) Applicable GOT-F900 Series models

      GOT models having the built-in font of the language to be displayed
      Built-in fonts vary depending on each model. Accordingly, select a model corresponding to the language to be used.
      For the details, refer to "Fonts built in the display unit (list of Japanese-oriented and overseas-oriented products)" in "Introduction".

2) Combinations of the screen creation software and the Windows

   When displaying screens in any language other than Japanese, use the screen creation software GT Designer2 in the English version.
   When displaying screens in Japanese, use the Japanese version.

Desired language (Character Set)	GT Designer2 type	Windows (OS) type
Japanese	GT Designer2 in Japanese version	Windows in Japanese version
English	GT Designer2 in English version	Windows in English version
Chinese (Traditional)	GT Designer2 in English version	Windows in Chinese version
Chinese (Simplified)	GT Designer2 in English version	Windows in Chinese version
Korean	GT Designer2 in English version	Windows in Korean version
Western European	GT Designer2 in English version	Windows in each European language version

3.9.3 Screen creation procedure (outline)

1) Change the setting of "Character Set" in the GOT-F900 to a desired language.

   a) When setting using the GT Designer2

      Select [Common Settings]-[System Environment].
      Click "Auxiliary Setting" in the tree, and set the check mark "✓" at "Use Serial Port, Setup, Language, Open Key Windows at the same time" check box.
      Click "Language" in the tree, and set a desired language.

   b) When setting using the GOT-F900

      Set to OFF the power. While pressing and holding the upper left corner of the screen, set to ON the power.
      Display the system screen "LANGUAGE". Set "CHARACTER SET" to a desired language.

2) Input characters using the language input function of the Windows.
   The Windows XP and Windows 2000 have the language switching function for character input.
   For the details, refer to the GT Designer2 Operation Manual.

3.9.4 Cautions on use

1) Language which can be displayed on one screen or one unit (project)
   In the GOT-F900 Series, languages having different character sets cannot be displayed at the same time.
   Only one language (character set) can be selected in one unit (project).
   For example, both "to display Chinese on the screen No. 1, and display Korean on the screen No. 2" and "to display Chinese and Korean on the screen No. 3" are not allowed.
2) Languages (fonts) built in the GOT-F900
   Built-in fonts vary depending on each model. Accordingly, select a model corresponding to the language to be used.
   For the details, refer to "Fonts built in the display unit (list of Japanese-oriented and overseas-oriented products" in "Introduction".

MEMO

4. User Screen Mode

This chapter explains the user screen mode in which user screens are displayed.
The outline of screens which can be displayed and the operations in the user screen mode are described.

Cautions on use

- Do not change a program in the PLC from two or more peripheral equipment (such as programming tool and GOT) at the same time.
  If a program is changed from two or more equipment at the same time, the program may be destroyed or malfunction.
- Do not use the GOT while its backlight is worn out.
  If the GOT is used in such a status, touch switches may be operated incorrectly, and an accident may be caused.
  When the backlight of the GOT is worn out, the display area is completely dark and the monitor screen cannot be seen. However, touch switch inputs remain valid.
  If the operator misunderstands the backlight worn-out status as the backlight OFF status and touches the display area, touch switches may operate.
  If the backlight is worn out, the following phenomenon occurs in the GOT.
  - Though the backlight OFF function is not set, the monitor screen blacks out.
  - When the backlight OFF function is set, even if the display area is touched while the monitor screen is black, the monitor screen does not appear.

Cautions on use

- Thoroughly read the manual and sufficiently confirm the safety before changing the data or setting bit devices to ON or OFF.
  Erroneous operation may damage the machine and cause accidents.
- While two or more peripheral equipment (such as programming tool and GOT) are used, change a program in the PLC from only one peripheral equipment.
  And after changing a program from one peripheral equipment, display or read the program again in other peripheral equipment.
  If a program in the PLC is changed carelessly from two or more peripheral equipment at the same time, the contents of the program may become inconsistent among connected peripheral equipment. And if a program or the set value of a timer or counter is changed, the PLC may execute unexpected operation.

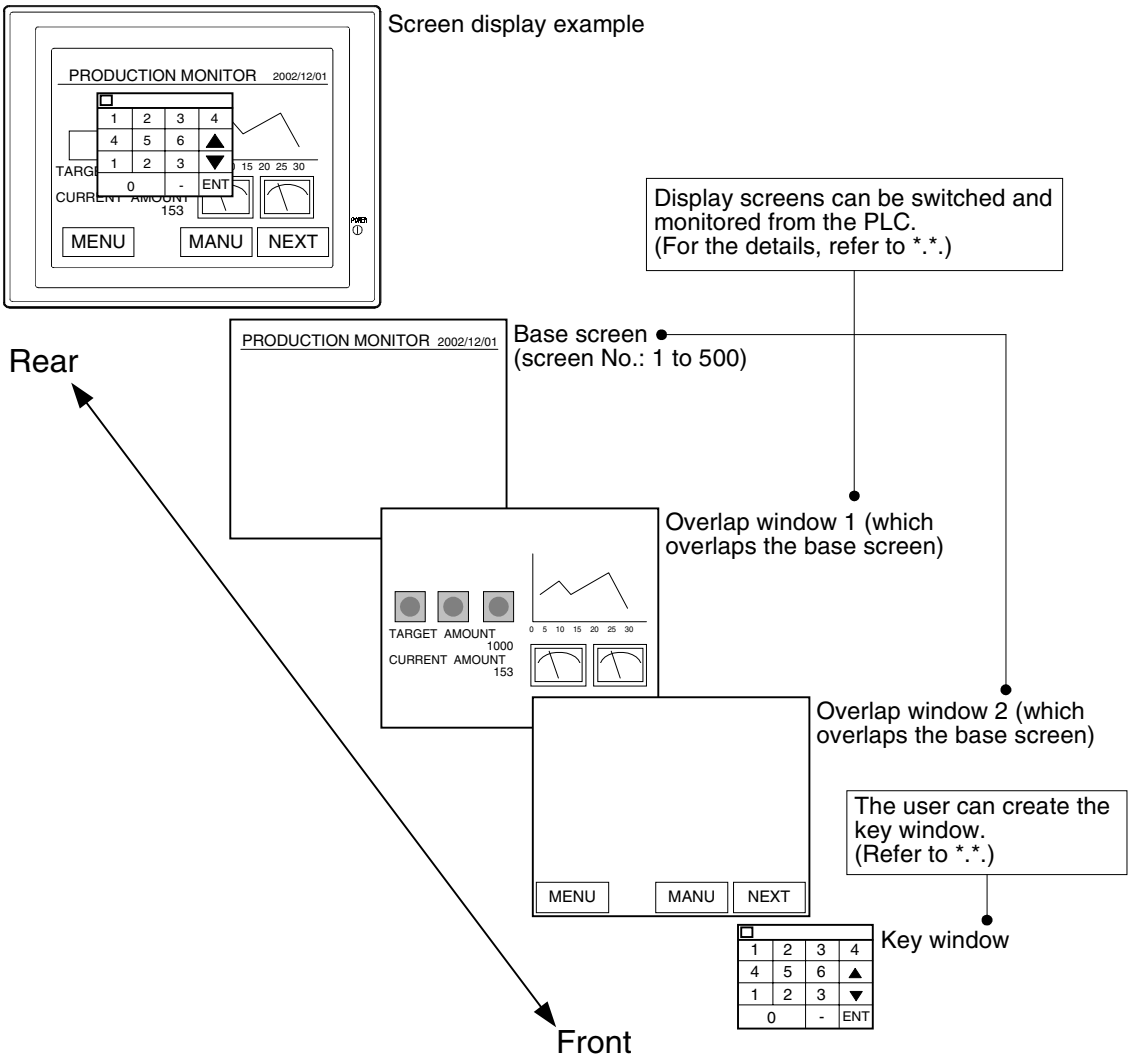
4.1 Outline

Screens are classified into two types, user screens and system screens. This chapter explains user screens displayed in the user screen mode.

4.1.1 User screen type

In the user screen mode, two or more screens created by the user using the screen creation software are overlapped and switched.

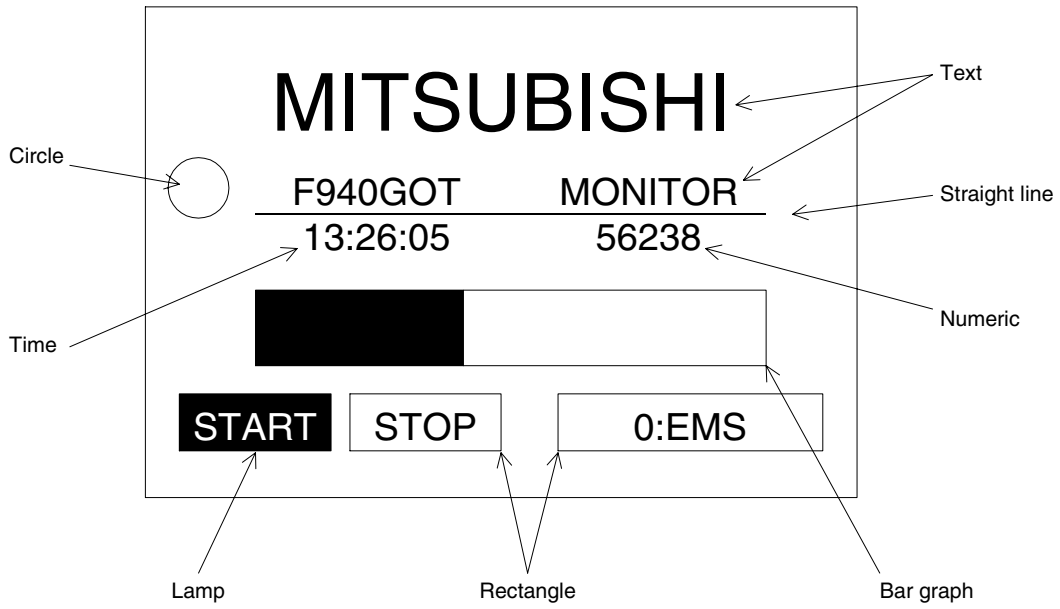
1) Base screen
   The base screen is switched from a touch switch in the GOT or from the PLC.
2) Overlap window
   Overlap windows overlap the base screen.
3) Key window
   When a numeric input or ASCII input is touched, the ten-key board are automatically displayed. (Or the user can create the key window.)



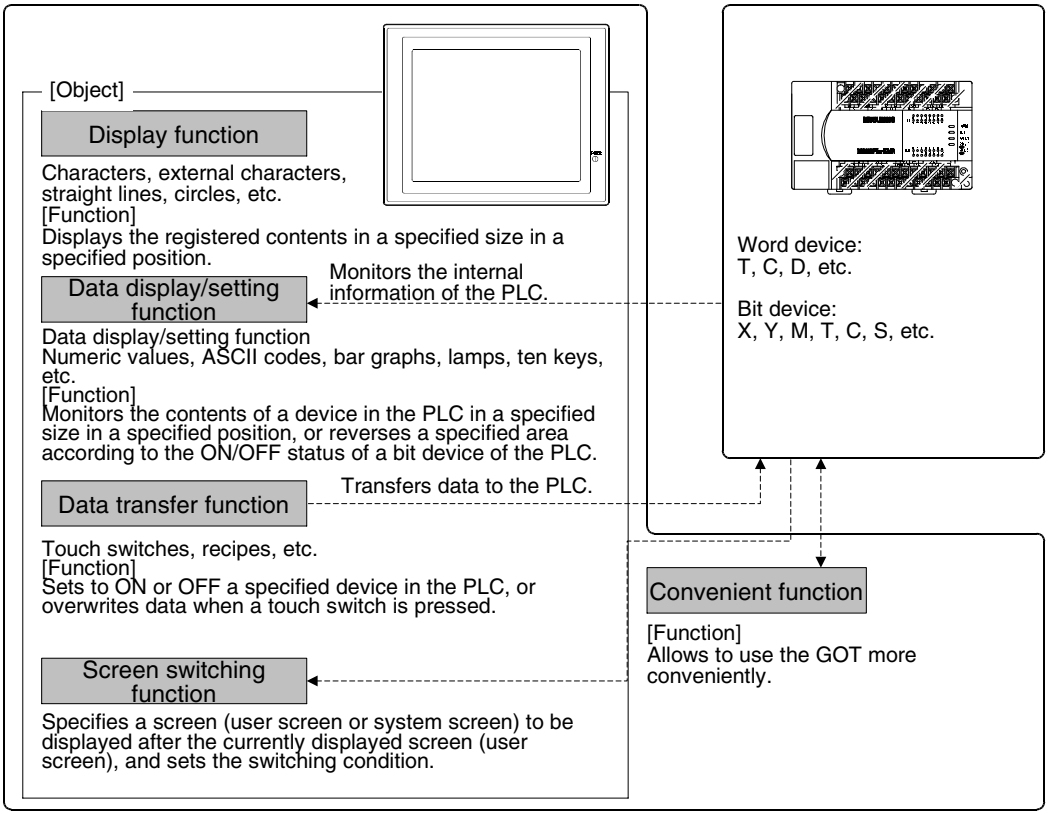
4.1.2 Objects constructing the screen

One display screen can be made up as a combination of classified functions such as character string, straight line, rectangle and circle.
When there are two or more screens, the screen displayed on the front can be switched from a touch switch in the GOT or from the PLC.

Example of display screen (F940GOT)



Objects in the display example above are mainly classified into four types.

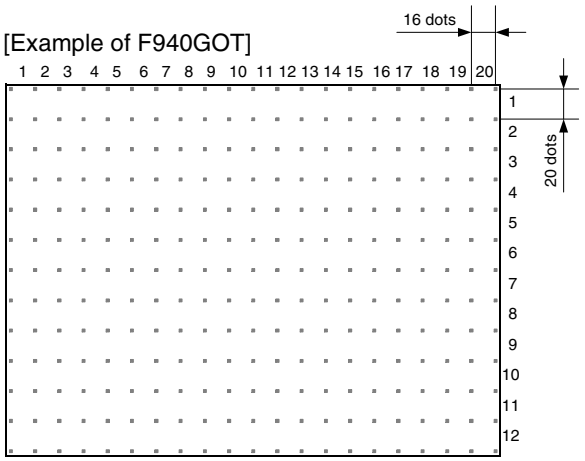


4.2 What should be understood before creating screens

1) In order to display screens
   Create objects (such as characters and graphics) for each screen.
2) Creating the screen No. 1 (essential)
   In the user screen mode in which user screens are displayed, the screen No. 1 is automatically displayed when the power is turned on.
   Accordingly, it is essential to create the screen No. 1. If the screen No. 1 does not exist, the message "The screen does not exist." is displayed.
3) In order to switch the display screen
   Execute the setting for screen switching.
4) Screen Nos. may not be consecutive.
   Screen Nos. may not be consecutive in the way "1, 2, 3, ...
   If it is expected that screens will increase, some screen Nos. may be skipped.
   However, it is recommended to use consecutive screen Nos. to some extent because errors are expected to be less in screen switching if the screen Nos. are consecutive.

4.2.1 Object display and touch switch position

1) Object
   The display position of each object constructing each screen can be specified in the unit of dot.
2) Touch switch, numeric input and ASCII input
   Lay out touch switches, numeric inputs and ASCII inputs according to the mesh shown below.



Model name	Touch switch specification	
	Matrix configuration	umber of dots in 1 square
F920GOT-K	None	
F930GOT, F930GOT-K	15 × 4	16 H × 20 V
F940GOT, Handy GOT	20 × 12	16 H × 20 V
F940WGOT	30 × 12	16 H × 20 V (16 H x 14 V only in the last line)

4.2.2 Number and screen No. of display screens

Up to 500 screens can be displayed.
A screen No. is assigned to each display screen.

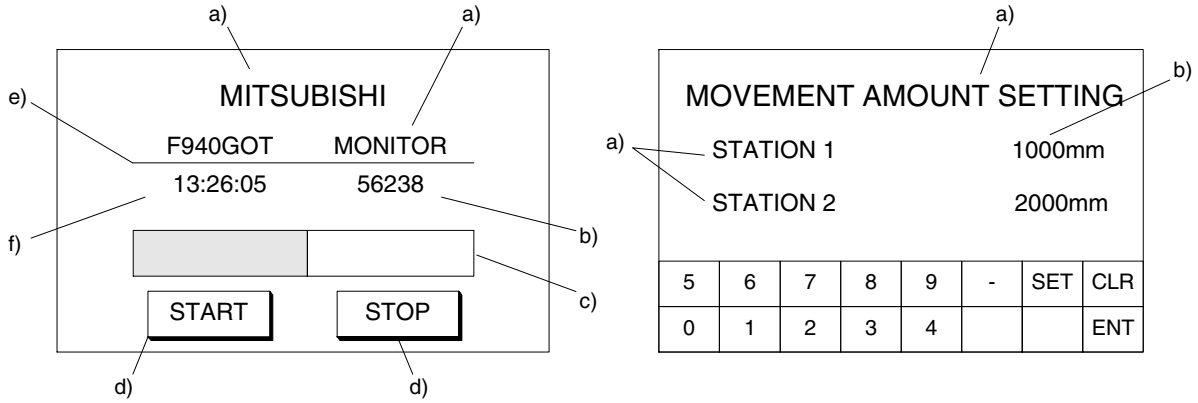
Screen creation software		Screen No. range
Data created using GT Designer2		Nos.1 to 500
Data created using GT Designer		Nos.1 to 500
Data created originally using DU/WIN	Data read and edited using GT Designer	Nos. 1 to 500 Common screen (No. 501)
	Data read and edited using GT Designer	Nos. 0 to 499 Common screen (No. 500)

4.3 Introduction of objects in screen examples

This Section explains objects constructing user screens.

Display examples

In the display examples below, some objects are used. The objects shown in the tables below can be displayed on the screen.



1) Display function objects
These objects draw graphics and characters in specified positions.

Use example	Graphic	Description
a)	Text	Displays characters and symbols including alphabets, numbers, Katakana, Hiragana and Kanji (JIS first level). (In the F920GOT-K, F93*GOT and F940WGOT, Kanji at JIS second level can be displayed also.)
e)	Straight line	Displays a straight line connecting specified two points.
--	Rectangle	Displays a rectangle whose corner is 90° each. The inside of a rectangle can be painted.
--	Circle	Displays a circle. The inside of a circle can be painted.
--	Image data	Displays a graphic in the BMP format.

2) Data display/setting objects
These objects display and change the contents of devices of the PLC.

Use example	Function	Description
b)	Numeric Display	Displays data stored in a word device in a numeric value.
--	ASCII Display	Regards data stored consecutively in word devices as a character code (ASCII code or shift JIS code), and displays a character string.
f)	Date Display Time Display	Displays the clock data built in the GOT. The display format can be "time/date". In the F920GOT-K, the clock data of the FXPLC is displayed (only when the connected FXPLC has the clock function).
--	Comment Display	Displays a comment corresponding to the ON/OFF status of a bit device or the specified range of a word device. Comments in two or more lines can be displayed also.
--	Alarm History	Displays the contents of the alarm history stored in the GOT.

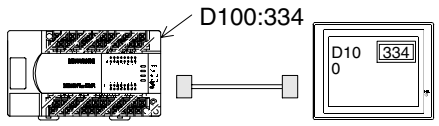
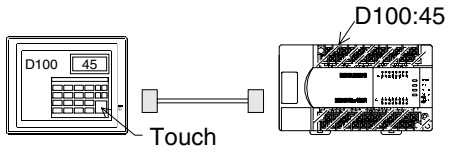
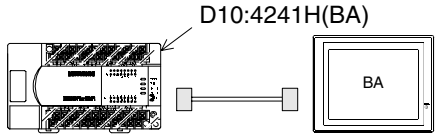
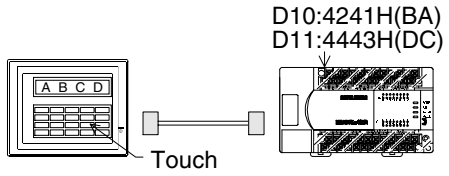
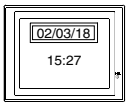
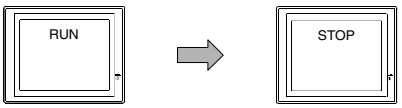
Use example	Function	Description
--	Alarm List	Makes comments correspond to two or more bit devices, and displays comments corresponding to bit devices in the ON status according to the priority.
--	Object Display	Displays an object corresponding to the ON/OFF status of a bit device or the value of a word device. Graphics in the BMP file format can be displayed as objects.
--	Lamp	Changes the lamp lighting color in accordance with the value of a device.
--	Panel Meter	Displays the value of a word device in the ratio against the upper and lower limit values in the form of meter.
--	Trend Graph	Acquires data stored in a word device at each specified timing, displays a trend graph until the display range, then scrolls the display.
--	Line Graph	Acquires data of two or more word devices at a time, and displays a line graph.
c)	Bar Graph	Displays data stored in two or more word devices in a bar graph.
--	Statistics Bar Graph Statistics Pie Graph	Acquires data from two or more word devices, and indicates the rate of each word device data against the whole data in the form of graph.
	Circle Graph	Displays data stored in a word device in a circle graph.
b)	Numeric Input	Writes an arbitrary numeric value to a specified word device.
--	ASCII Input	Writes an arbitrary ASCII code to a specified word device.

3) Data transfer object

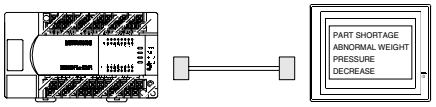
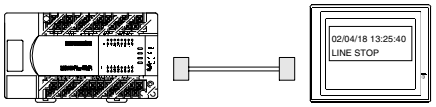
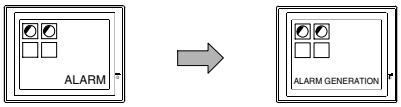
Use example	Function	Description
d)	Switch	Turns ON or OFF a bit device, changes the value of a word device or switches the screen when a touch switch is touched.

4.4 Object list

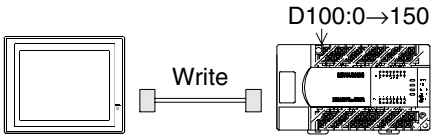
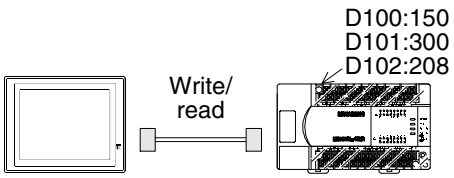
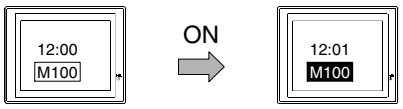
4.4.1 Numeric/ASCII Display

Function name	Function
Numeric Display 	Displays the value of a word device in a numeric value. (Refer to the GT Designer2 Reference Manual.)
Numeric Input 	Writes a value to a word device. (Refer to the GT Designer2 Reference Manual.)
ASCII Display 	Displays the value of a word device in a character. (Refer to the GT Designer2 Reference Manual.)
ASCII Input 	Inputs an ASCII code to a word device. (Refer to the GT Designer2 Reference Manual.)
Time Display 	Displays the year, month, day and time (Refer to the GT Designer2 Reference Manual.)
Comment Display 	Displays a comment. (Refer to 6.3.)

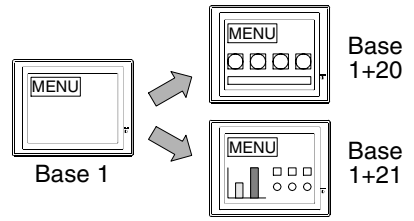
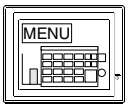
4.4.2 Alarm

Function name	Function
Alarm List 	Displays a message when an alarm occurs. (Refer to 4.11.)
Alarm History 	Displays the history of alarms occurred so far. (Refer to 4.10.)
Floating Alarm 	Displays a comment in the window or scroll format when an alarm occurs. (Refer to 4.12.)

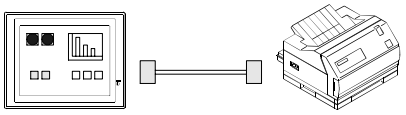
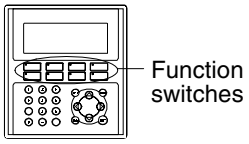
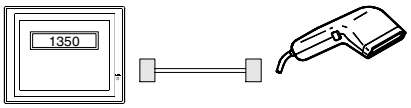
4.4.3 Condition → operation

Function name	Function
Status Monitor 	Monitors the device status, then sets a bit device to ON or OFF or writes data from the GOT to the PLC when the condition is satisfied. (Refer to 6.2.)
Recipe 	Monitors the device status, then writes or reads the device value when the condition is satisfied. (Refer to 6.4.)
Time Action 	Turns a bit device to ON or OFF on specified date and time. (Refer to 13.2.)

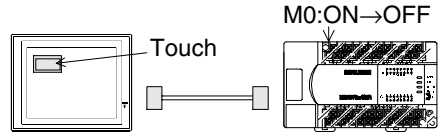
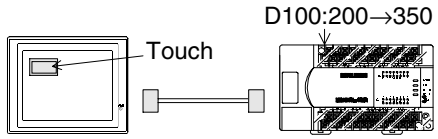
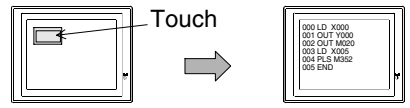
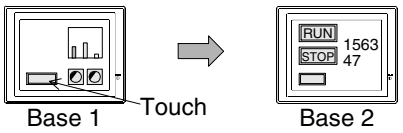
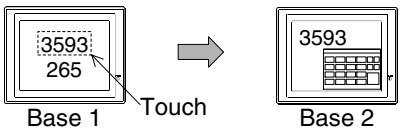
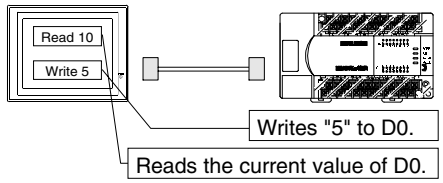
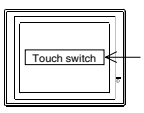
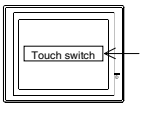
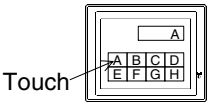
4.4.4 Auxiliary

Function name	Function
Set Overlay Screen 	Calls a specified screen, and lets it overlap on another screen. (Refer to the GT Designer2 Reference Manual.)
Security 	Restricts users for each screen using the password. (Refer to 6.1.)

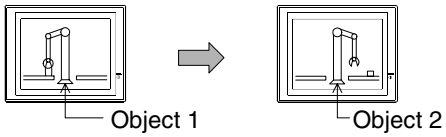
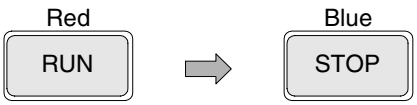
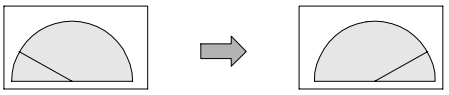
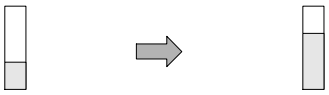
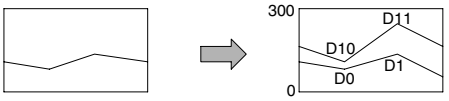
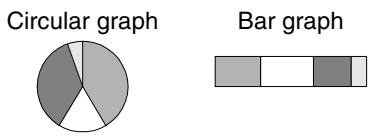
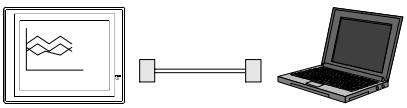
4.4.5 External I/O

Function name	Function
Hard Copy 	Outputs the screen displayed in the GOT to the printer. (Refer to the GT Designer2 Reference Manual.)
Operation Panel 	Sets a bit device to ON or OFF, writes data or switches the screen using the operation panel or a function switch. (Refer to 7.2.)
Bar Code 	Writes data read through the bar code reader to a word device. (Refer to the GT Designer2 Reference Manual.)

4.4.6 Switch

Function name	Function
Bit Switch 	Sets a bit switch to ON or OFF when touched. (Refer to the GT Designer2 Reference Manual.)
Data Write Switch 	Allows to write data to a word device when touched. (Refer to the GT Designer2 Reference Manual.)
Extension Function Switch 	Switches to a system screen when touched. (Refer to the GT Designer2 Reference Manual.)
Screen Switching Switch 	Switches the base screen when touched. (Refer to 5.2.)
Data Change Switch 	Displays a pop-up keyboard for numeric/ASCII input when touched. (Refer to the GT Designer2 Reference Manual.)
Recipe Transfer Switch 	Writes or reads recipe data when touched. (Refer to the GT Designer2 Reference Manual.)
Key Code Switch  Special operation for - Numeric Input - Password - Alarm Function - Buzzer - Hard Copy	Executes the operation according to a key code when touched. (Refer to the GT Designer2 Reference Manual.)
Multi-action Switch  - Bit Switch - Data Write Switch - Extension Function Switch - Data Change Switch - Recipe Transfer Switch - Key Code Switch	Allows to set all switch functions described above. (Refer to the GT Designer2 Reference Manual.)
Keyboard 	Allows to change a numeric/ASCII value using the always displayed keyboard. (Refer to the GT Designer2 Reference Manual.)

4.4.7 Dynamic display

Function name	Function
Object Display 	Displays a registered object. (Refer to the GT Designer2 Reference Manual.)
Lamp Display 	Changes the lamp lighting color. (Refer to the GT Designer2 Reference Manual.)
Panel Meter Display 	Displays the value of a device in a meter. (Refer to the GT Designer2 Reference Manual.)
Bar Graph 	Displays the value of a device in a bar graph. (Refer to the GT Designer2 Reference Manual.)
Trend Graph Display 	Displays the value of a device in a trend graph. (Refer to the GT Designer2 Reference Manual.)
Line Graph Display 	Displays the value of a device in a line graph. (Refer to the GT Designer2 Reference Manual.)
Statistical Graph Display 	Displays the value of devices as the rate against the whole data in a graph. (Refer to the GT Designer2 Reference Manual.)
Sampling 	Acquires values of devices, and allows to edit the acquired data in the personal computer. (Refer to section 10.)

4.5 Number of registered objects and attributes of displayed devices

4.5.1 List of number of registered objects

Object	Number of registered objects		
	[A] On each screen	[B] Screen call	[C] Number of displayable objects
ASCII Display	10	10	10
ASCII Input			
Numeric Display	50	50	50
Numeric Input			
Word Comment			
Bar Graph			
Word Object			
Circular Graph			
Panel Meter			
Graph	10	10	10
Statistical Bar Graph			
Statistical Circular Graph			
Trend Graph	1	1	1
Line Graph	1	1	1
Bit Comment	50	50	50
Bit Lamp			
Bit Area Lamp			
Screen Lamp			
External Lamp			
Bit Object			
Fixed Object			
Buzzer			
Date Display	10	10	10
Time Display			
Bit Switch	50	50	50
Data Write Switch			
Extended Function Switch			
Screen Switching Switch			
Data Change Switch			
Recipe Transfer Switch			
Key Code Switch			
Multi-action Switch			
Keyboard	1	1	1
Alarm History	1	1	1
Alarm List	1	1	1
Floating Alarm	1	1	1

The number of objects which can be displayed on one screen in the GOT is indicated in the "[C] Number of displayable objects" column, and has the relationship "[A] +[B] ≤ [C]".
When screens are overlapped or when two or more screens are overlapped using the screen lamp function, the number of displayable objects is up to the value shown in the [C] column.

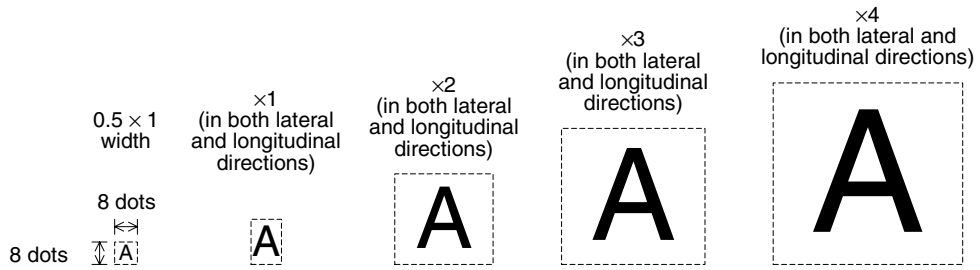
4.5.2 Data capacity of user screens and the number of system screens

Objects are controlled as screen data, and restricted as follows in each GOT.

<table>
<tr><th colspan="2">Item</th><th>Description</th></tr>
<tr><td rowspan="4">All-screen data size</td><td>F920GOT-K</td><td>128 kB (user screens, external characters, etc.)</td></tr>
<tr><td>F930GOT
F933GOT
F930GOT-K</td><td>256 kB (user screens, external characters, etc.)</td></tr>
<tr><td>F940GOT
F943GOT
F940 HANDY GOT
F943 HANDY GOT</td><td>512 kB (user screens, external characters, etc.)</td></tr>
<tr><td>F940WGOT</td><td>1MB (user screens, external characters, etc.)</td></tr>
<tr><td rowspan="2">Number of displayable screens</td><td>User screen</td><td>User screen: Up to 500 screens (Nos. 1 to 500)</td></tr>
<tr><td>System screen</td><td>Up to 30 screens (Nos. 1001 to 1030)
However, the number of displayable screens is different in each GOT as shown below.
<table>
<tr><th>Model name</th><th>Number of screens</th></tr>
<tr><td>F920GOT-K</td><td>12</td></tr>
<tr><td>F930GOT-K,F930GOT</td><td>25</td></tr>
<tr><td>F940GOT,F940WGOT</td><td>30</td></tr>
</table>
</td></tr>
</table>

4.5.3 Attributes of display objects

Each object has several detailed set items which are regarded as attributes.
Representative attributes are explained below.

<table>
<tr><th>Attribute</th><th>Function</th></tr>
<tr><td>Display position</td><td>The display position is expressed in X and Y coordinates.
Because a position is indicated using the mouse in the screen creation software, coordinates indicate positions of the mouse.</td></tr>
<tr><td>Character size</td><td>Half width (16 × 8 dots) or full width (16 × 16 dots)
The display size can be set from "1/4 time" to "8 times in vertical and horizontal directions".
Display examples
 

In the versions shown below, Numeric Display and Numeric Input can be displayed in high-quality fonts (4 times or more in vertical and horizontal directions) and small fonts (6 × 8 dots). (For the details, refer to the next page.)
Applicable OS version
<table>
<tr><th>Model name</th><th>Availability (OS version)</th><th>Model name</th><th>Availability (OS version)</th></tr>
<tr><td>F940WGOT</td><td>✓(Ver1.10~)</td><td>F930GOT-K</td><td>✓</td></tr>
<tr><td>F940GOT</td><td>✓(Ver6.10~)</td><td>F920GOT-K</td><td>✓</td></tr>
<tr><td>F930GOT</td><td>✓(Ver4.10~)</td><td>Handy GOT</td><td>✓(Ver6.10~)</td></tr>
</table>
✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.</td></tr>
</table>

<table>
<tr><th>Attribute</th><th>Function</th></tr>
<tr><td>Character size</td><td>
High-quality font
Only when either object and either size shown below are selected in the screen creation software and "Use high-quality font." is selected, characters are displayed in high-quality fonts.
<table>
<tr><th>Applicable condition</th><th colspan="2">Description</th></tr>
<tr><td>Applicable object</td><td>Numeric Display and Numeric Input</td><td>High-quality fonts cannot be specified for any object other than those shown on the left.</td></tr>
<tr><td>Valid size</td><td colspan="2">
<table>
<tr><th></th><th colspan="6">Horizontal magnification (Note: Only magnifications marked with "●" are valid.)</th></tr>
<tr><td rowspan="6">Vertical magnification</td><td></td><td>1</td><td>2</td><td>4</td><td>6</td><td>8</td></tr>
<tr><td>0.5</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>1</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td></td><td></td><td>●</td><td>●</td><td>●</td></tr>
<tr><td>3</td><td></td><td></td><td>●</td><td>●</td><td>●</td></tr>
<tr><td>4</td><td></td><td></td><td>●</td><td>●</td><td>●</td></tr>
</table>
</td></tr>
<tr><td>Valid character</td><td colspan="2">0 to 9, A to F and decimal point (17 characters in all)</td></tr>
</table>
"6 × 8 dots" font
Only when either object and either size shown below are selected in the screen creation software and "Use "6 x 8 dots" font." is selected, characters are displayed in "6 × 8 dots" font.
<table>
<tr><th>Applicable condition</th><th>Description</th></tr>
<tr><td>Applicable object</td><td>Comment Display, Lamp Display, Date/Time Display, Alarm List, Alarm History, ASCII Display, ASCII Input, Numeric Display, Numeric Input and Touch Switch
The "6 × 8 dots" font cannot be specified for any object other than those shown above.</td></tr>
<tr><td>Valid size</td><td>
<table>
<tr><th></th><th colspan="6">Horizontal magnification (Note: Only magnifications marked with "●" are valid.)</th></tr>
<tr><td rowspan="6">Vertical magnification</td><td></td><td>1</td><td>2</td><td>4</td><td>...</td><td>8</td></tr>
<tr><td>0.5</td><td>●</td><td></td><td></td><td></td><td></td></tr>
<tr><td>1</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>:</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>8</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Valid character</td><td>ASCII characters whose ASCII code is 20H to 7FH (96 characters).</td></tr>
</table>
</td></tr>
</table>

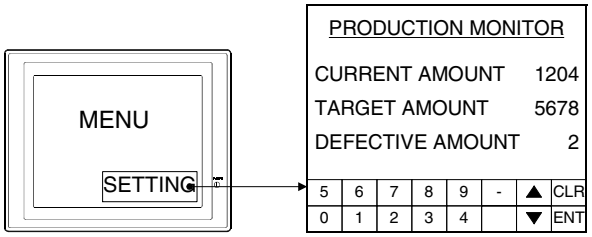
<table>
<tr><th>Attribute</th><th>Function</th></tr>
<tr><td>Color specification</td><td>
<table>
<tr><td>F920GOT-K,F930GOT-K,F93*GOT</td><td>2 colors (white and blue)</td></tr>
<tr><td>F94*GOT</td><td>8 colors (In the F94*GOT-LWD-E, select white or black.)</td></tr>
<tr><td>F940WGOT</td><td>256 colors</td></tr>
</table>
There are display color, character color, background color, pointer color, plate color, display frame, frame color, switch color, etc.
</td></tr>
<tr><td>Screen background color</td><td>The background color can be specified according to the display area.
<table>
<tr><td>F920GOT-K,F930GOT-K,F93*GOT</td><td>2 colors (white and blue)</td></tr>
<tr><td>F94*GOT</td><td>8 colors (In the F94*GOT-LWD-E, select white or black.)</td></tr>
<tr><td>F940WGOT</td><td>256 colors</td></tr>
</table>
</td></tr>
<tr><td>Device specification</td><td>Devices of the PLC can be specified.
(The table below shows devices of Mitsubishi PLC.)
<table>
<tr><td>Word device</td><td>Timer (T), counter (C), data register (D) and index register (V, Z) In the A Series, link register (W) and file register (R) can be specified also.</td></tr>
<tr><td>Bit device</td><td>Input (X), output (Y), auxiliary relay (M), state (S), timer (T) and counter (C). In the A Series, F and B can be specified also.</td></tr>
</table>
When using PLC manufactured by another company, refer to Section 16.8.
</td></tr>
<tr><td>Upper limit value
Lower limit value</td><td>The upper limit and lower limit data can be specified for word devices to be displayed. Word devices beyond the specified range are not displayed.</td></tr>
</table>

4.6 Numeric Input and ASCII Input (change of displayed data)

With regard to "Numeric Input" and "ASCII Input" displayed on the user screen, the data can be changed using the keyboard or keypad.

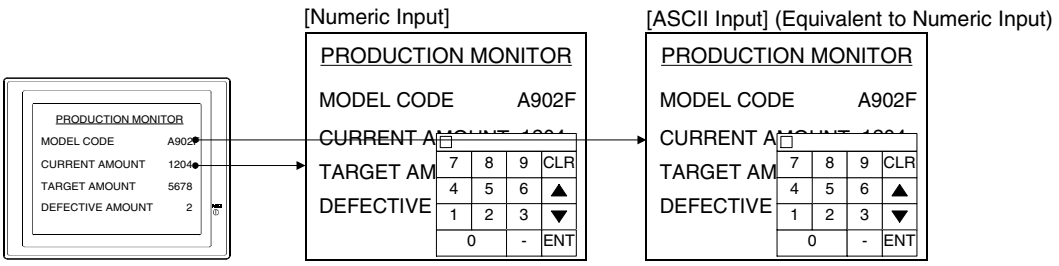
4.6.1 Outline

1) When the keyboard is always displayed (Refer to Section 4.6.2.)

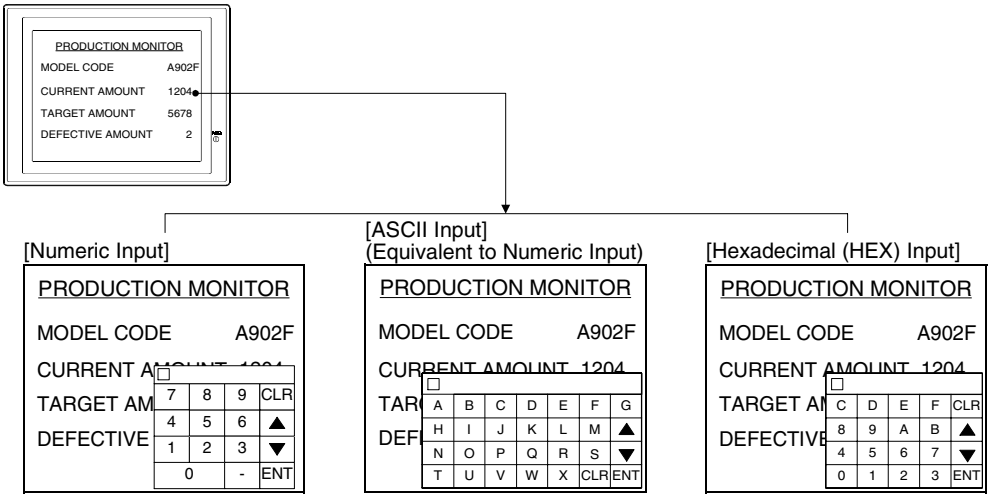


2) When the popup key window is displayed by touching (Refer to Section 4.6.3.)

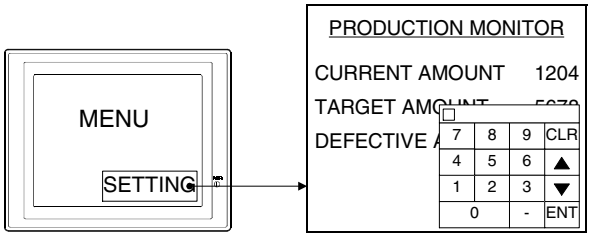
a) When the default key window is displayed



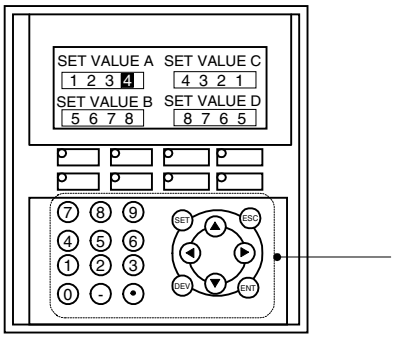
b) When the user key window is displayed
For creation of the window, refer to Section 4.6.7.



3) When the popup key window is displayed at screen switching
(Refer to Section 4.6.4.)

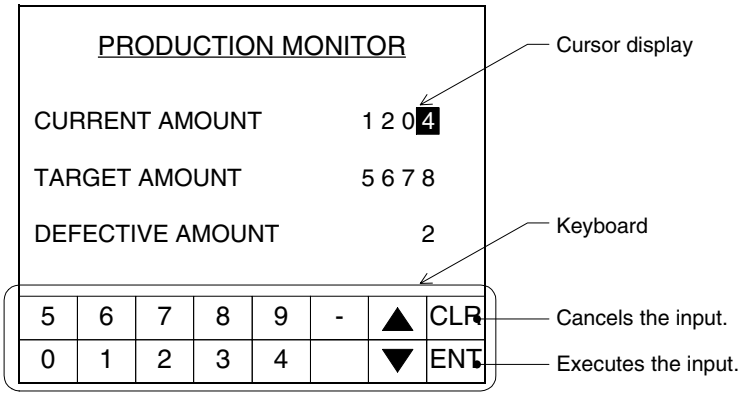


4) When the key pad is used (in the F920GOT-K and F930GOT-K)
(Refer to Section 4.7.)



4.6.2 When the keyboard is always displayed

1) Screen example



2) Explanation on operating procedure
When a Numeric Input or ASCII Input on the display screen is touched (touch switch), its data can be changed using the keyboard.
When selecting another Numeric Input or ASCII Input
Touch another Numeric Input or ASCII Input on the screen. Or select a desired one using the "▲, ▼" keys.
When creating the screen in GT Designer set "User ID" and "Move Destination ID" to "Numeric Input" and "ASCII Input" before moving the cursor.

3) Selecting the keyboard design

a) When selecting the keyboard from the library
Select a desired keyboard from ten-key boards, ASCII boards and hexadecimal keyboards prepared in advance in the GT Designer2 from the library.

Setting in the screen creation software (GT Designer2)

Operating procedure	Tool menu
	Select [View]-[Library].

The selected keyboard can be used together with the key window at the same time.

b) When selecting the keyboard from the "Keyboard" object
Select a desired keyboard from the "Keyboard" object prepared in advance in the GT Designer2.
This keyboard is prepared in the screen creation software DU/WIN, and its design is different from those available in the library described above.

Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Object]-[Keyboard].

The selected keyboard cannot be used together with the key window at the same time. (That is, while this keyboard is displayed, the key window is not displayed.)

c) When creating a keyboard by combining touch switches
Use key code touch switches as touch switches for inputting numbers and alphabets. (For key codes and assignment of functions, refer to Sections 16.2, 16.3 and 16.4.)

Setting in the screen creation software (GT Designer2)

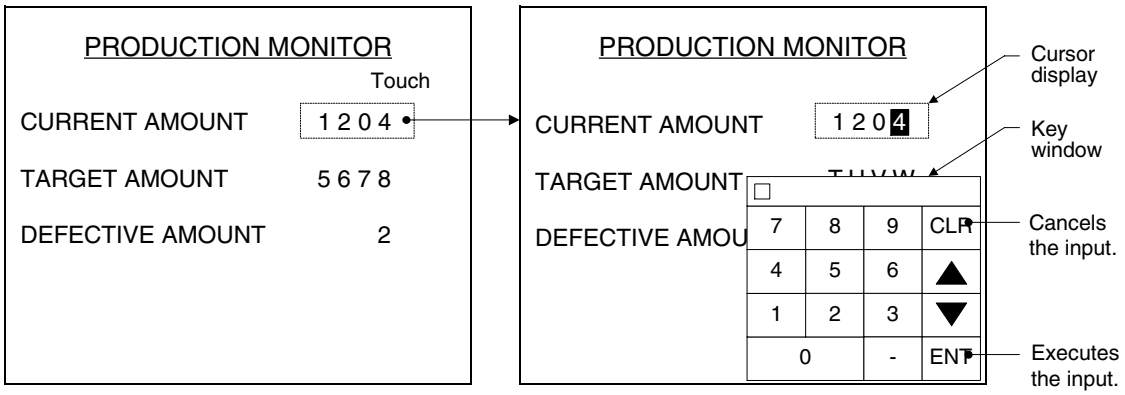
Operating procedure | Tool menu

Select [Object]-[Switch]-[Key Code Switch].

The selected keyboard can be used together with the key window at the same time.

4.6.3 When the popup key window is displayed by touching

1) Screen example



2) Explanation on operating procedure

When a Numeric Input or ASCII Input on the display screen is touched (touch switch), its data can be changed using the popup key window.

For use together with the key window at the same time, refer to Section 4.6.2.

When selecting another Numeric Input or ASCII Input

Touch another Numeric Input or ASCII Input on the screen. Or select a desired one using the "▲, ▼" keys.

When creating the screen in GT Designer set "User ID" and "Move Destination ID" to "Numeric Input" and "ASCII Input" before moving the cursor.

3) Selecting the keyboard design

As the popup key window, either one between the default key window and user key window can be selected.

Setting in the screen creation software (GT Designer2)

Operating procedure	Tool menu
	Select [Common]-[System Environment] → "Key Window".

(The "Key Window" setting is shared among all user screens.)

a) When selecting "Use default key window."

Without regard to the display format (Numeric Input or ASCII Input), the default decimal key window is displayed.

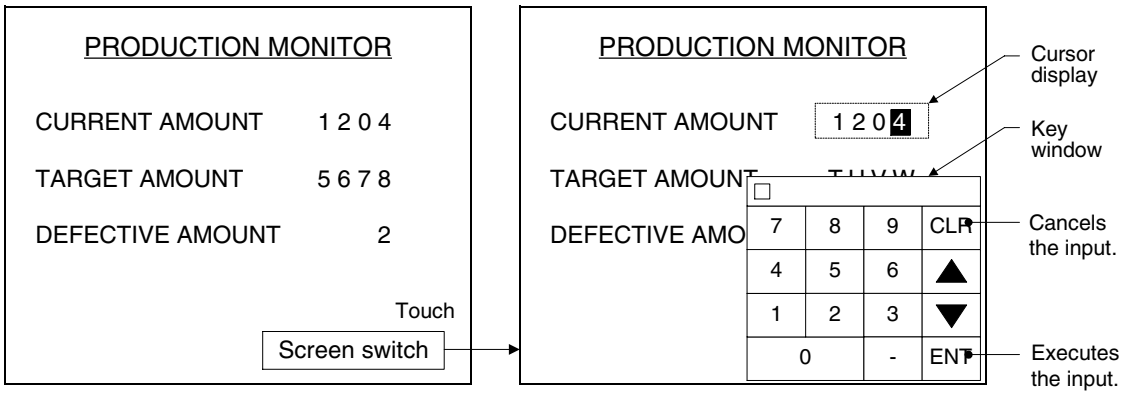
b) When selecting "Select key window sheet No."

The user can create a key window, and display it according to the display format (Numeric Input or ASCII Input).

- For creation of the key window, refer to Section 4.6.7.
- For display (assignment) of the user key window, refer to Section 4.6.8.

4.6.4 When the key window is displayed at screen switching

1) Screen example



2) Explanation on operating procedure

When the screen is switched, if Numeric Input or ASCII Input is present on the next display screen, its data can be changed by displaying the cursor or popping up the keyboard.
For use together with the keyboard at the same time, refer to Section 4.6.3.

When selecting another Numeric Input or ASCII Input

Touch another Numeric Input or ASCII Input on the screen. Or select a desired one using the "▲, ▼" keys.
When creating the screen in GT Designer set "User ID" and "Move Destination ID" to "Numeric Input" and "ASCII Input" before moving the cursor.

3) Selecting the keyboard design

Create ten keys on the window, then select a window to be used on the setting screen for "Auxiliary Setting (Project)".

4.6.5 Setting the key window in the F930GOT-K

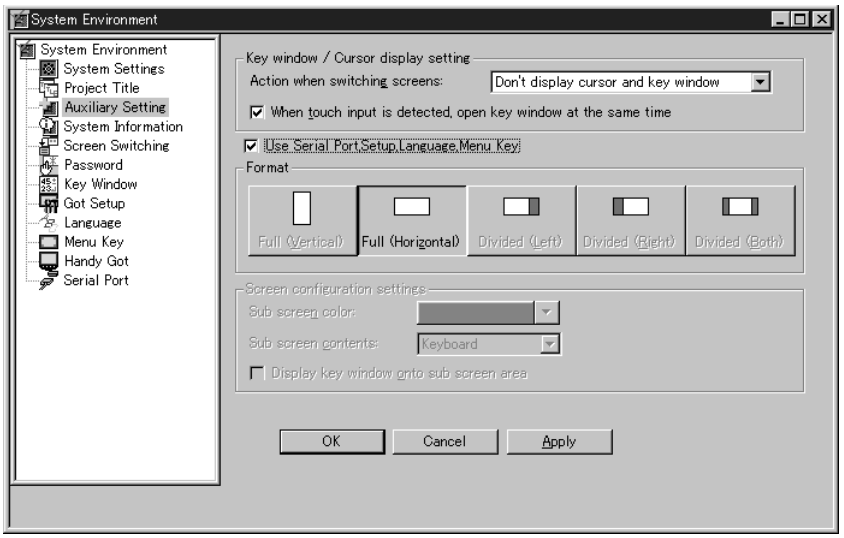
When displaying the key window in the F930GOT-K, execute the following settings.

1) Creating the key window
   Make sure to create the key window.
   For the key window creation procedure, refer to Section 4.6.7.
2) Setting the user key window
   Make sure to create the user key window.
   If "Use the default key window." is selected, the user key window cannot be displayed.
   For the user key window setting procedure, refer to Section 4.6.8.
3) Displaying the key window
   Setting in the screen creation software (GT Designer2)

Operating procedure	Tool menu

Select [Common]-[System Environment].
Set "Auxiliary Setting".

["Auxiliary Setting" dialog box of project]

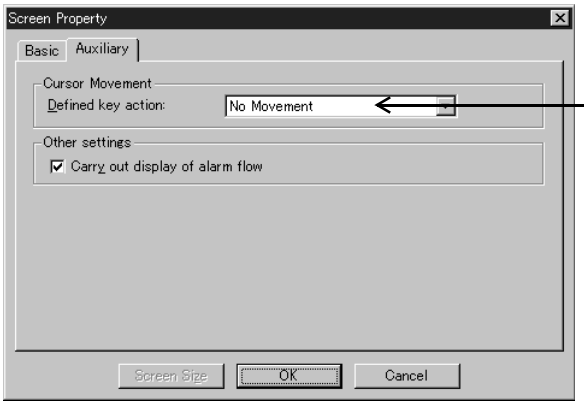


4) Deleting the key window
Delete the ten-key window by the following setting.

Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Screen]-[Properties], then click the "Auxiliary Setting" tab.



Setting position

Select "Delete the cursor/key window." When the [ENT] key is pressed after Numeric Input or ASCII Input is input, the key window is deleted.

4.6.6 Specifying the key window display position (OS version upgrade)

In the following versions of the GOT, the initial display position of the key window which is displayed to change data of Numeric Input or ASCII Input can be specified. In the former versions, the key window display position is fixed at the lower right corner.

1) Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓(Ver3.00~)	F920GOT-K	×
F930GOT	✓(Ver2.00~)	Handy GOT	✓(Ver3.00~)

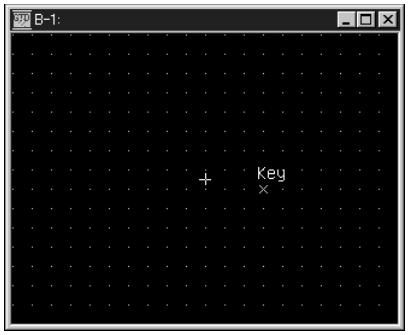
✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

Using the following operating procedure, set the key window display position for each screen.

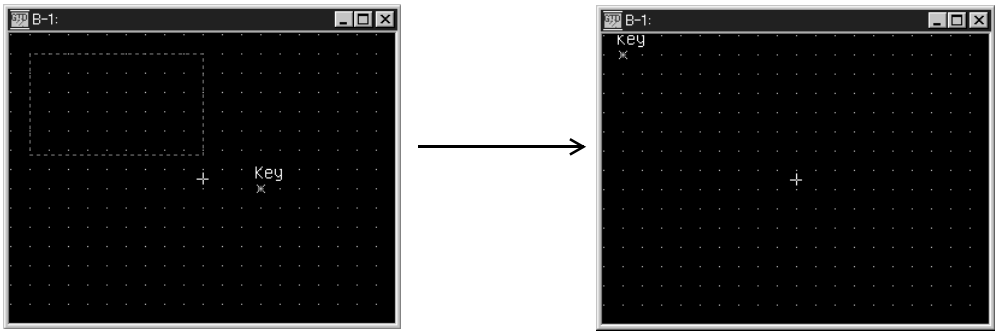
2) Setting in the screen creation software (GT Designer2)

Operating procedure — Tool menu

Select [Object]-[Key Window Position].
Click on the screen.



a) Operating procedure for moving the key window
Drag and drop [×] on the screen to change the display position.

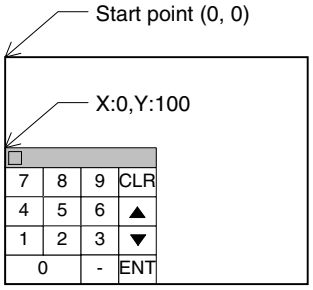


b) Operating procedure for deleting the key window
Click [×] on the screen, then press the [DEL] key to delete the key window.

3) Basic operation

a) When the initial position is not set
The key window is displayed at the lower right corner without exception.

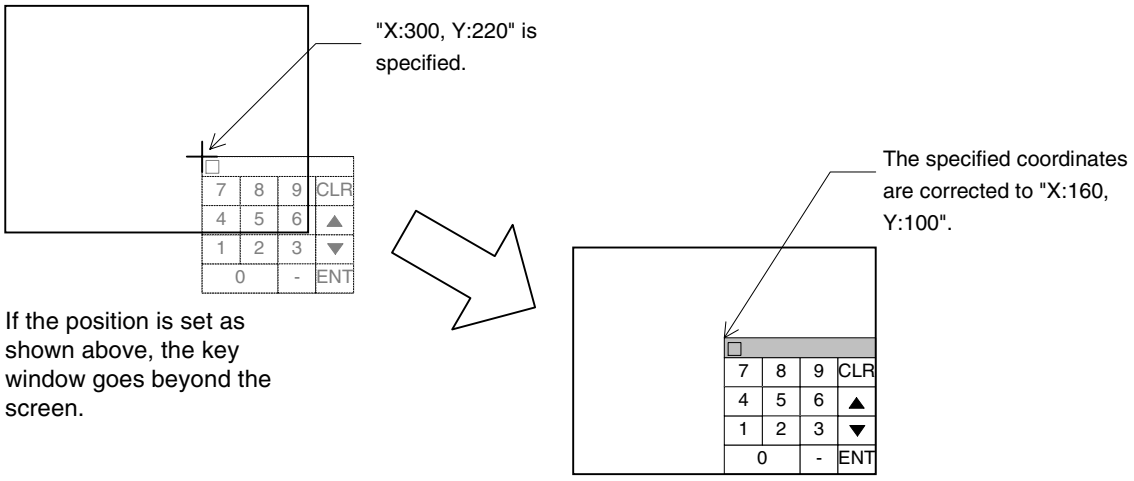
b) When the key window is opened and closed repeatedly
When the screen switching operation is not executed, the key window is displayed again in the previous position.
At the first time, the key window is displayed in the initial position set for the screen.
Example: When "X:0, Y:100" is set



The key window is displayed from the specified coordinates while the upper left corner of the screen is regarded as the start point (X:0, Y:0).

c) When the screen is switched to another one, then returned to it (that is, when the former screen is displayed again)
Without regard to the previous display position, the key window is displayed in the initial position set for the screen.

d) When the key window goes beyond the screen
The specified start coordinates are automatically corrected so that the key window does not go beyond the screen, then the key window is displayed in the corrected position.



4.6.7 Creating the key window (customization) (OS version upgrade)

In the following versions of the GOT and screen creation software, the user can create any key window other than the decimal, hexadecimal and ASCII key windows offered as the default, and display the created key window.

1) Applicable GOT and OS version

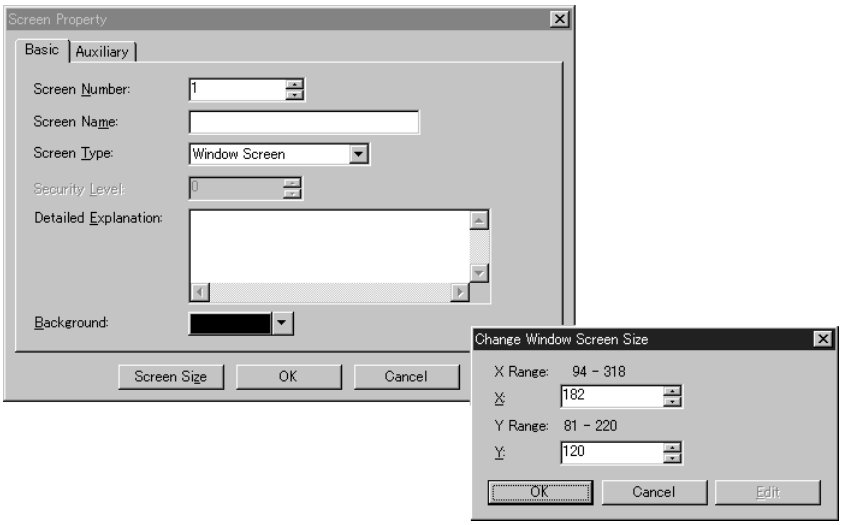
Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓(Ver3.00~)	F920GOT-K	×
F930GOT	✓(Ver4.10~)	Handy GOT	✓(Ver3.00~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

2) Setting in the screen creation software (GT Designer2)

Operating procedure Tool menu

Select [Screen]-[New]-[Window Screen].



3) Selecting the keyboard design

a) Selecting the keyboard from the library

Select either one among ten-key boards, ASCII boards and hexadecimal keyboards offered as the default in the GT Designer2 from the library, then assign it to the key window.

Setting in the screen creation software (GT Designer2)

Operating procedure Tool menu

Select [View]-[Library].

b) Creating a desired keyboard by combining touch switches

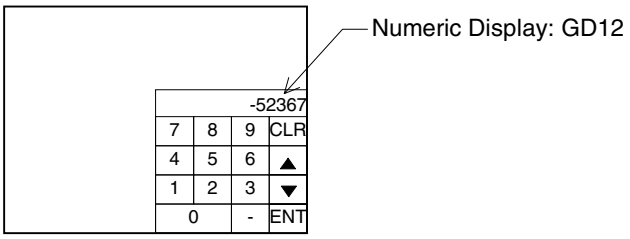
For touch switches for inputting numbers and alphabets, use key code touch switches. (For assignment of key codes and functions, refer to Section 16.2, 16.3 and 16.4.)

Setting in the screen creation software (GT Designer2)

Operating procedure Tool menu

Select [Object]-[Switch]-[Key Code Switch].

4) Echo display of data being input
When displaying data (numeric value or ASCII code) being input, specify the GD12 for Numeric Display during creation. (echo display)

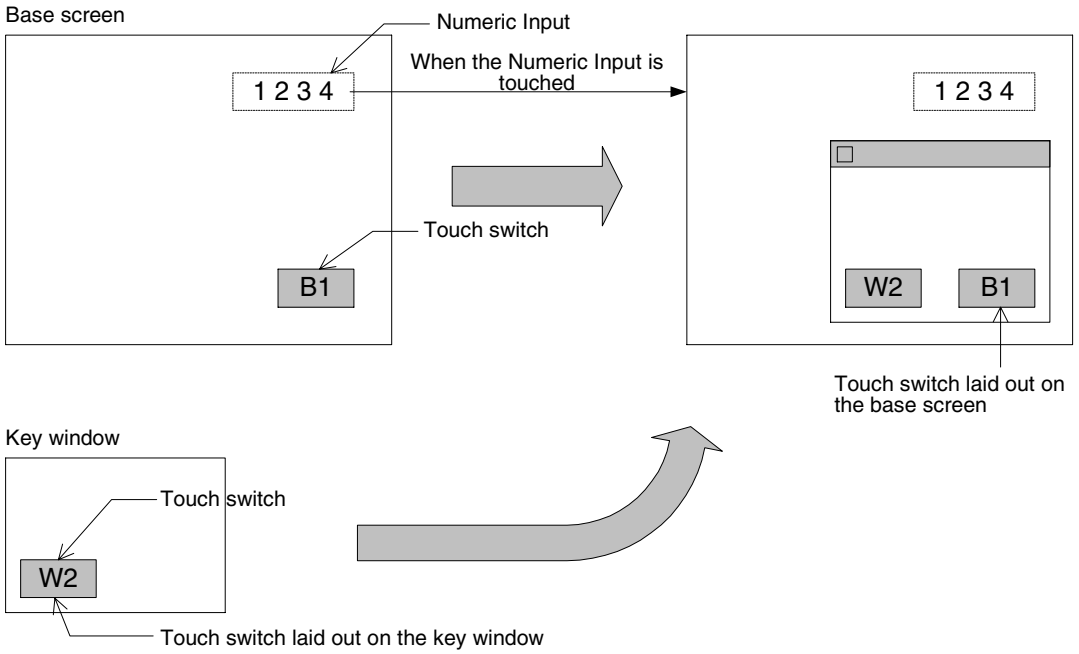


5) Cautions on creation

a) Unavailable objects
In the same way as the base screen, characters and touch switches can be created on the key window. However, the following objects are not available.

- Numeric Input (Numeric Display is available).
- ASCII Input (ASCII Display is available.)
- Line Graph
- Screen Lamp
- Alarm List
- Set Overlay Screen
- Keyboard
- Alarm History
- Trend Graph

b) Touch switches displayed on the key window
Because the background of the key window is transparent, the base screen under the key window can be seen. The following contents should be noted.



Though the B1 is a touch switch laid out on the base screen, it can be seen (because the background of the key window is transparent), and recognized as a touch switch.
If the touch switch W1 on the key window is overlapping, the touch switch B1 on the base screen does not function.
If transparency is not desired, paint the background of the key window using the Rectangle object.

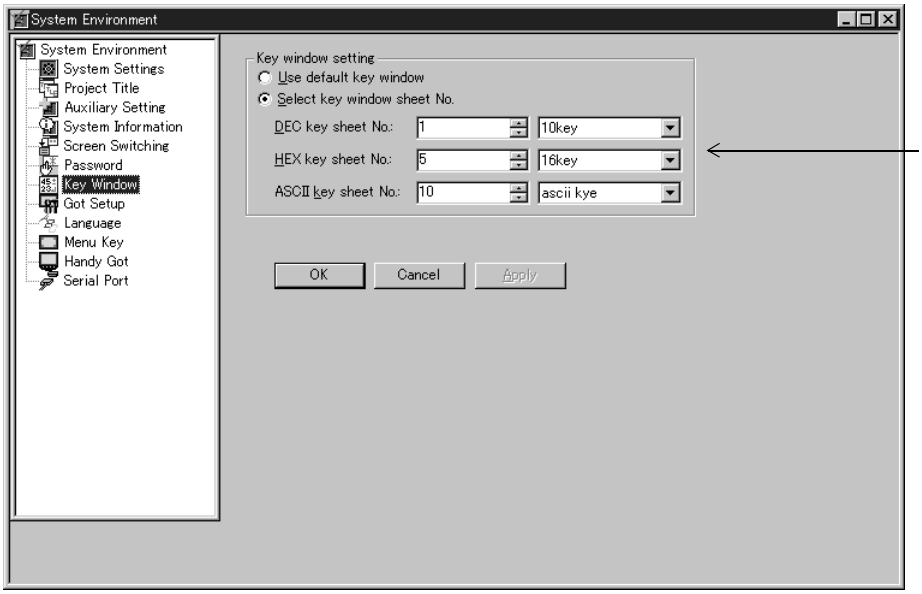
4.6.8 Assigning the user key window

A key window created by the user becomes available by the following setting.

1) Setting in the screen creation software (GT Designer2)

Operating procedure: Tool menu

Select [Common]-[System Environment]-[Key Window].



Select "Select key window sheet No.", then specify the decimal key, hexadecimal key and ASCII key using each key window No.

2) Rule on display and cautions (For the F930GOT-K, refer to Section 4.7.3.)

When selecting "Use default key window.":
Without regard to the display format (Numeric Input or ASCII Input), the default decimal key window is displayed without exception.

When selecting "Select key window sheet No.":
The following operation is executed depending on presence/absence of the key window No. to be displayed.

a) When the screen No. is set to "0" in "Key Window No. Setting", the setting is ignored. Without regard to the display format (Numeric Input or ASCII Input), the default decimal key window is displayed.

b) When a key window is created but cannot be displayed due to errors on it, or when the specified key window No. is not present
   - Numeric Input (other than hexadecimal): The default decimal key window is displayed.
   - Numeric Input (hexadecimal): The default hexadecimal key window is displayed.
   - ASCII Input: The default ASCII input key window is displayed.

c) When the window No. specified in "Key Window No. Setting" is present
   - Numeric Input (other than hexadecimal): The key window specified in "DEC key sheet No." is displayed.
   - Numeric Input (hexadecimal): The key window specified in "HEX key sheet No." is displayed.
   - ASCII Input: The key window specified in "ASCII key sheet No." is displayed.

4.6.9 Decimal point input function (OS version upgrade)

In the following versions of the GOT, the decimal point can be input in inputting numeric values.

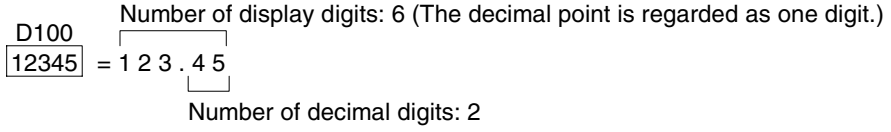
1) Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓(Ver6.00~)	F920GOT-K	✓
F930GOT	✓(Ver4.00~)	Handy GOT	✓(Ver3.00~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

2) Screen creation procedure
In the case of GOT-F900 (except the F920GOT-K)
Input the decimal point using a touch switch to which the key code "002E" is assigned.
When inputting the decimal point, set the number of decimal digits in the Numeric Input object.
In the case of F920GOT-K and F930GOT-K
The decimal point can be input using the keypad.

3) Display example of Numeric Input
Display device: D100, signed decimal



When the displayed value is changed to "12.30"

The touch switch for decimal point is provided.

Input [1] [2] [.] [3] .

4) Cautions on use

a) Key window for decimal point input
The touch switch for decimal point is not included in the system key window displayed automatically.
Separately create the touch switch for decimal point (key code: 002E).
When creating the key window using the key window customization function, create on the screen a keyboard including the touch switch for decimal point.

b) How to count the number of digits
Any numeric value cannot be input beyond the set number of display digits or the set number of decimal digits.

c) Value written to the PLC
Both "12.30" and "1230" are written as "1230" to the PLC (D100) without regard to presence/absence of the decimal point.
However, when the Numeric Input object is a real number, it is handled as a binary float value.
Examples:In the case of signed decimal

Numeric Input (with the decimal point)		PLC (D100)
12.30	→	1230
Numeric Input (without the decimal point)		PLC (D100)
1230	→	1230

4.6.10 Cautions on use (data change condition)

In the following cases, data cannot be changed for Numeric Input and ASCII Input.

1) Condition enabling data changes

In drawing GOT

For the solution, the numeric value settings should be changed using the screen creation software.

a) When the data to be input is beyond the lower limit value or upper limit value
The upper limit value and lower limit value are provided to set the allowable data setting range. If a value beyond this range is tried to be input, the input is disabled.
Solution: Change the upper limit/lower limit value.

b) When the Numeric Display/Input or ASCII Display/Input on the user screen becomes blank
When a device No. not present in the PLC is monitored on the screen, the numeric data becomes blank.

c) When the key window cannot be displayed (Refer to Chapter 14.)
When the numeric (Numeric Input) or character code (ASCII Input) is not located in a position which can be recognized as the mesh for touch switch.
"Horizontal 16 dots x vertical 20 dots" form one touch switch. When the half or more of this range is occupied, it is recognized as a touch switch.
If the data change target object is not located in a position which can be recognized as the mesh for touch switch, data change is disabled even if the data change target object is touched.
Solution: Change the target object position. Or display the target object with a frame or in a size of "2 times in the vertical direction" or more.

d) When the key window is to be displayed in the F930GOT-K (Refer to Section 4.7.3.)
Select [Common] → [System Environment] → [Key Window], then set the key window No. to be displayed.
When "Use default key window." is selected, no key window is displayed.

In PLC status

a) When the EPROM memory is mounted in the PLC
In the FX Series PLC, the set value of timers and counters and the current value of file registers cannot be changed.

b) When the EEPROM memory cut/memory board is mounted in the FX Series PLC
The set value of timers and counters and the current value of file registers can be changed.

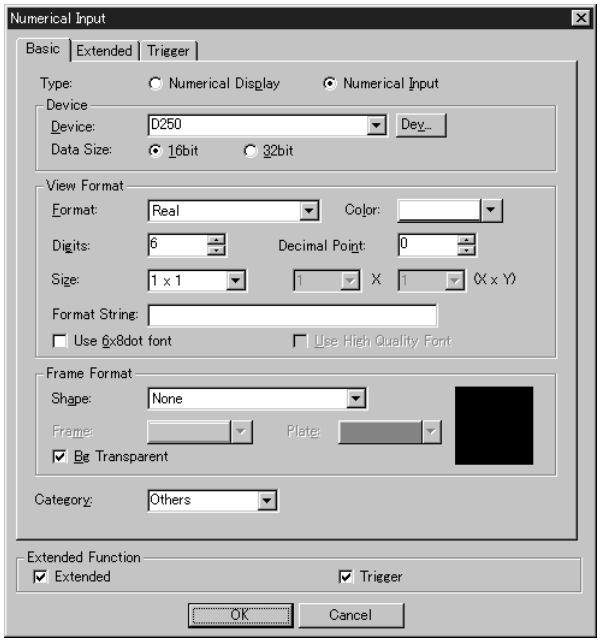
i) When the PLC is in STOP mode
The set value (which is specified) of timers and counters and the current value of file registers cannot be changed.

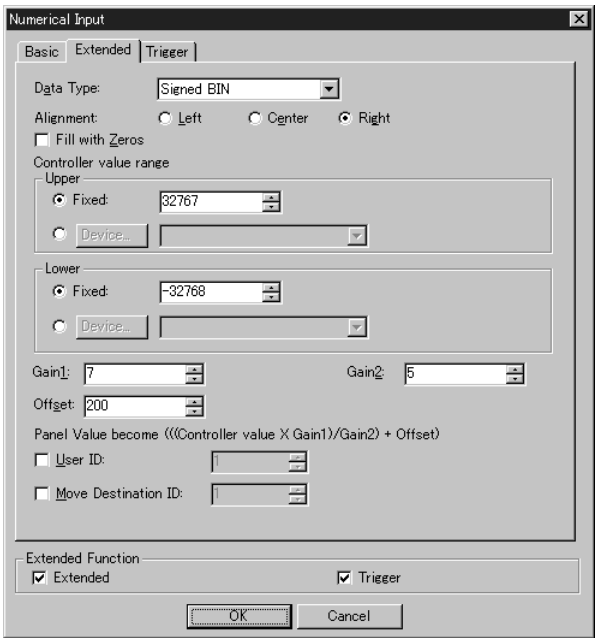
ii) When the PLC is in RUN mode
The set value (which is specified directly) of timers and counters and the current value of file registers cannot be changed.

c) When the password is registered in the PLC
In the FX and A Series PLC, the set value of timers and counters and the current value of file registers cannot be changed.
Reset the password.

2) When a real Number is set in the Numeric Input or Numeric Display object

When "Display Format" on the "Basic" tab is set to "Real" in the Numeric Input or Numeric Display object, do not set the calculation formula ("Offset", "Gain 1" and "Gain 2") on the "Extended (Extended Function)" tab.
Numeric values are not displayed on the screens in the GOT-F900. Execute calculation in a program in the PLC.



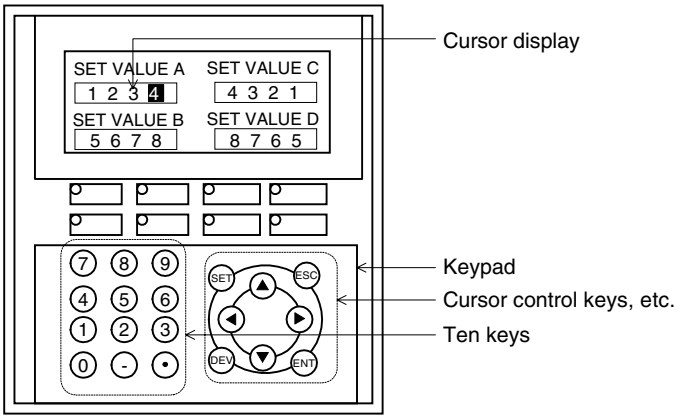


4.7 Data change using the keypad (F920GOT-K, F930GOT-K)

Values of Numeric Input and ASCII Input can be changed using the keypad in the F920GOT-K and using the touch switch or keypad in the F930GOT-K.

4.7.1 Function of each key on the keypad

Data change is valid in "Numeric Input" and "ASCII Input" created using he GT Designer2.



[SET] key: Displays the cursor.

Press the [SET] key to display the cursor and enable data change.
The cursor is displayed in the data change target object located at the upper left corner of the display unit. (Only objects satisfying the operation condition are regarded as targets.)

[◀], [▶], [▲] and [▼] keys: Allows to select the target object.

Using these cursor control keys, select the target object whose data is to be changed.

[0] ... [9], [-] and [.] keys: Allows to input numeric values.

Use the ten keys to input numeric values.
Negative values and the decimal point can be input using the [-] and [.] keys.

[ESC] key: Cancels the data change operation.

Press this key to cancel the data change operation.
The numeric value before change is displayed again.

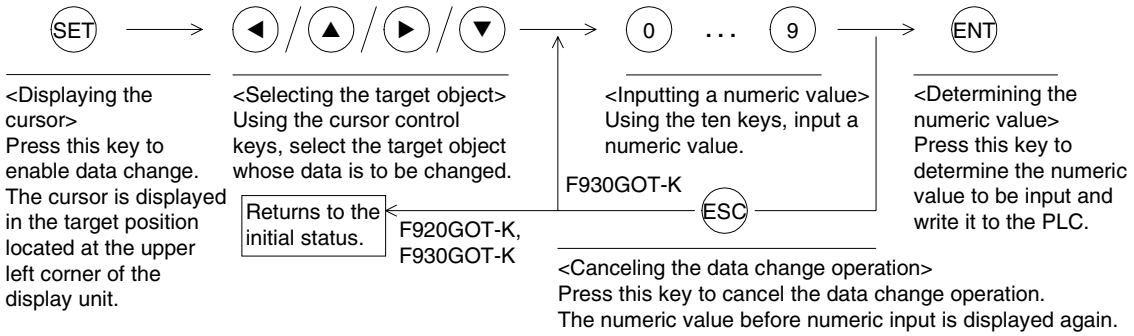
[ENT] key: Determines a numeric input.

Press this key to determine the numeric value to be input and write it to the PLC.

[DEV] key: Not available.

4.7.2 Data change operation using the keypad

Key operation for data change



1) In the case of F920GOT-K

   a) Cancel during input
   Press the [ESC] key during the input operation to return to the initial status (without the cursor).

   b) ASCII code input operation
   Only the [0]...[9], [-] and [.] keys are available.

   c) Hexadecimal value input
   Press the [.] key to change over the hexadecimal input mode and decimal input mode.
   In the hexadecimal input mode (in which "HEX" is displayed in the right area of the screen), press the [1] key to input "A", the [2] key to input "B" ... the [6] key to input "F".

2) In the case of F930GOT-K

   a) Cancel during input
   Press the [ESC] key during the input operation to return to the initial status (without the cursor).
   This operation is equivalent to the operation of the [ENT] key set in "Screen Property" in the GT Designer2.

   b) ASCII code input operation
   If any character other than "0" ... "9", "-" and "." is required to be input, use the key window.

   c) Hexadecimal value input
   If any character other than "0" ... "9", "-" and "." is required to be input, use the key window.

   d) Decimal point key
   The decimal point key "." on the keypad is invalid while the key window not equipped with the decimal point is displayed.
   When inputting the decimal point from the keypad, do not display the key window not equipped with the decimal point or display the key window equipped with the decimal point.

4.7.3 Setting the key window and cursor display

When changing data using the keypad, the cursor display and operation can be changed by the settings of the screen creation software.

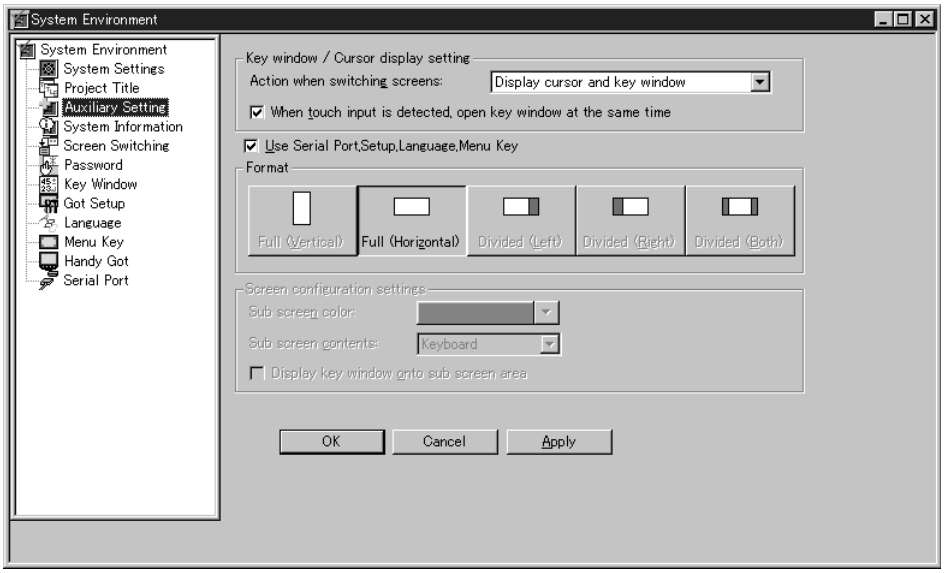
1) Relationship between the key window and cursor for the input value

Setting	Decimal	Hexadecimal	ASCII
When using the default key window	Only the cursor is displayed.	Only the cursor is displayed.	Only the cursor is displayed.
When the specified key window is not present	Only the cursor is displayed.	The cursor and system key window are displayed.	The cursor and system key window are displayed.
When specifying the key window No. 0	Only the cursor is displayed.	Only the cursor is displayed.	Only the cursor is displayed.
When creating the key window and specifying its window No.	The cursor and specified key window are displayed.	The cursor and specified key window are displayed.	The cursor and specified key window are displayed.

2) Setting in the screen creation software (GT Designer2)

Operating procedure Tool menu

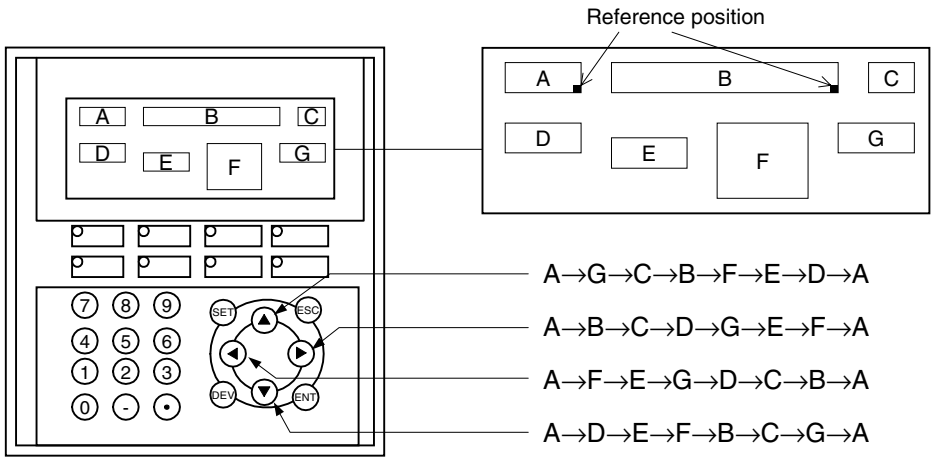
Select [Common]-[System Environment]-"Auxiliary Setting".



3) Operation when the screen is switched
   The operation depends on "Auxiliary Setting" available by selecting [Common]-[System Environment].
   a) When selecting "Don't display cursor and key window."
      When the screen is switched, the cursor and key window are not displayed.
      When inputting a numeric value, press the [SET] key to display the cursor.
   b) When selecting "Display cursor only."
      When the screen is switched, the cursor is displayed in Numeric Input or ASCII Input which satisfies the operation condition and is located at the upper left corner. (When inputting a numeric value, it is not necessary to press the [SET] key for displaying the cursor.)
   c) When selecting "Display cursor and key window."
      When the screen is switched, the cursor is displayed in Numeric Input or ASCII Input which satisfies the operation condition and is located at the upper left corner. (When inputting a numeric value, it is not necessary to press the [SET] key for displaying the cursor.)
      In the F930GOT-K, the key window is displayed, and data change using touch switches is enabled.
      The displayed key window depends on the setting of "Key Window" on the "System Environment" dialog box. (If the setting for displaying the key window is not provided, the key window is not displayed.)
      When deleting the displayed key window, use "Auxiliary Setting" on the "Screen Property" dialog box.
4) "Open key window at touch input." (F930GOT-K)
   Select "Open key window at touch input." in "Key Window/Cursor Display Setting".
   a) Giving a check mark to the check box
      When the Numeric Input object or ASCII Input object on the screen is touched, the cursor is displayed. (When inputting a numeric value or ASCII code, it is not necessary to the [SET] key for displaying the cursor.)
      The key window is displayed, and data change using touch switches is enabled.
      The displayed key window depends on the setting of "Key Window" on the "System Environment" dialog box. (If "Use default key window." is selected, the key window is not displayed.)
   b) Deleting a check mark from the check box
      When changing the data using only the keypad, delete a check mark from the check box.
5) Caution on use
   In the F920GOT-K, the key window is not displayed.

4.7.4 Moving and deleting the cursor

1) Moving the cursor using the cursor control keys
When the target object is selected using the cursor control keys, the cursor moves from the right to the left and from the top to the bottom.
At this time, the lower right corner of each target object is regarded as the reference of the display position.



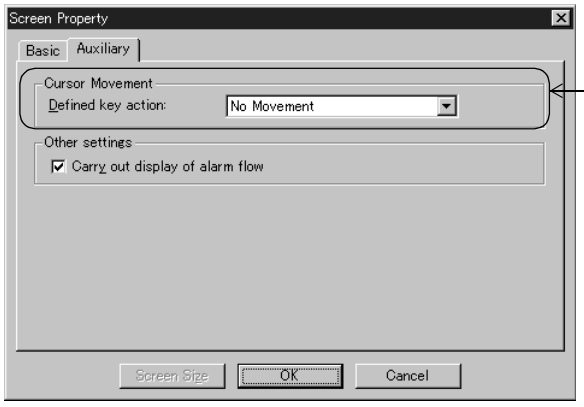
2) Moving and deleting the cursor using the [ENT] key
The cursor movement and deletion operations depend on "Auxiliary" on the "Screen Property" dialog box.

Setting on the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Screen]-[Property], and click "Auxiliary".

"Screen Property" dialog box



Select the "No movement", "User ID order" or "Clear cursor and Key window" for the cursor movement.

Defined key action

a) When "No movement" is selected
Even if a numeric value is input using the ten keys and the [ENT] key is pressed after that, the cursor is not moved or deleted.

b) When "User ID order" is selected
When a numeric value is input using the ten keys and the [ENT] key is pressed after that, the cursor moves in the movement destination ID sequence set in each target object. (The movement destination ID is set on the Numeric Input/ASCII Input setting window.)

c) When "Clear cursor and key window." is selected
When a numeric value is input using the ten keys and the [ENT] key is pressed after that, the cursor is deleted.
When changing data again, press the [SET] key to display the cursor again.
At this time, the cursor is displayed in the target object located at the upper left corner.

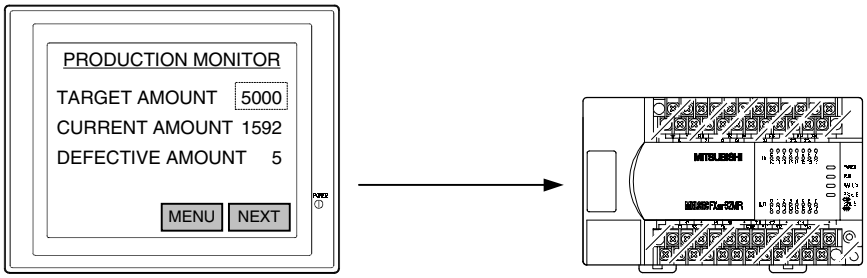
3) Deleting the cursor using the [ESC] key on the keypad
When the [ESC] key is pressed in the GOT (except the F920GOT-K), the "ENT Key Operation" set on the "Screen Property" dialog box is executed.
When the [ESC] key is pressed in the F920GOT-K, the cursor is deleted.

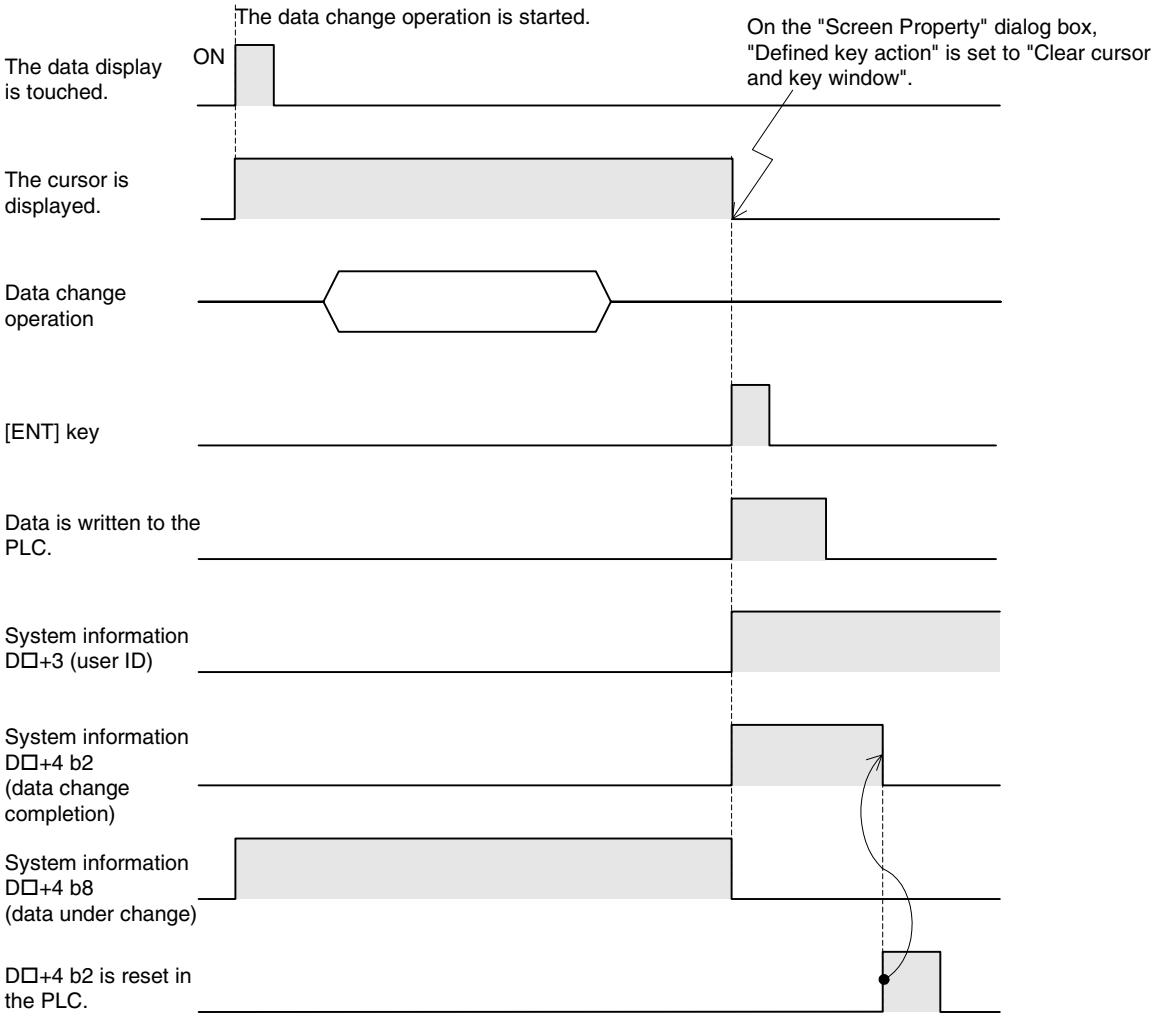
4.8 Data change completion flag and under-change flag

This section explains how to know in the PLC execution or completion of change of numeric or ASCII data.

4.8.1 Outline

While data is being changed or when data change is completed in Numeric Input or ASCII Input, a device specified in the system information turns ON.
And the ID code is written to the PLC so that the device whose data is changed is notified.
The numeric value setting completion flag and under change flag are available in both data change using touch switches and data change using the keypad.





Numeric Input/ASCII Input data change timing

Data change to the PLC is executed at the following timing:
When data is changed and the [ENT] key is pressed, the changed data is transferred to the PLC.
If data change is canceled (by pressing the [CLR] touch switch or the [ESC] key on the keypad) before the [ENT] key is pressed, data is not changed.

4.8.2 Data change completion flag

The write device D□+4 b2 in the system information turns ON as the completion flag.

1) System information (write device)
   D□+4 b2 "□" indicates the head No. specified as write device.
2) Operation
   When the [ENT] key is pressed on the ten-key window, the completion flag turns ON.
   When the key code of the touch switch is set to "000D" (write execution/cursor movement) and the touch switch is pressed, the completion flag turns ON.
   Once the completion flag turns ON, it remains ON.
   In order to set it to OFF, execute the RST (reset) instruction in a sequence program.

4.8.3 User ID

The ID code can be assigned to Numeric Input and ASCII Input in the screen creation software.
The user can set the ID code arbitrarily within the range from 1 to 65535.
This ID code is written to the following device in the PLC.

1) System information (write device)
   D□+3 "□" indicates the head No. specified as write device.
2) Operation
   By checking the current value of DO+3, the user can know in which Numeric Input or ASCII Input the data is changed.

4.8.4 Data under change flag (OS version upgrade)

The fact that data is being changed in Numeric Input or ASCII Input can be reported to the PLC. It can be prohibited to use the numeric or ASCII data being changed as calculation data in the PLC. This function is available in the following versions.

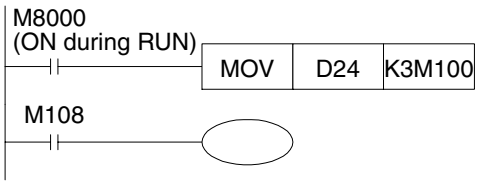
1) Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓(Ver6.00~)	F920GOT-K	✓
F930GOT	✓(Ver4.30~)	Handy GOT	✓(Ver6.00~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

2) System information (write device)
   D(□+4) b8 "□" indicates the head No. specified as write device.

3) Program example
When D□ of the write device (D□+4) is assigned to D20



Transferred from D24 to M100 to M111.

M108: ON while data is being input
M108: OFF while data is not being input

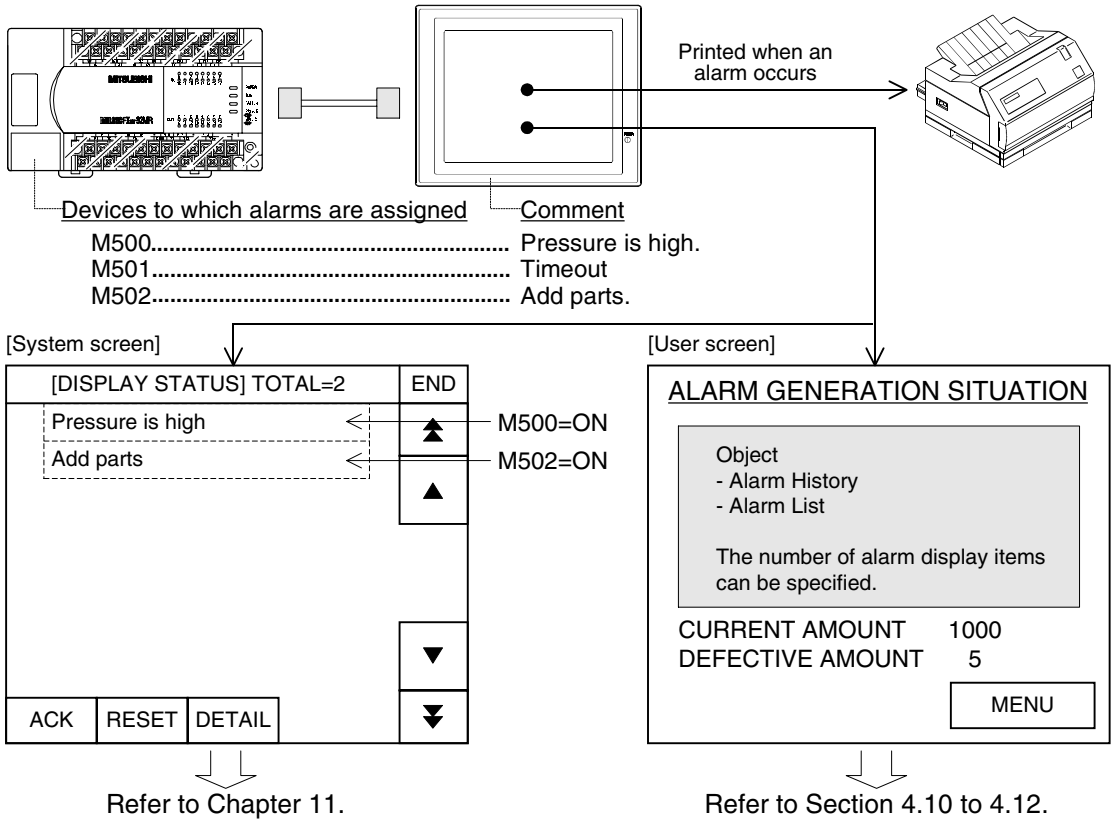
When the cursor is displayed in Numeric Input or ASCII Input, it is regarded that data is being input.

4.9 Alarm Display (object)

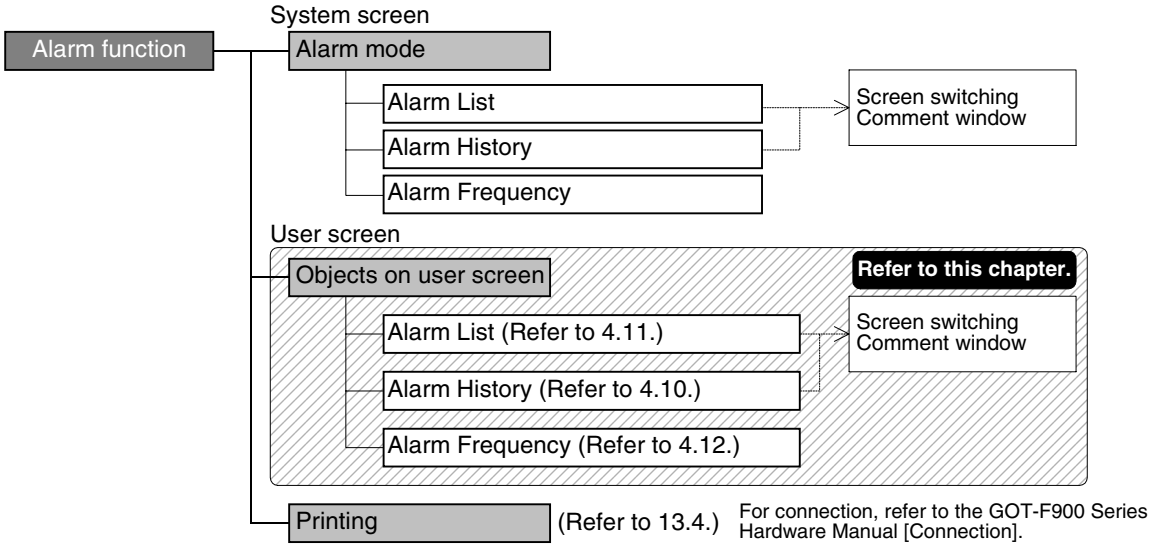
The alarm function of the GOT consists of the "alarm mode" of the system screen as well as "Alarm List" and "Alarm History" displayed on the user screen. (In the F920GOT-K, alarms can be displayed only on the user screen.)
This section explains "Alarm List" and "Alarm History" displayed on the user screen.

4.9.1 Outline

In the alarm mode, dedicated screens are provided. Alarms can be displayed using keys on the system menu screen. Or alarms can be displayed by switching from the user screen.
"Alarm List" and "Alarm History" can be combined with other objects on the user screen, and laid out arbitrarily.

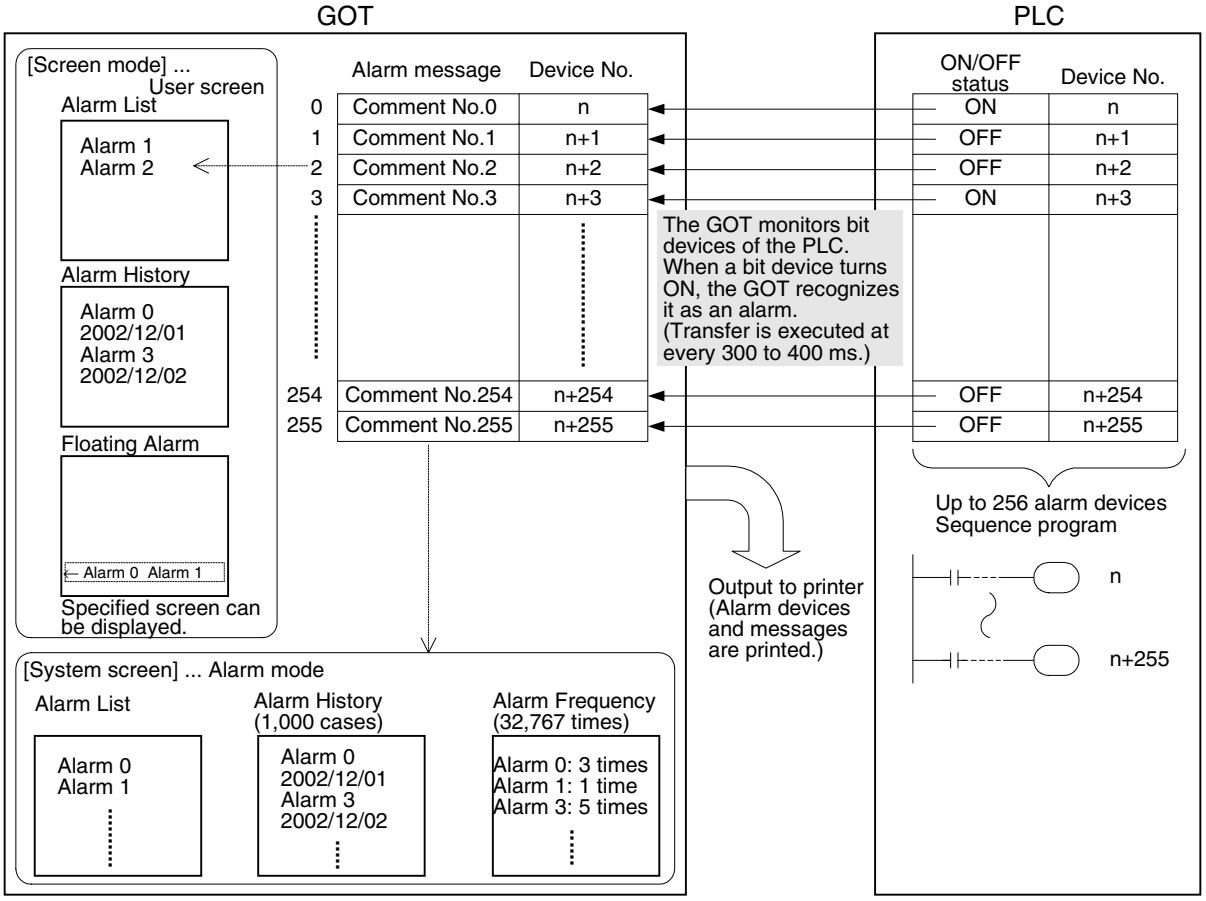


Alarm type list



4.9.2 Operation and number of alarms

The figure below shows the outline of alarm operations.
When one of consecutive bit devices (256 devices maximum generally and 32 devices in the F920GOT-K) of the PLC assigned for alarms turns ON, the GOT recognizes occurrence of alarm (at the rising edge of turning ON). If two or more bit devices turn ON, the GOT recognizes them one by one.



1) Alarm monitoring cycle

At every time (variable within the range from 600 in the increment of 100 ms) set in "Watch Cycle" in [Alarm History Common Setting], the GOT reads the ON/OFF status of devices specified for alarms.

In the case of F920GOT-K

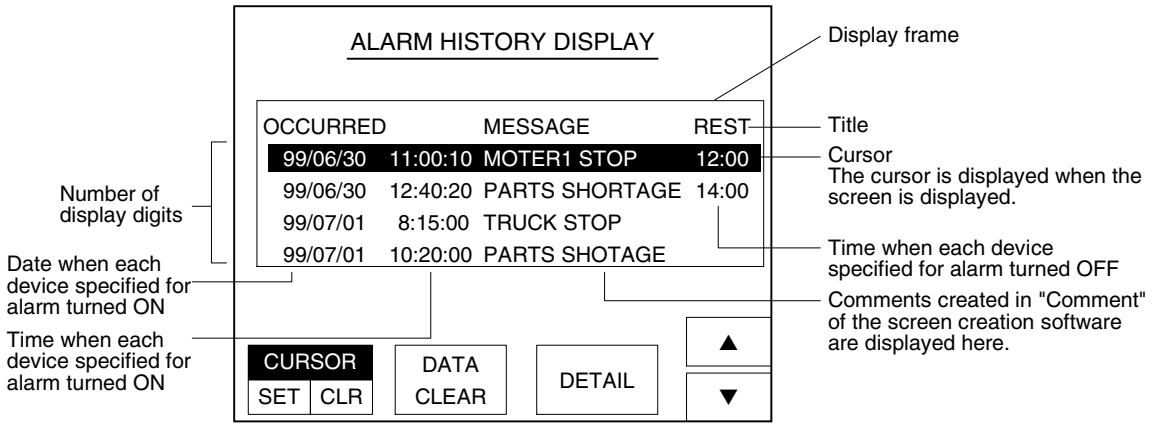
In the F920GOT-K, the monitoring interval varies considerably depending on the status of monitoring and routine processing (such as alarm function and status observation function). If the load is large and the interval among target bit devices is short, the F920GOT-K may not be able to detect pulse changes (between ON and OFF).
Let the ON/OFF status of bit devices be kept for sufficient period so that the F920GOT-K can securely detect pulse changes.

2) Maximum number of alarms
   The GOT saves the maximum number of cases/times shown below in Alarm History and Alarm Frequency, and stores them even if the power is set to OFF.
   a) Alarm History: 1,000 cases
      If the alarm history exceeds 1,000 cases, oldest cases are deleted and recording is continued.
      (Or oldest cases can be left if it is set so in the screen creation software.)
   b) Alarm Frequency: 32,767 times
      Alarms exceeding 32,767 times cannot be totaled.
3) Two or more alarms
   If two or more alarms have occurred, the alarm list is sorted so that bit devices specified for alarms are shown in the ascending order of the device No.
   The alarm history stores alarms in the time elapsing order. The Alarm History order can be specified to "from the oldest alarm to the newest alarm" or "from the newest alarm to the oldest alarm".
4) Handling of alarms occurred while the system screen is displayed
   If an alarm has occurred in any mode other than the user screen mode, its occurrence history and total are recorded.
   And switching to a specified screen and output to the printer are executed.
   (Overlap display is not executed.)

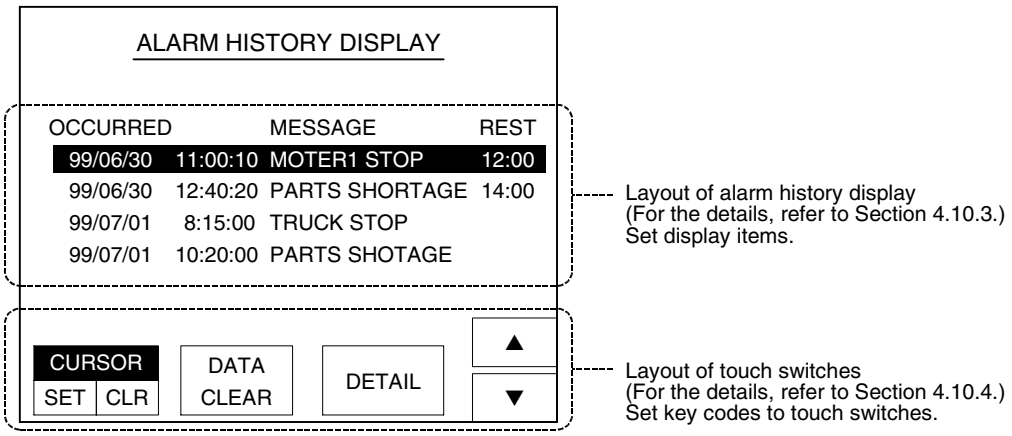
4.10 Alarm History (object)

When up to 256 (32 in the F920GOT-K) bit devices specified for alarms by the screen creation software turn ON, the date of occurrence and message corresponding to each of such bit devices are displayed as the history on the user screen.
The number of turning ON of each bit device specified for alarm and the time at which each bit device specified for alarm turns OFF can be displayed also (except in the F920GOT-K).

4.10.1 Display example



4.10.2 Creating the screen



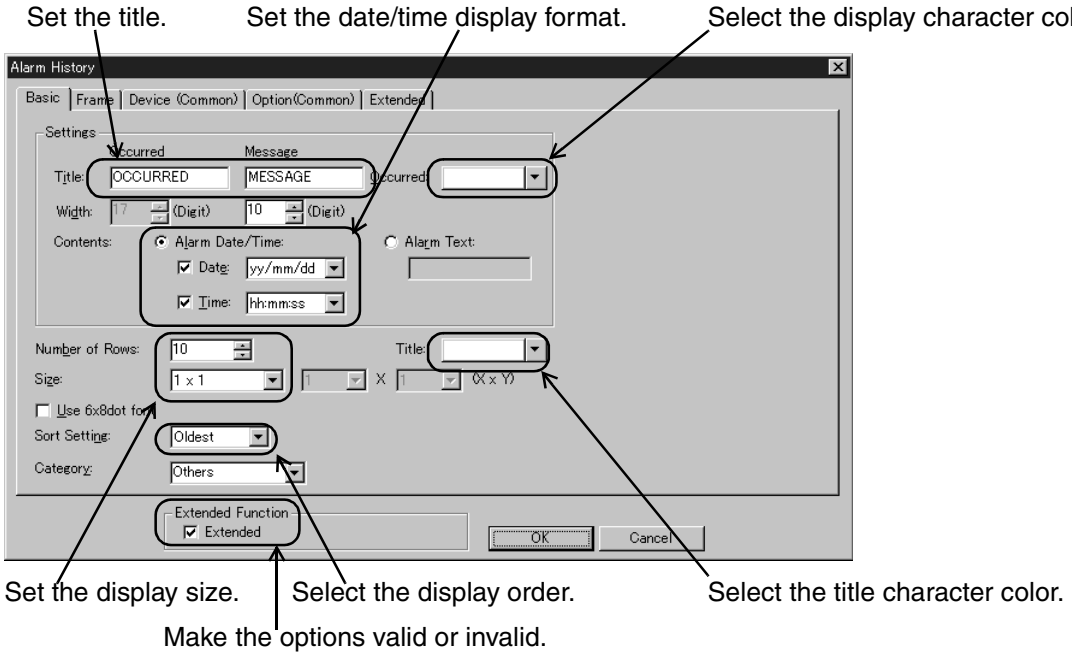
1) Creating the user screen
   Select [Object]-[Alarm History] from the tool menu of the screen creation software, then create the screen.
   Create the screen using touch switches [▲], [▼] and [DETAIL] upon necessity.
2) Creating the comment
   Select [Common]-[Comment] from the tool menu of the screen creation software, then create the comment.
   (Comments for the Alarm History Display and comments for the Alarm List Display can be set separately.)
3) Alarm common settings
   Let device comments used in alarm display be related.
   This setting is shared in the alarm mode of the system screen.
   Execute the settings using the screen creation software.
   (For the details, refer to Section 6.3.)

4.10.3 Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

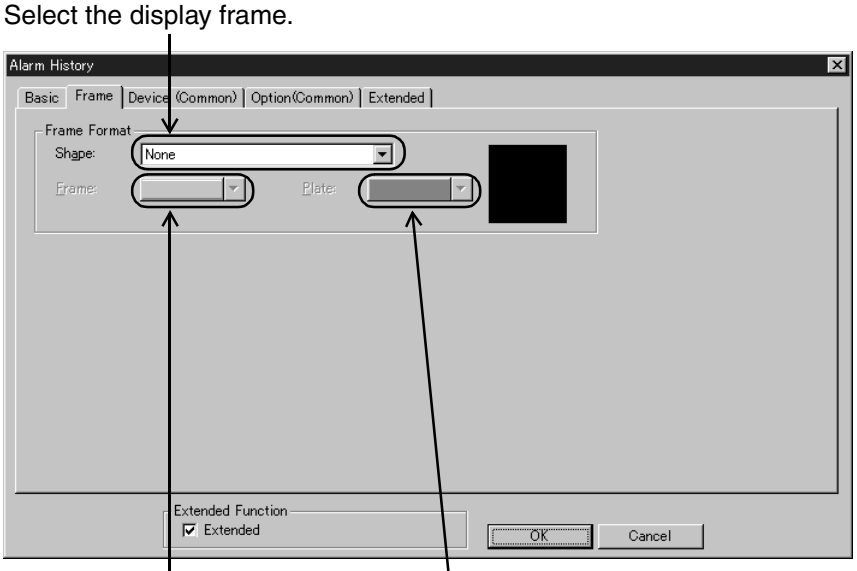
Select [Object]-[Alarm History], then click the on screen.
Double-click the "Alarm History" object displayed on the screen, and set each item on the dialog box shown below.

1) "Basic" tab



In the F920GOT-K, the date and time can be displayed only when it is connected to the FX Series PLC having the calendar (Real Time clock) function.

2) "Frame" tab



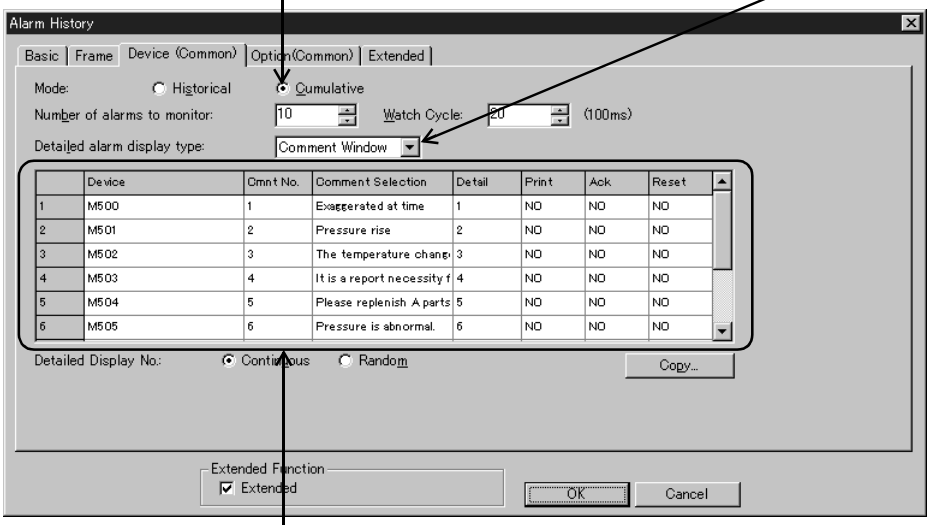
Select "white" when the used GOT is the two-color ("white and black" or "white and blue") type.

3) "Device (Common)" tab

The settings on the "Device (Common)" tab are shared in "Alarm History", "Alarm List" and "Alarm Frequency" on the system screen.

In order to display the number of turning ON of devices specified for alarms, select "Cumulative Mode".
(In addition, "Number of Times" should be set on the "Option" tab.)

Set the means for detailed display.

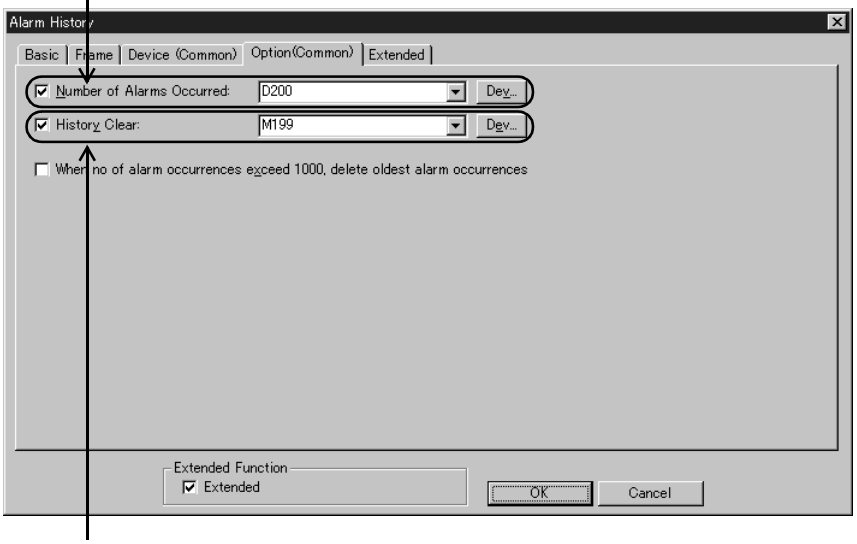


Set devices and comments displayed in the Alarm History, comment or screen No. used in the detailed display, and validness/invalidness of each operation.

4) "Option (Common)" tab

The settings on the "Option (Common)" tab are shared in "Alarm History", "Alarm List" and "Alarm Frequency" on the system screen.

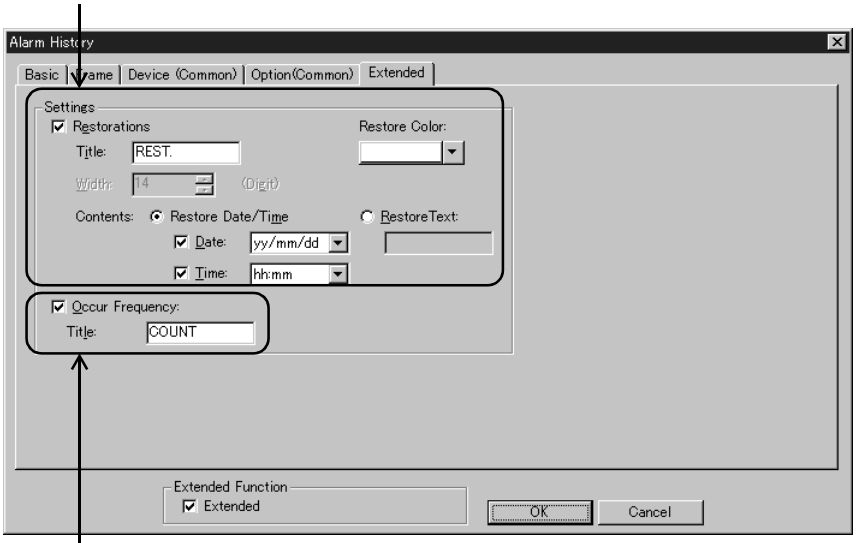
Specify a word device in which the history is stored.
The word device set here stores the total number of turning ON of all devices specified for alarms.



Set a bit device which deletes the history.
When the bit device set here turns ON, the entire history is deleted.
(The alarm history data and alarm frequency data on the system screen are deleted also.)

5) "Extended" tab

Set this area to display the date and time when devices specified for alarms returned to the OFF status.



Set this area to display the number of times of turning ON of devices specified for alarms.

4.10.4 Laying out the touch switches (except in the F920GOT-K)

If touch switches having key codes shown in the table below are present on the screen on which the alarm history is displayed, they operate as described in the "Application" column below.

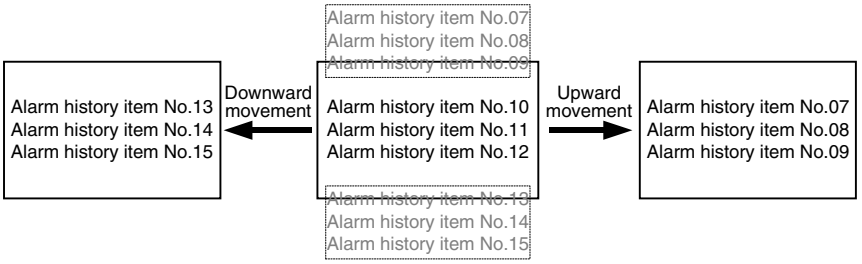
1) Key code types

Key code	Application	Reference
FFB0	Displays the cursor.	4.10.4
FFB1	Deletes the cursor.	
FFB2	Moves the cursor upward.	
FFB3	Moves the cursor downward.	
FFB6	Deletes the alarm display selected by the cursor.	4.10.7
FFB7	Deletes all alarm displays.	
FFB8	Displays the detailed information for an alarm selected by the cursor.	4.10.6
FFBB	Resets a specified device (alarm history).	4.10.8

2) Functions of key codes

a) Displaying/deleting the cursor (option)
When the screen is displayed, the cursor is displayed at the top.
For deleting the cursor, set the key codes for cursor display and cursor deletion also.

b) Moving the cursor upward/downward (essential)
- When the cursor is displayed
  The cursor is moved by one line at a time to select alarm item.
- When the cursor is not displayed
  The lines of the alarm history items currently displayed on the screen are regarded as one page, and the history is moved upward or downward by one page at a time.



c) Deleting the alarm history (option)
The alarm history is stored in the memory built in the GOT-F900. A history item selected by the cursor or all history items can be deleted.
Set the key codes for alarm history deletion upon necessity.

d) Displaying the detailed information (comment window) and switching the screen (option)
When a touch switch to which the detailed information display function (key code "FFB8") is assigned is pressed, the alarm message (comment window) is displayed or the base screen is switched for detailed display.
For detailed display, the following settings are required.
- It is required to set touch switches for moving the cursor upward and downward.
- It is required to select [Common] - [Alarm History] in the screen creation software, then set "Detailed alarm display type" to "Comment Window" or "Base Screen".

4.10.5 Operation using the keypad (in the F920GOT-K)

In the F920GOT-K, alarms can be displayed in "Alarm List" and "Alarm History" in the User screen mode.
At this time, the display can be scrolled and alarms can be deleted using the keypad.
The following contents are assigned to keys on the keypad.

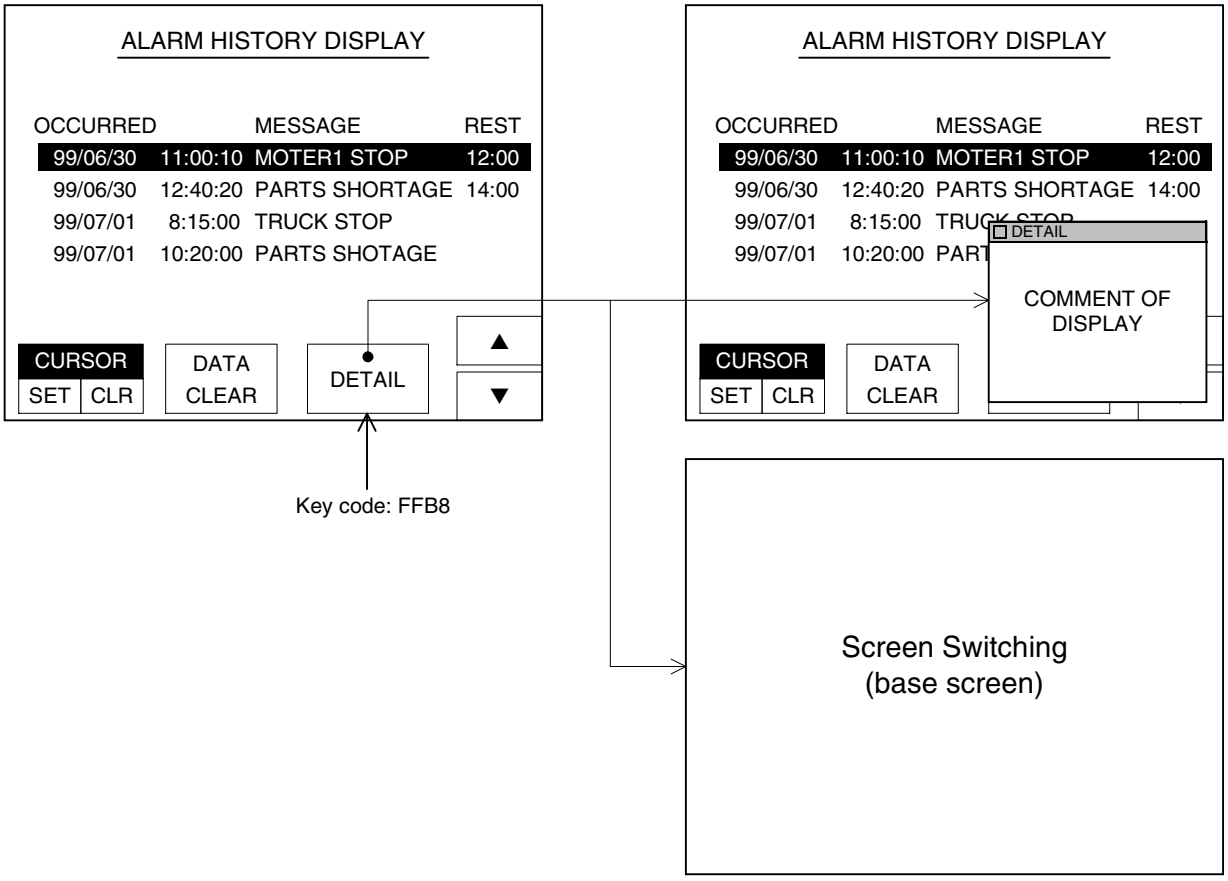
Key on keypad	Function	Alarm display	
		List	History
[-]	Displays/hides the cursor. (The cursor is displayed or hidden alternately every time the [-] key is pressed.)	✓	✓
[▲]	Moves the cursor upward.	✓	✓
[▼]	Moves the cursor downward.	✓	✓
[▶]	Detail display.	✓	✓
[9]	Resets a specified device. (When setting the alarm history in the screen creation software, make the reset function valid.)	--	✓

The keys above are invalid while displayed numeric or ASCII data is being changed (that is, while the cursor is displayed).
Press the [ESC] key to delete the cursor, then use the keys above.

4.10.6 Setting the detailed display (comment window/screen switching)

Put the cursor on an alarm message whose details are to be displayed, then press the "Detail" key to display the "Specified screen" or "Comment window".

1) Display example



2) Important points in screen creation

In the setting for screen creation, either one among "None", "Comment Window" and "Base Screen" can be selected.

The setting is handled as the common setting in the following displays, and regarded as the common setting in the entire project.

Object		System screen	
Alarm history display	**Alarm list display**	**Alarm history display**	**Alarm list display**
Common	Common	Common	Individual

a) When not using the detailed display

Select [Common Setting]-[Alarm History] in the screen creation software, then set "Detailed Alarm Display Type" to "None".

b) Comment window

1. Creating a comment to be displayed

   Select [Common Setting]-[Comment] from the tool menu in the screen creation software, then create a comment.
   If comments will be used for other purposes also, use a comment No. easy to understand while leaving unused comment Nos. (An already created comment may be used.)

2. Common setting for alarms

   Set the relationship of comments to be used in the detailed display (comment window) in the Alarm History Display.
   Consecutive comments are made related to alarms, starting from the comment No. (head) specified in "Detail No." in [Common Setting]-[Alarm History] in the screen creation software.
   This setting is shared in the "alarm mode" on the system screen.

c) Base screen (screen switching)

1. Creating the detailed contents of alarm on the user screen

   Consecutively create a required number of screens to be switched on the user screen (base screen).

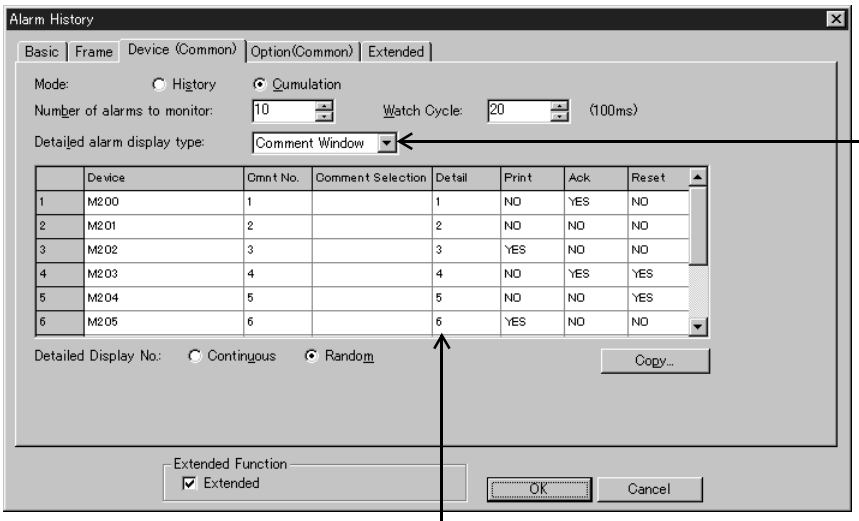
2. Common setting for alarms

   Set the relationship of screen Nos. to be used in the detailed display (base screen) in the Alarm History Display.
   Consecutive switching destination screen Nos. are made related to alarms, starting from the No. (head) specified in "Detail No." in [Common Setting]-[Alarm History] in the screen creation software.
   This setting is shared in the "alarm mode" on the system screen.

3) Setting in the screen creation software (GT Designer2)

Operating procedure Tool menu

Select [Common]-[Alarm History].
Click the "Device (Common)" tab.



Set the means for detailed display.

When "Detailed Alarm History Type" is set to "Comment Window"
Set the head of comment Nos. to be related to alarms.
When "Detailed Alarm History Type" is set to "Base Screen"
Set the head of screen Nos. to be related to alarms.

4.10.7 Clearing the alarm history using the key codes (OS version upgrade)

In the following versions of the GOT-F900, key codes can be assigned to touch switches to clear the alarm history.

Applicable GOT and OS version

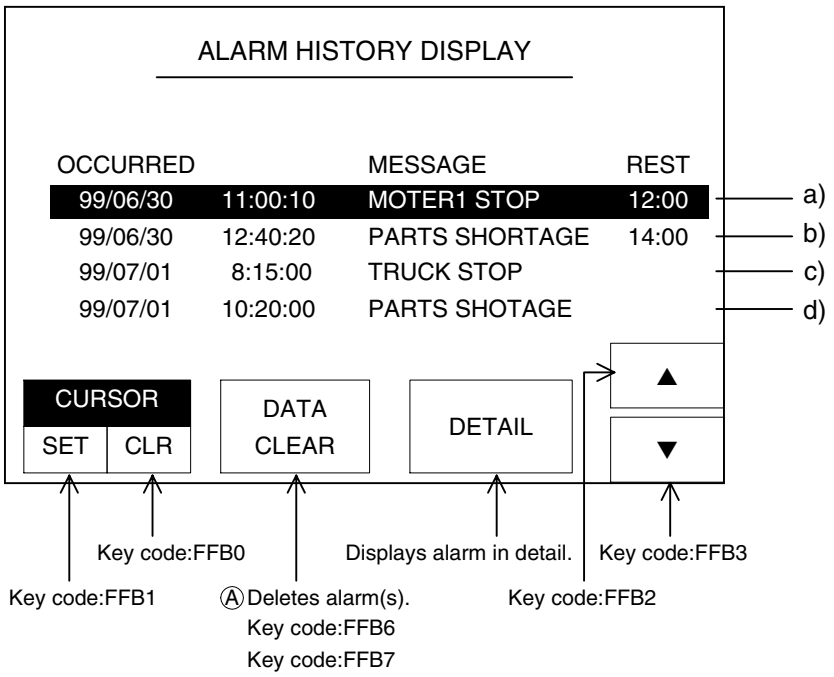
Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓(Ver3.00~)	F920GOT-K	×
F930GOT	✓(Ver2.00~)	Handy GOT	✓(Ver3.00~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

When a touch switch to which a key code shown below is assigned is pressed on the screen displaying the Alarm History function, the Alarm History on the screen can be deleted.

Key code	Function
FFB6	Deletes an alarm selected by the cursor from the history and screen if it is restored.
FFB7	Deletes all alarms from the history and screen without regard to the cursor position.

1) Display example



2) Types of alarm deletion key code

When the key code "FFB6" is assigned to A)

The alarm a) in which the cursor is located is deleted from the history and screen.
If the cursor is located in the alarm c) or d), the alarm is not deleted from the screen because it has not been restored yet.

When the key code "FFB7" is assigned to A)

The alarms a) and b) are deleted from the screen.
Though the alarm a) and alarm d) are the same type, the alarm d) is not deleted from the screen because it has not been restored yet.

4.10.8 Recovery from alarm (resetting a specified device)

When a device set in the Alarm History is set to OFF from ON, the system is recovered from the corresponding alarm, and the time of recovery is stored in the GOT-F900.
Execute the recovery in the following methods.

- Operation using a touch switch (key code "FFBB")
  (The setting method is explained below.)
- Resetting the device in the sequence program

Setting in the screen creation software (GT Designer2)

1) Set the key code to a touch switch.

   Operating procedure: Tool menu

   Select [Object]-[Switch]-[Key Code Switch].
   Click the "Basic" tab, and set "FFBB" to "Key Code".

2) Setting in Alarm History (Common)

   Operating procedure: Tool menu

   Select [Common]-[Alarm History].
   Click the "Device (Common)" tab, then set "Reset" to "Yes" for an alarm to be reset.

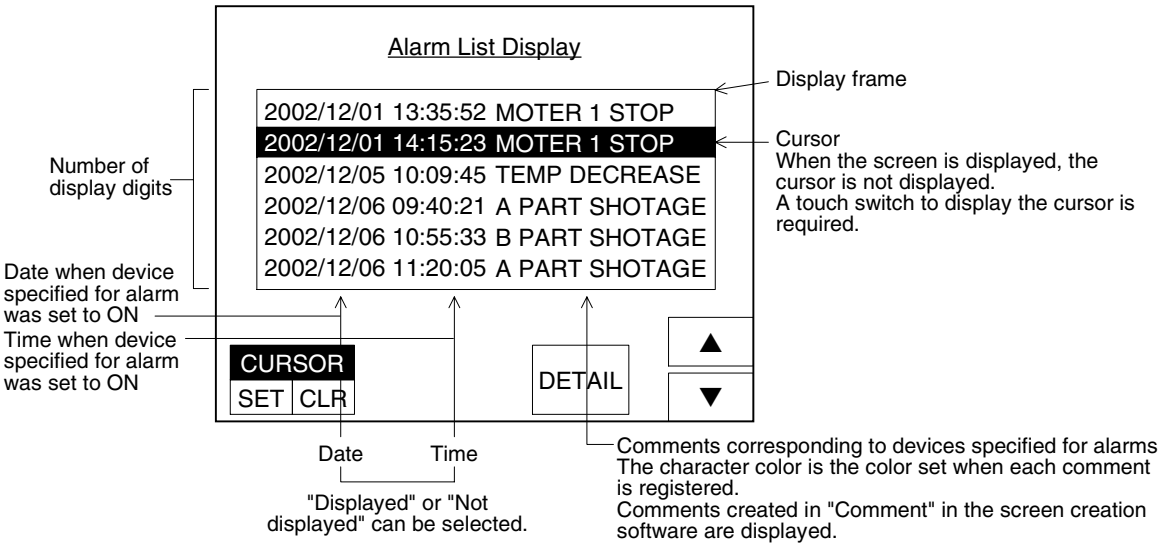
4.10.9 Cautions on use

1) When the black-and-white LCD type GOT is used
   In the F940GOT whose LCD consists of two colors (white and black), characters of the "Alarm History" and "Alarm List" objects are displayed in black. (A line with the cursor is displayed in white.)
   Because the default value of the screen color is black in the GT Designer2, only one line with the cursor is displayed in such GOT.
   When using these objects in such GOT, set the background to white in "Plate Color".
2) When the F920GOT-K is used
   To display "date + time", select a combination of "month/day" and "hour:minute".
   Key codes cannot be assigned to switches (such as function switches and ten keys) on the keypad.
3) When the F930GOT-K is used
   Key codes cannot be assigned to switches (such as function switches and ten keys) on the keypad.

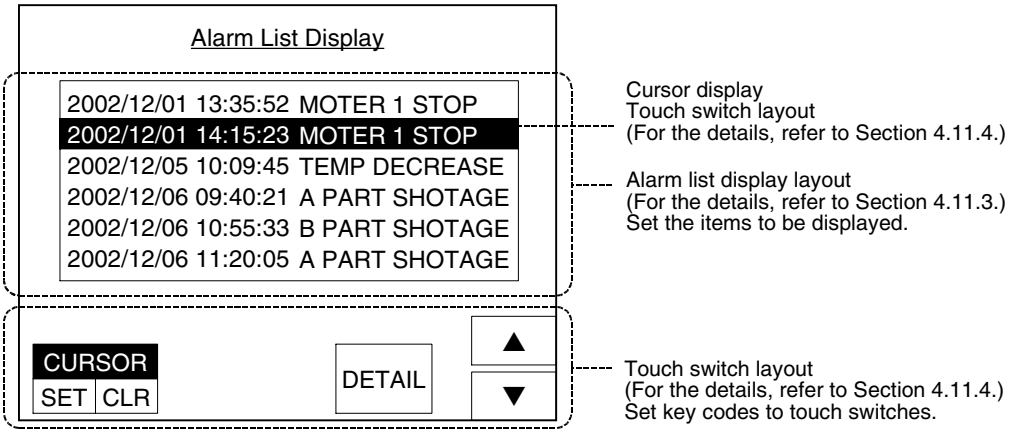
4.11 Alarm List (object)

When up to 256 (32 in the F920GOT-K) devices specified for alarms have turned ON, messages corresponding to such devices and the time at which each device has turned ON are displayed.
The contents of settings here may be different from the alarm mode of the system screen and "Alarm History" described in the preceding section.

4.11.1 Display example



4.11.2 Creating the screen



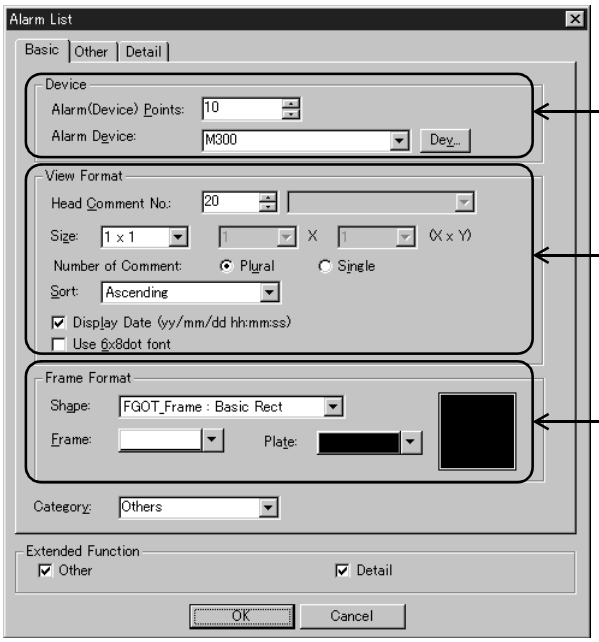
1) Creating the user screen
   Select [Object] - [Alarm List Display] from the tool menu of the screen creation software, then create the screen.
   Create the screen using touch switches [▲], [▼] and [DETAIL] upon necessity.
2) Creating comments
   Select [Common] - [Comment] from the tool menu of the screen creation software, then create comments. (Comments for the Alarm History and comments for the Alarm List can be set separately.)

4.11.3 Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Object]-[Alarm List], then click the on screen.
Double-click the "Alarm List" object displayed on the screen, and set each item on the dialog box shown below.

1) "Basic" tab

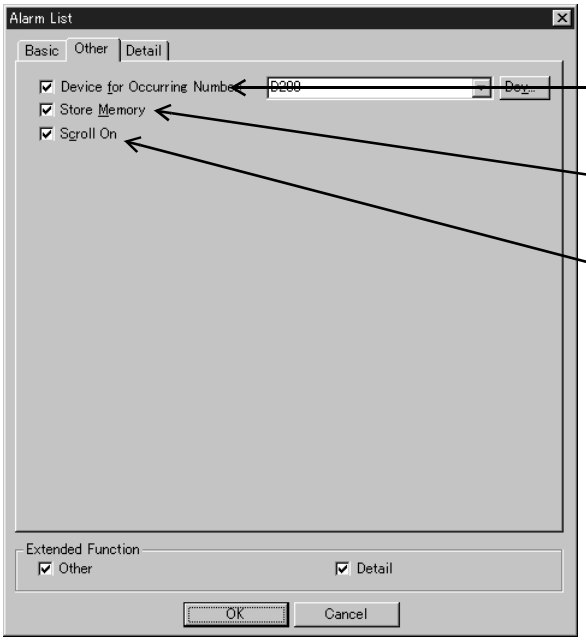


Set a device specified for alarm.

Set the display size, display order and date/time display.

Set the frame color and plate color.
Select "white" when the used GOT-F900 is the two-color ("white and black" or "white and blue") type.

2) "Other" tab

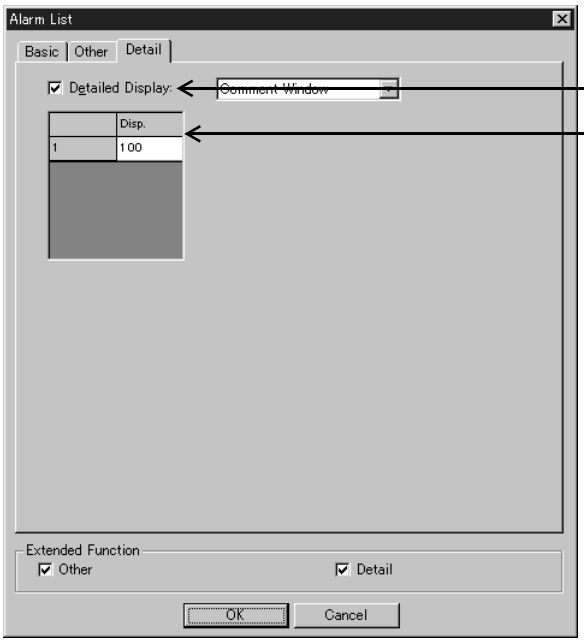


The number of alarm bits present currently is stored in the device specified here.

Give a check mark (✓) to display the date and time of occurrence.

Give a check mark (✓) to allow scroll of alarm items using the cursor control keys when alarms present currently exceed the lines which can be displayed at a time in the display area on the screen.

3) "Detail" tab



Give a check mark (✓) to "Detailed".

Set the head No. to assign comments in the comment list.

4.11.4 Laying out the touch switches (except in the F920GOT-K)

If touch switches having key codes shown in the table below are present on the screen on which the alarm list is displayed, they operate as described in the "Application" column below.

1) Key code types

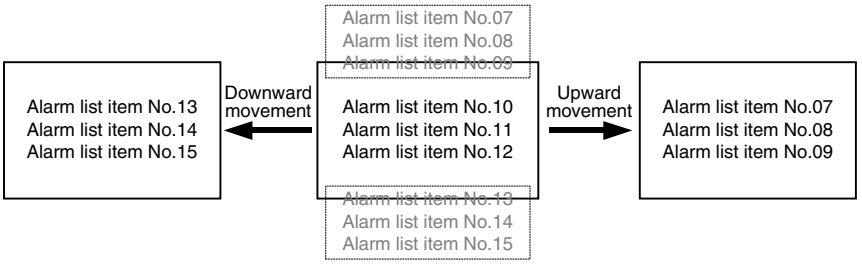
Key code	Application	Reference
FFB0	Displays the cursor.	4.11.4
FFB1	Deletes the cursor.	
FFB2	Moves the cursor upward.	
FFB3	Moves the cursor downward.	
FFB8	Displays the detailed information for an alarm selected by the cursor.	4.11.6

2) Functions of key codes

a) Displaying/deleting the cursor (arbitrary)
???
???

b) Moving the cursor upward/downward (arbitrary)

- When the cursor is displayed
???
- When the cursor is not displayed
The lines of the alarm history items currently displayed on the screen are regarded as one page, and the list is moved upward or downward by one page at a time.



- ???
???

c) Displaying the detailed information (comment window) and switching the screen (arbitrary)
When a touch switch to which the detailed information display function (key code "FFB8") is assigned is pressed, the alarm message (comment window) is displayed or the base screen is switched for detailed display.
For detailed display, the following settings are required.
- It is required to set touch switches for moving the cursor upward and downward.
- ???

4.11.5 Operation using the keypad (in the F920GOT-K)

In the F920GOT-K, alarms can be displayed in "Alarm List" and "Alarm History" in the User screen mode.
At this time, the display can be scrolled using the keypad.
The following contents are assigned to keys on the keypad.

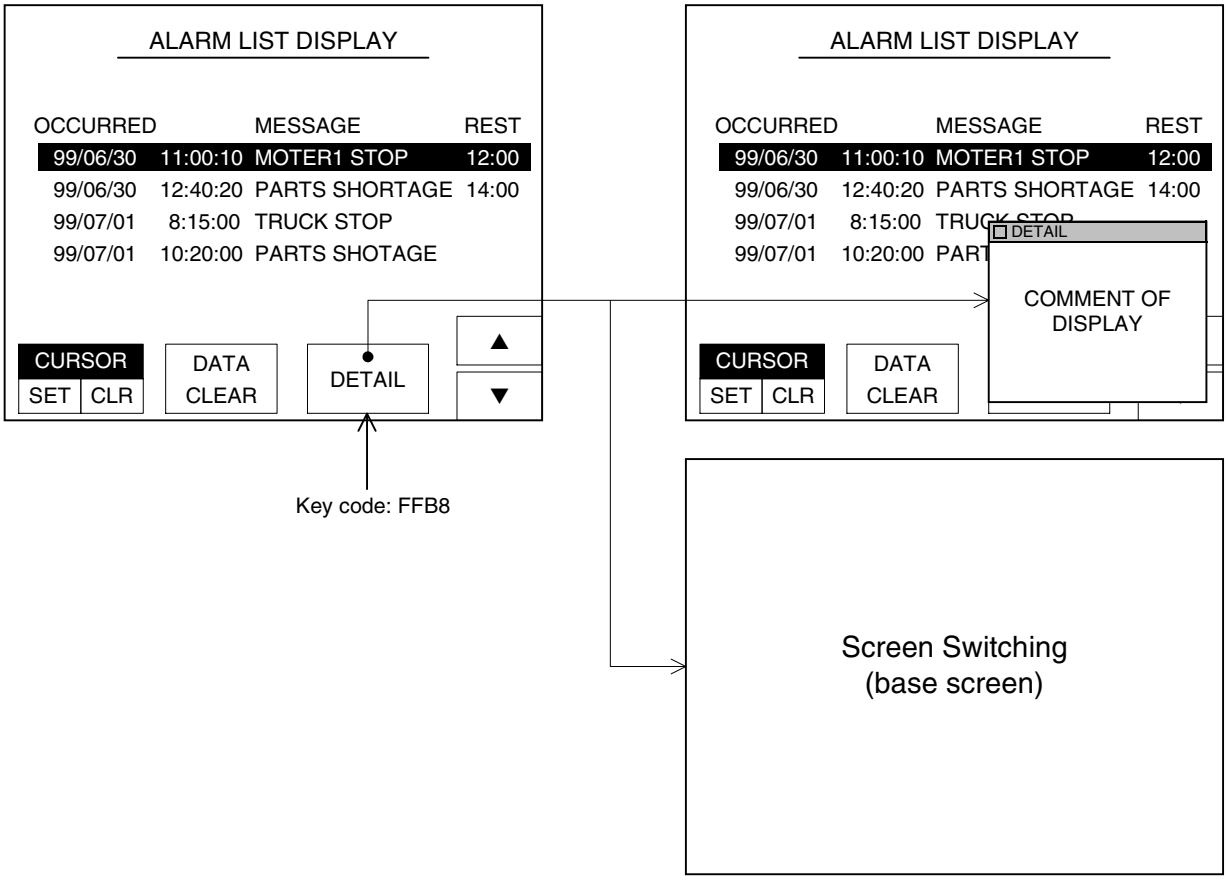
Key on keypad	Function	Alarm display	
		List	History
[-]	Displays/hides the cursor. (The cursor is displayed or hidden alternately every time the [-] key is pressed.)	✓	✓
[▲]	Moves the cursor upward.	✓	✓
[▼]	Moves the cursor downward.	✓	✓
[▶]	Detail display.	✓	✓
[9]	Resets a specified device. (When setting the alarm history in the screen creation software, make the reset function valid.)	✓	✓

The keys above are invalid while displayed numeric or ASCII data is being changed (that is, while the cursor is displayed).
Press the [ESC] key to delete the cursor, then use the keys above.

4.11.6 Setting the detailed display (comment window/screen switching)

Put the cursor on an alarm message whose details are to be displayed, then press the "Detail" key to display the "Screen Switching" or "Comment" window.

1) Display example



2) Important points in screen creation

In the setting for screen creation, either one among "None", "Comment Window" and "Base Screen" can be selected.

The setting can be executed individually for each creation of the Alarm List Display (object).

Object		System screen	
Alarm history display	**Alarm list display**	**Alarm history display**	**Alarm list display**
--	--	--	Individual

a) When not using the detailed display

Select [Object]-[Alarm List Display] in the screen creation software, then delete a check mark (✓) from "Detailed".

b) Comment window

1. Creating a comment to be displayed

Select [Common Setting]-[Comment] from the tool menu in the screen creation software, then create a comment.

If comments will be used for other purposes also, use a comment No. easy to understand while leaving unused comment Nos.

(An already created comment may be used.)

2. Creating the Alarm List Display object
   Select [Common Setting]-[Alarm History] in the screen creation software, then create "Alarm List Display" on the user screen.
3. Setting the Alarm List Display
   Set the relationship of the created "Alarm List Display" object with comments to be used in the detailed display (comment window).
   Consecutive comments are made related, starting from the specified No. (head).
   This setting is valid to each created "Alarm List Display".

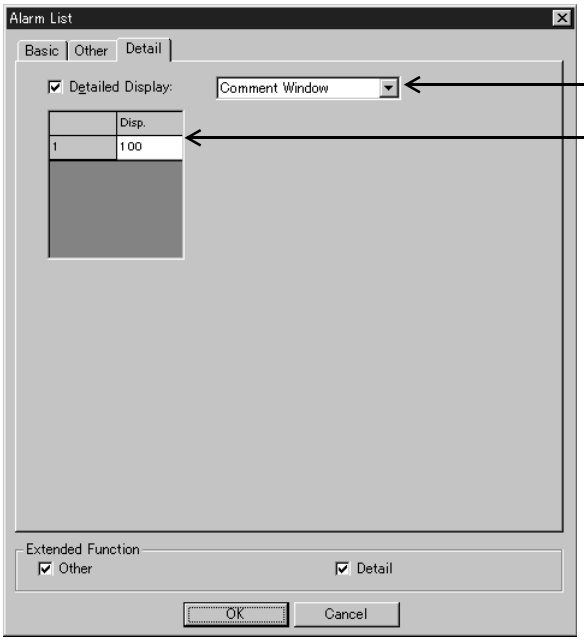
c) Base screen (screen switching)

1. Creating the detailed contents of alarm on the user screen
   Consecutively create a required number of screens to be switched on the user screen (base screen).
2. Creating the Alarm List Display object
   Select [Common Setting]-[Alarm History] in the screen creation software, then create "Alarm List Display" on the user screen.
3. Setting the Alarm List Display
   Set the relationship of the created "Alarm List Display" object with screen Nos. to be used in the detailed display (base screen).
   Consecutive base screen Nos. are made related, starting from the specified No. (head). This setting is valid to each created "Alarm List Display".

3) Setting in the screen creation software (GT Designer2)

Operating procedure Tool menu

Select [Object]-[Alarm List Display].
Click the "Detail" tab, give a check mark (✓) to "Detailed", then select "Comment Window" or "Base Screen".



Give a check mark (✓) to "Detailed".

When "Detailed Alarm History Type" is set to "Comment Window"
Set the head of comment Nos. to be related to alarms.
When "Detailed Alarm History Type" is set to "Base Screen"
Set the head of screen Nos. to be related to alarms.

4.11.7 Cautions on use

1) When using the black-and-white LCD type GOT
   In the two-color (black-and-white) LCD type GOT such as F940GOT, characters of the Alarm History Display and Alarm List Display objects are drawn in black (and the cursor line is drawn in white).
   The initial value of the screen color of the GT Designer2 is black. As a result, only one line having the cursor is displayed in these objects.
   To cope with this inconvenience, when using these objects, set the background color ("Plate" on the "Basic" tab) to white.

2) When using the F920GOT-K
   Key codes cannot be assigned to the switches (such as function switches and ten keys) on the keypad.

3) When using the F930GOT-K
   Key codes cannot be assigned to the switches (such as function switches and ten keys) on the keypad.

4) Date and time of alarm occurrence
   When the date and time are displayed in the Alarm List Display, the following operation is executed according to the screen creation setting.

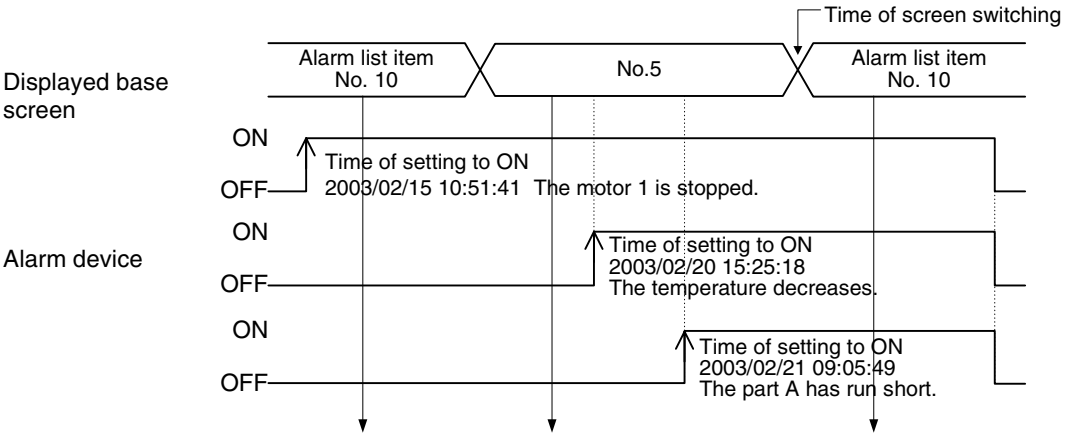
   When a check mark is given to "Store Memory"
   Give a check mark to "Store Memory" to acquire the date and time of alarm occurrence even while the screen on which the Alarm List Display is not set is displayed.
   By this setting, the alarm occurrence status is always monitored, and saved in the memory inside the GOT-F900.

   When a check mark is not given to "Store Memory"
   If the alarm device was set to ON before the screen on which the Alarm List Display is set is displayed, the date and time "when the screen on which the Alarm List Display is set is displayed" is displayed as the date and time of alarm occurrence.

   Timing at which the data saved in the memory is deleted
   The data saved in the memory is deleted when the power of the GOT-F900 is set to OFF.

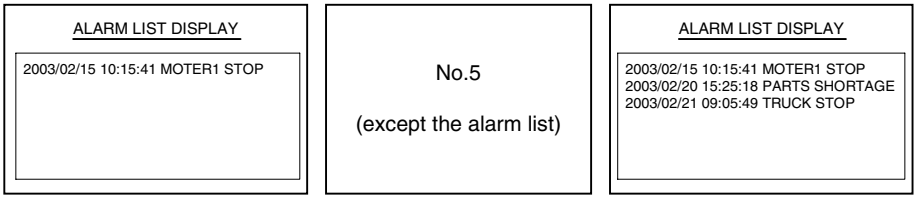
Operation examples

The figure below shows differences between the case in which a check mark is given to "Store Memory" and the case in which a check mark is not given to "Store Memory" when screen switching or setting to ON/OFF of alarm device is executed at the timing shown below.



The date and time of alarm occurrence are displayed correctly.

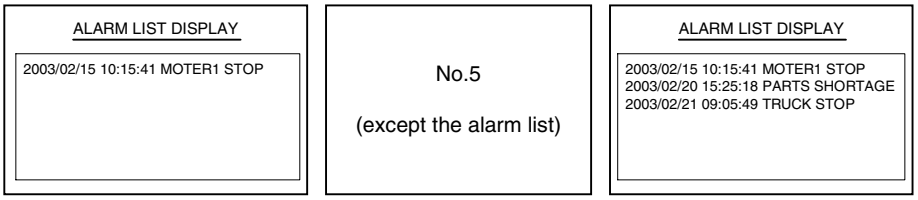
When a check mark is given to "Save Memory"



The date and time of alarm occurrence are displayed correctly.

The date and time when the screen No. 5 is switched to the screen No. 10 are displayed as the date and time of alarm occurrence.

When a check mark is given to "Save Memory"



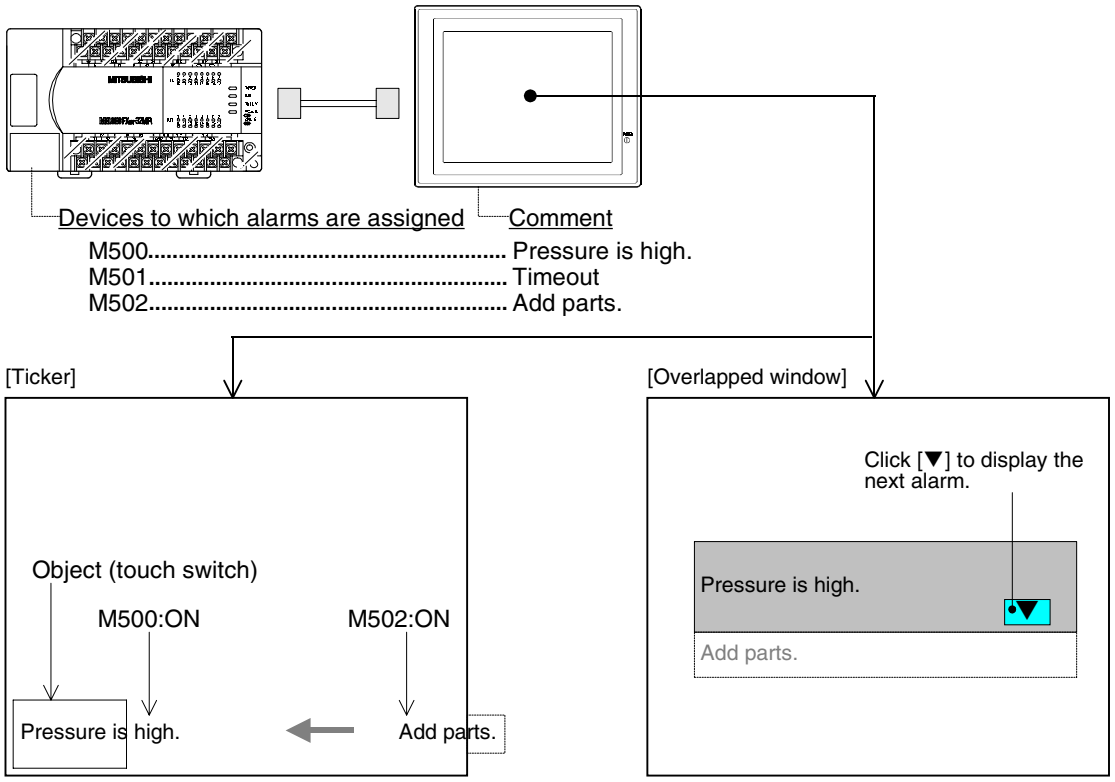
The date and time when the screen No. 5 is switched to the screen No. 10 are displayed as the date and time of alarm occurrence.

4.12 Floating Alarm Display

When a device specified for alarm turns ON, a corresponding alarm message is displayed on the user screen.

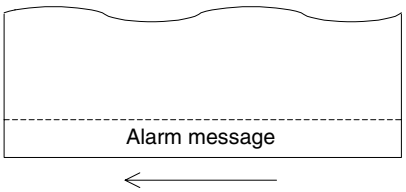
4.12.1 Outline

The "floating alarm" function offers two methods: Alarms can be displayed continuously from the right to the left of the screen (ticker) in one method, and alarms can be displayed one by one on the window (overlapped window) in the other method.



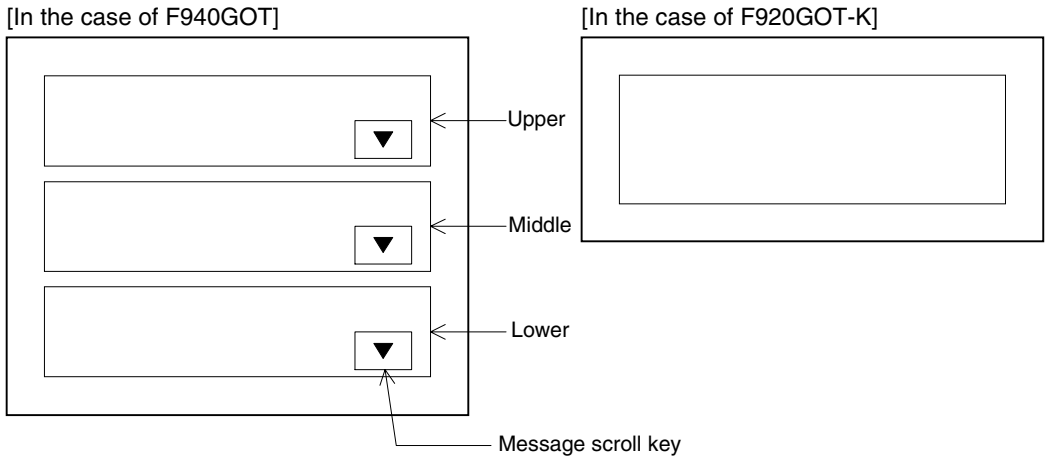
1) Ticker

When a device specified for alarm turns ON, corresponding alarm message is displayed on the user screen.



Messages are scrolled from the right to the left.
The display location can be specified to either one among top, middle and bottom using the screen creation software.
If two or more alarms have occurred, they are displayed in the ascending order of the No. of devices specified for alarms.
When a device specified for alarm turns OFF, corresponding alarm message is deleted from the user screen.
Messages are displayed transparently on the user screen, and touch switches on the user screen are valid.

2) Overlapped window (comment window)
If the alarm notice method is set to "Overlapped Window", when a device specified for alarm turns ON, corresponding alarm message is displayed on the user screen.
The display location can be specified to either one among upper, middle and lower using the screen creation software.



Messages are displayed in up to 10 full-width characters or up to 20 half-width characters.
If two or more alarms have occurred, messages can be scrolled using the message scroll key.
If error messages related to the system have occurred, they are displayed in the same way.
When devices specified for alarms turn OFF, the window is closed.
This overlapped window is displayed in the user screen mode (while the user screen is displayed).

a) When the system screen is displayed
Messages are deleted once. When the user screen is displayed again, however, the overlapped window is displayed again (if devices specified for alarms are ON.)

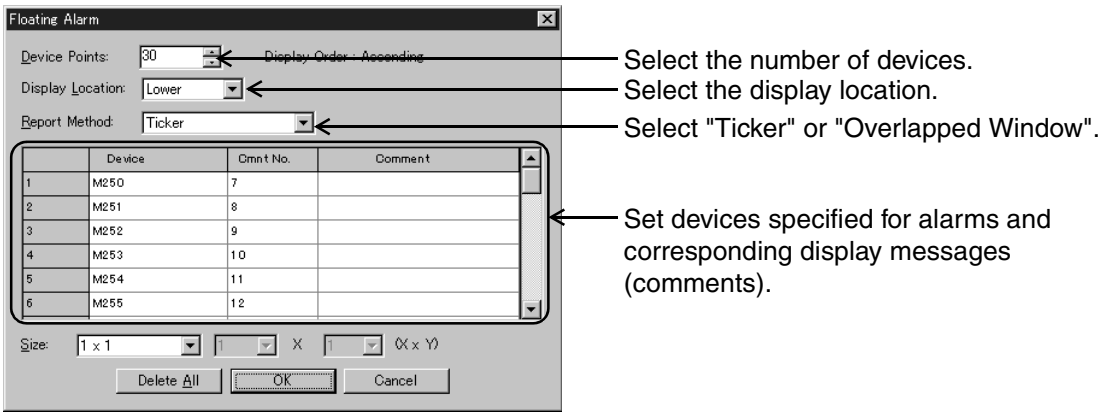
b) Cautions on the F920GOT-K
The setting of top/medium/bottom is invalid.
Messages can be scrolled using the [ESC] key.

4.12.2 Setting in the screen creation software (GT Designer2)

1) Assigning devices specified for alarms

Operating procedure | Tool menu

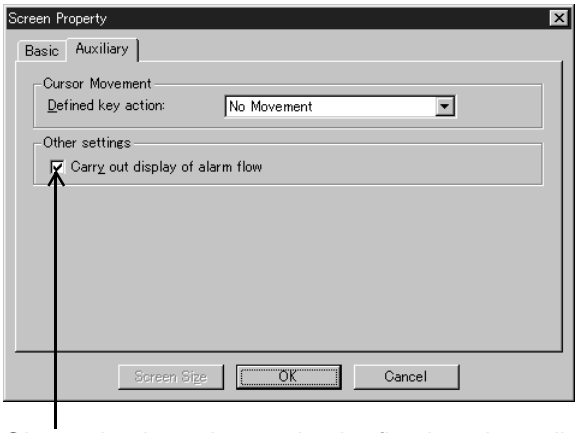
Select [Common]-[Floating Alarm].



2) Making the floating alarm display function valid or invalid (in the unit of screen)
When the ticker and overlapped window are not desired on some screens, set the following.

Operating procedure | Tool menu

Make active the screen on which the floating alarm display function is to be valid, select [Screen]-[Properties], then click the "Auxiliary" tab.



Give a check mark to make the floating alarm display function valid.

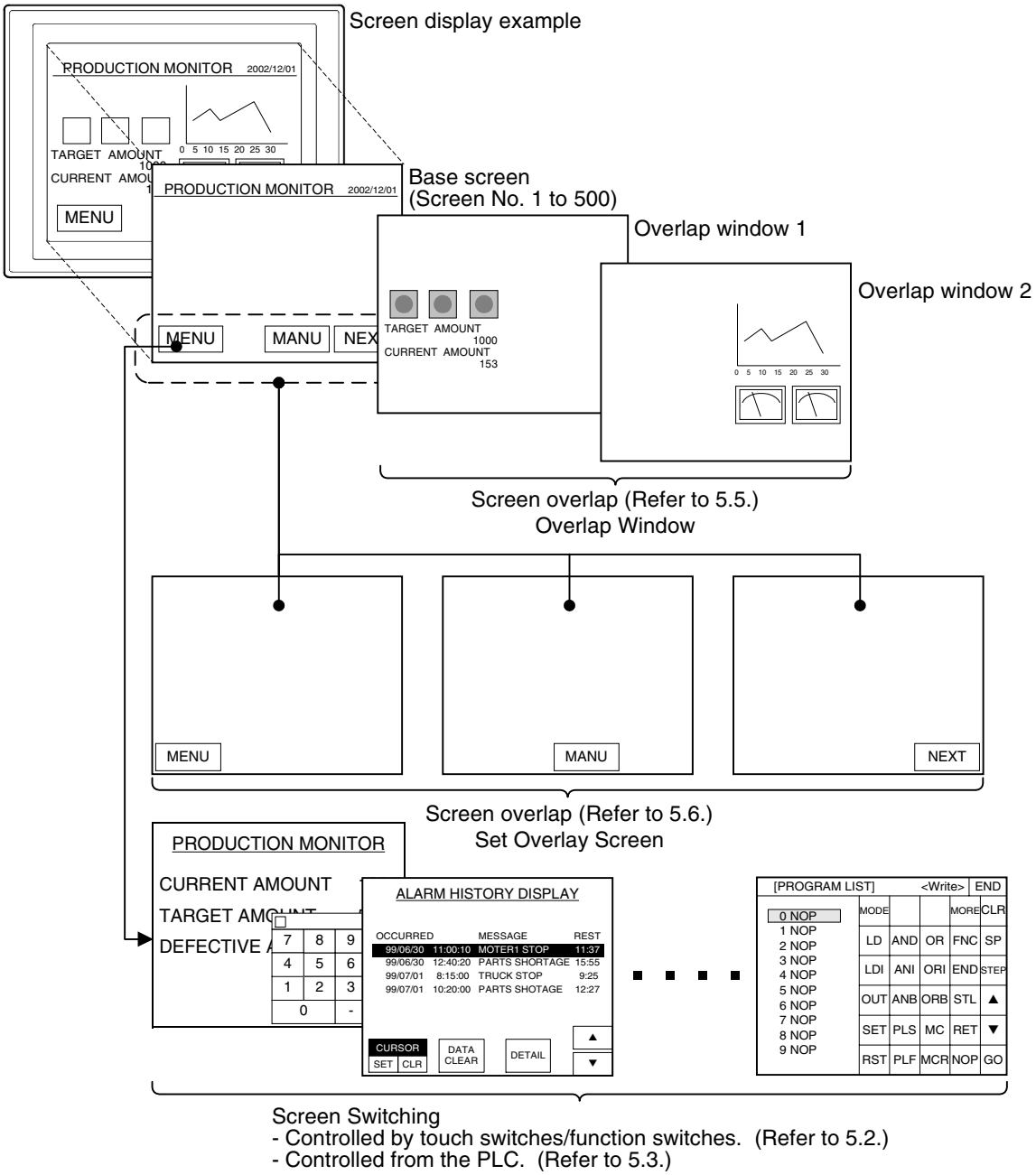
5. Switching and Overlap of Screens

This chapter explains the functions to switch and overlap two or more user screens and system screens.

5.1 Outline

In the GOT, up to 500 screens can be created. The GOT controls these screens while assigning a number in the range from 1 to 500 to each screen.
By manipulating the GOT or from the PLC, the screen to be displayed next from the currently displayed screen can be specified.
In the GOT, two or more created screens can be overlapped in display.
There are the "overlay screen setting" function which specifies overlap screens in advance in the screen creation software and the "overlap window" function which specifies overlap screens from the PLC.

Screen image



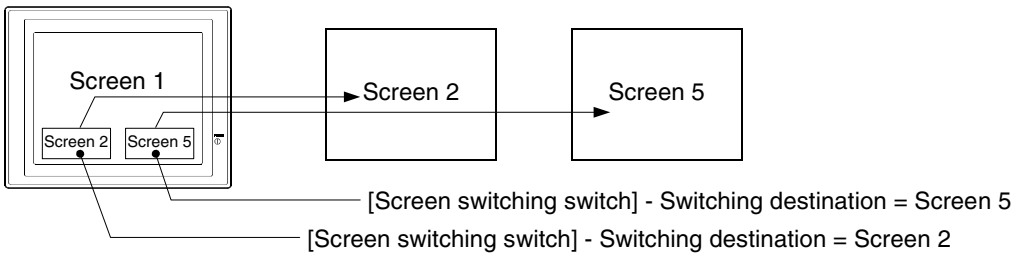
1) Overlap window function (Refer to Section 5.5.)
   When screens to be displayed are specified from the PLC, the base screen and up to two other screens can be displayed in the overlap status.
   When the overlay screen setting function described below is used at the same time, the overlay screen setting function is valid only on the base screen, and invalid on the second and third overlap screens.
   (If the overlay screen setting function is used on the second and third screens, the base screen in the overlay screen setting function overlaps due to the overlap function.)
2) Overlay screen setting function (Refer to Section 5.6.)
   Screens to be displayed in the overlap status can be specified in advance in the screen creation software.
   The base screen and up to five other screens can be displayed in the overlap status.

5.1.1 Screen switching types and other functions

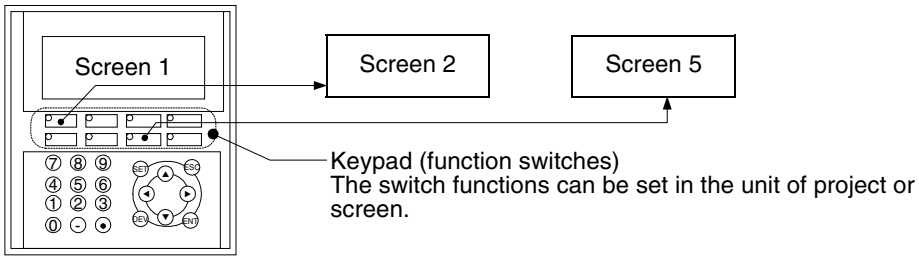
User screens (Nos. 1 to 500) and GOT system screens (alarm mode, other mode, etc.) (Nos. 1001 to 1030) can be displayed.

1) When controlling screen switching using switches (Refer to Section 5.2.)

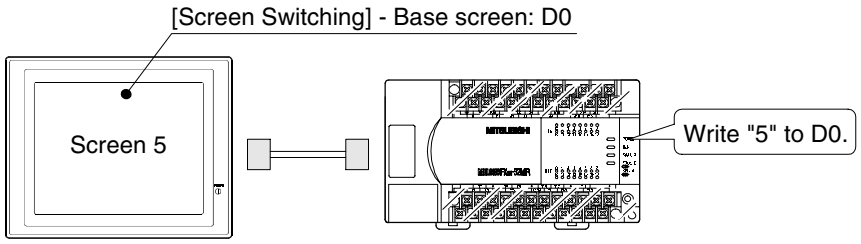
a) Switching the screen using touch switches



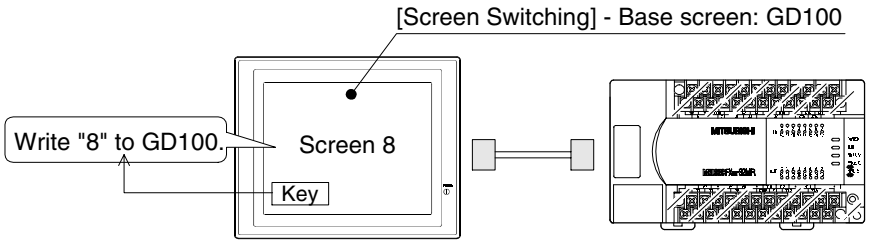
b) Switching the screen using function switches (in the F920GOT-K and F930GOT-K)



2) When controlling screen switching from the PLC (Refer to Section 5.3.)



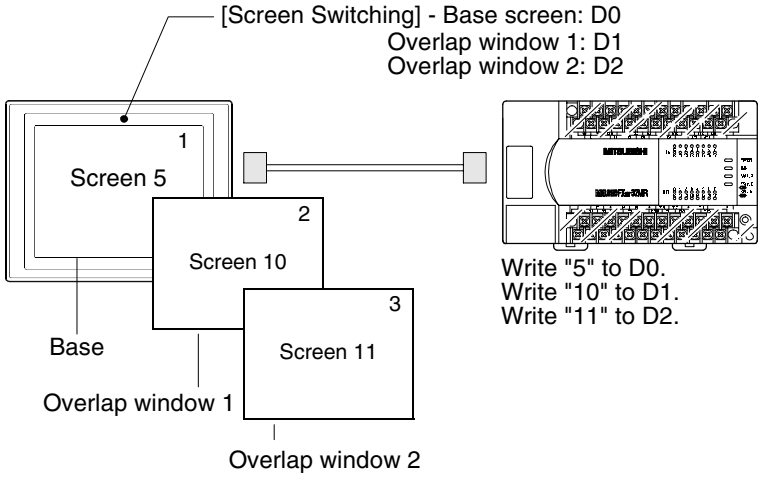
3) When controlling screen switching inside the GOT



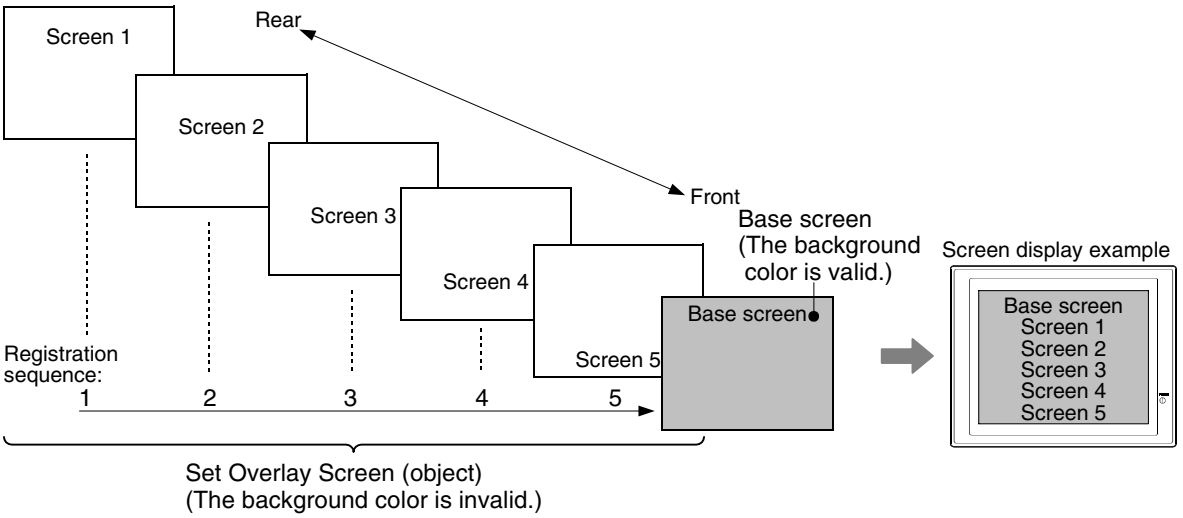
4) When using the both control method "controlling using switches 1)" and "controlling from the PLC 2)" (Refer to Section 5.2 and 5.3.)
For the details, refer to both Section 5.2 and 5.3.

5.1.2 Overlapping the screens

1) When controlling overlapping from the PLC - Overlap Window (Refer to Section 5.5.)

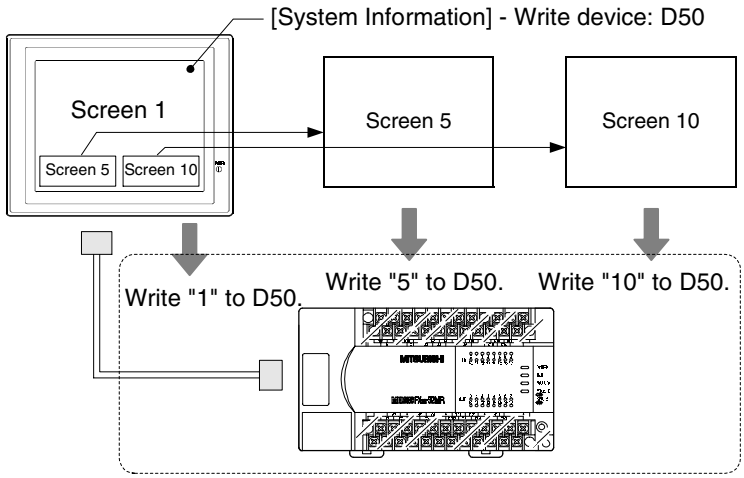


2) When controlling overlapping inside the GOT - Set Overlay Screen (Refer to Section 5.6.)

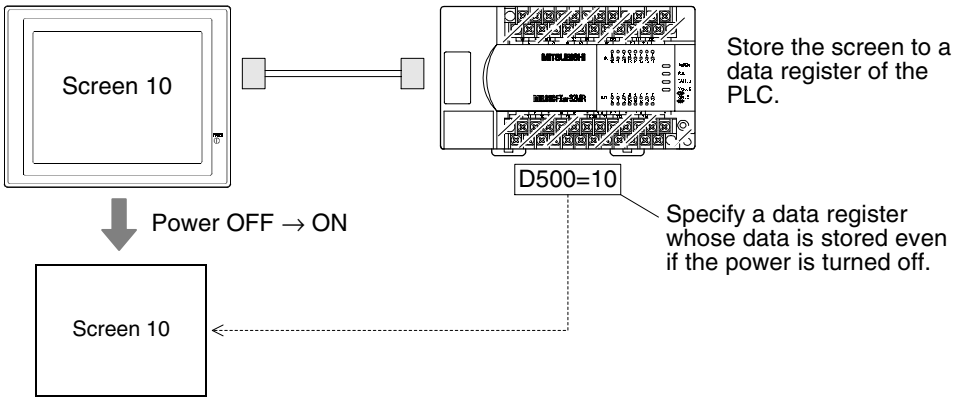


5.1.3 Other relevant functions

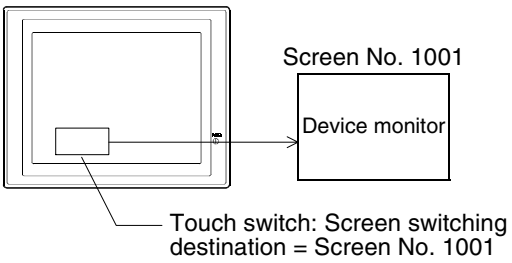
1) Monitoring the GOT display screen from the PLC (Refer to Section 5.7.1.)



2) Storing the screen when the power of the GOT is turned off (Refer to Section 5.7.2.)



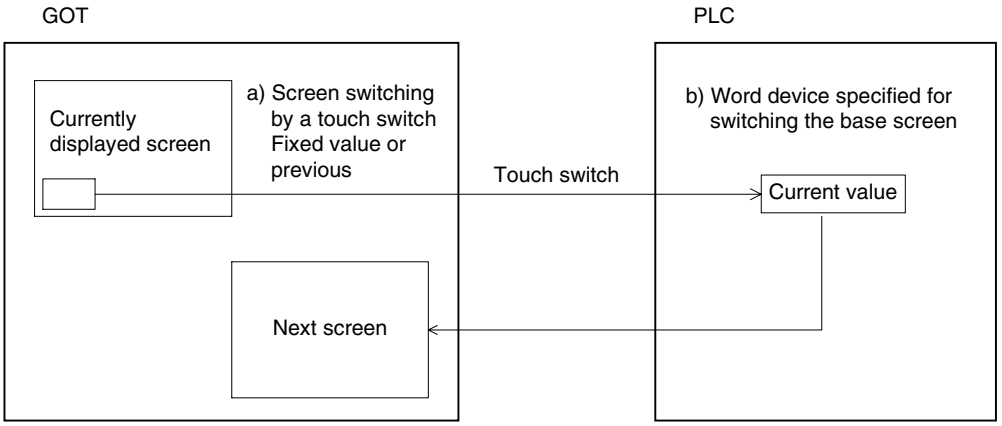
3) Switching to a GOT system screen (Refer to Section 5.7.3.)



5.2 Switching the screen (using touch switches and function switches)

Screen switching using touch switches and the keypad (function switches) can be set for each screen.

1) Outline



When a touch switch or function switch is pressed, the device specified for screen switching is overwritten, and the next screen is displayed.

2) Applicable GOT

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓	F920GOT-K	✓(Only function switches are available.)
F930GOT	✓	Handy GOT	✓

✓: Setting is enabled. ×: Setting is disabled.

5.2.1 Setting the switches

1) Setting in the screen creation software (GT Designer2)
In the case of touch switch

Operating procedure | Tool menu

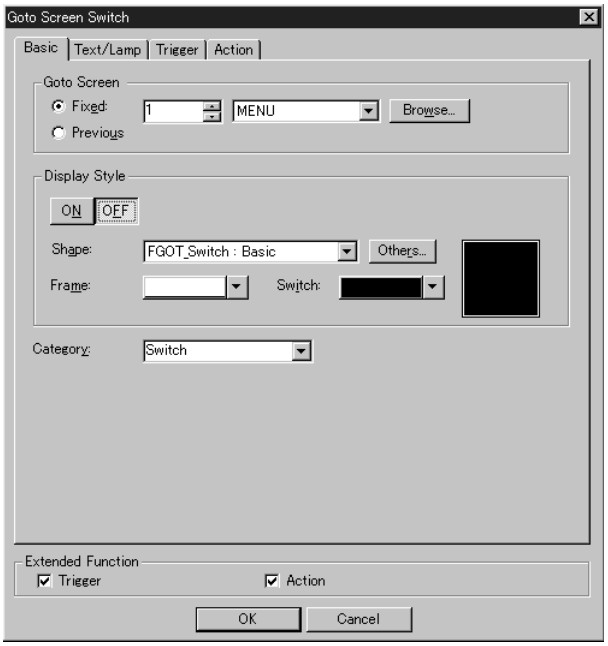
Select [Object]-[Switch], select "Goto Screen Switch", then click on the screen.
Double-click the "Goto Screen Switch" object on the screen, then execute the following setting.

In the case of function switch

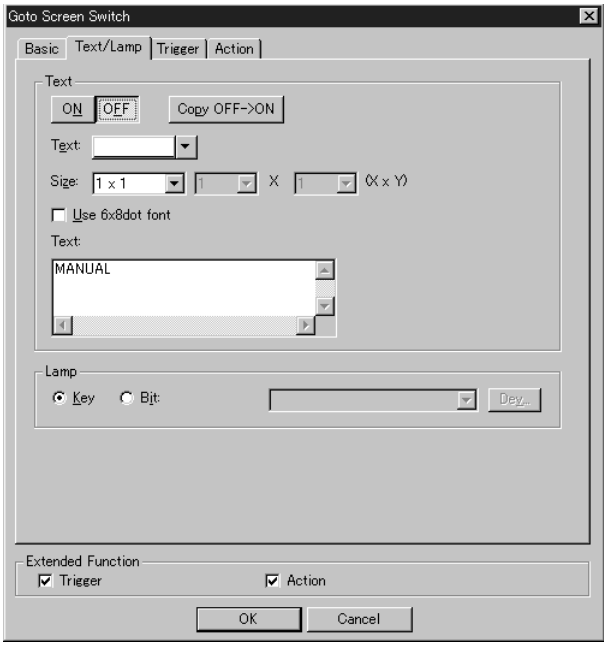
Operating procedure | Tool menu

Select [Common]-[Operation Panel].

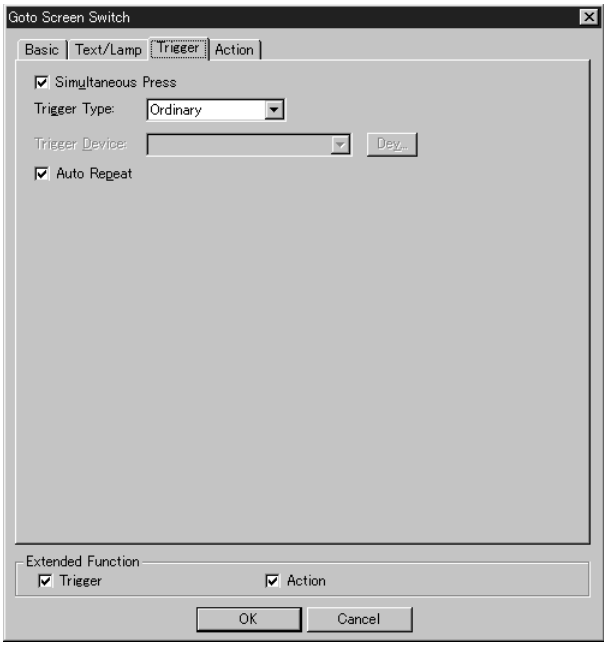
2) "Basic" tab
Specify the screen switching destination (switch action), and set the display style.



3) "Text/Lamp" tab
Set the label and ON/OFF condition of the touch switch.

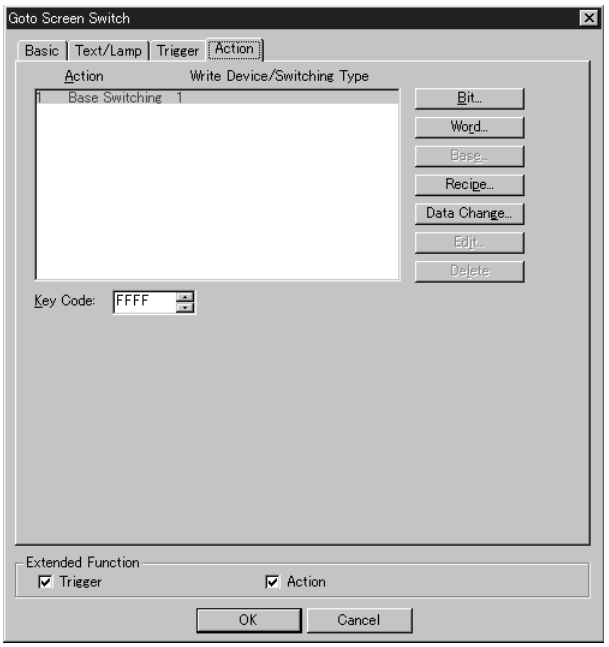


4) "Trigger" tab
Set the condition under which the touch switch is valid, and set the operation of the touch switch.



5) "Action" tab

To the touch switch set so far, functions other than the screen switching function can be added.

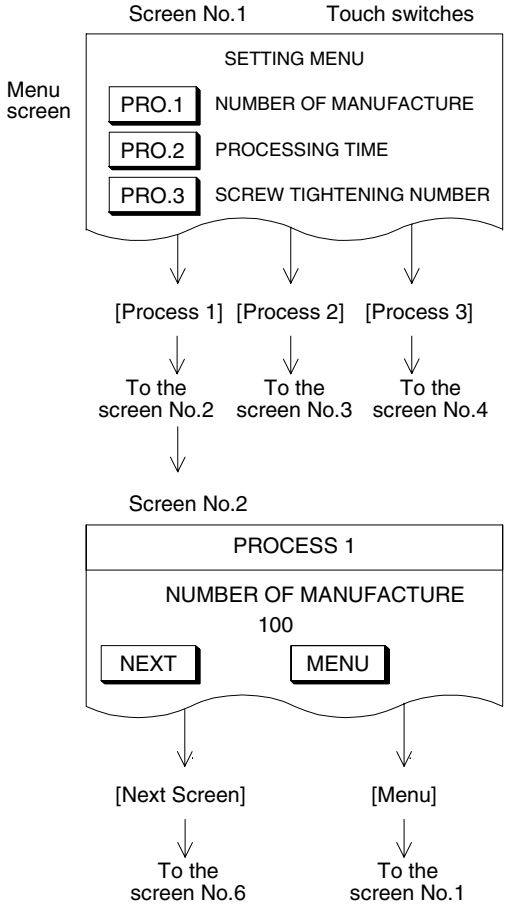


5.2.2 Type of operation for the screen switching destination

For switching the screen using a touch switch on the screen or function switch, the screen No. can be specified directly ("Fixed" method) and the previous screen of the currently display screen can be displayed again ("Previous" method).
These methods are not offered in screen switching using a data register of the PLC.

Type	Object/setting	Unit of specification	Switching destination		Allowable quantity
Touch switch	Got Screen Switch	Screen	Fixed	Specifies the screen No. to be displayed next	50 in all/ screen
			Previous	Returns to the previous screen.	
Function switch	Operation panel	Screen	Fixed	Specifies the screen No. to be displayed next	
			Previous	Returns to the previous screen.	
PLC	Screen switching	Project	Depends on the value of a device of the PLC.		1

1) Screen switching using the "Fixed"
When a touch switch or function switch is pressed, the screen having the No. set to the switch is displayed.
Fixed: The following screen Nos. can be specified.
Nos. 1 to 500 (user screen)
Nos. 1001 to 1030 (system screen): Refer to the Appendix.
Switching example



Create the screen No. 1.
When either of the touch switches [Process 1] to [Process 3] is pressed, the next screen is displayed as follows.

	Switching destination setting
Touch switch [Process 1]	Fixed value: 2
[Process 2]	Fixed value: 3
[Process 3]	Fixed value: 4

* Set the characters "Process 1" to "Process 3" as touch switches or character strings.

When the touch switch [Process 1] is pressed, the screen No. 2 is displayed according to its setting.

	Switching destination setting
Touch switch [Next Screen]	Fixed value: 6
[Menu]	Fixed value: 1

The touch switch [Menu] can display the screen No. 1 according to its fixed value, or return to the previous screen by specifying the "Previous" described in the next page.

2) Screen switching to the "Previous"

When the screen is switched, the GOT stores screens up to 10 previous times from the currently displayed screen in the screen memory.

When a touch switch on the screen or function switch is set to "Previous", the previous screen is displayed when the switch is pressed.

This function is convenient to return to the previous screen without regard to the order after the screen is switched for error display caused by a problem in the machine, for example.

Previous:

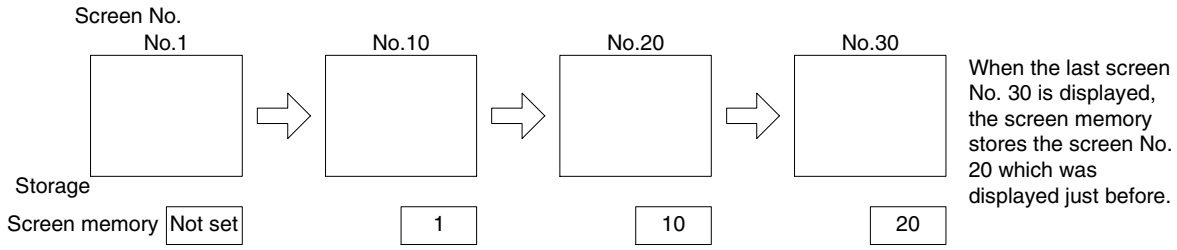
Nos. 1 to 500 (user screen) : Displayed screens can be stored.
(The previous display function is valid.)

Nos. 1001 to 1030 (system screen): Displayed screens cannot be stored.
(The previous display function is invalid.)

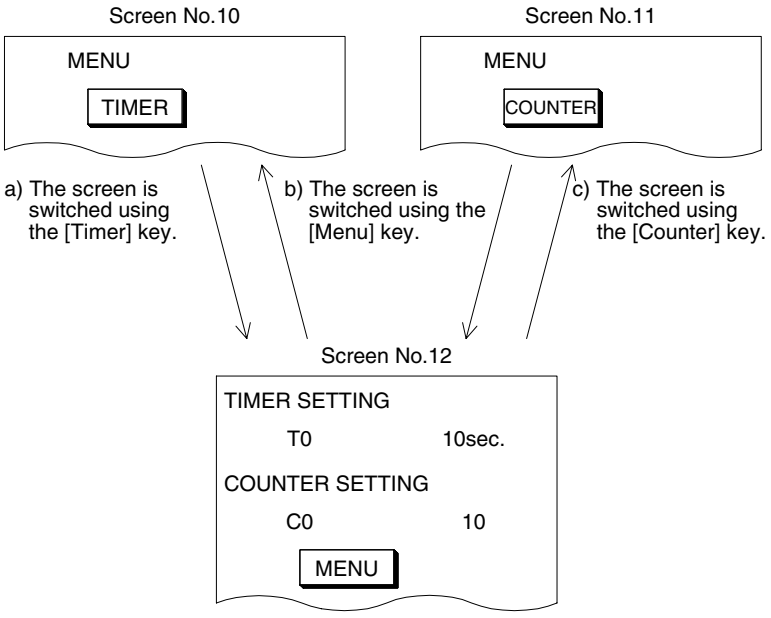
Contents of the screen memory

The GOT stores displayed screen Nos. up to 10 previous times without regard to the setting. The contents of the screen memory are held only while the power of the GOT is ON. When the power is turned off, the contents are cleared.

Display screens and the screen memory



Switching example (using a touch switch)



a) Screen No. 10

According to the fixed value set to the touch switch, the screen is switched to the screen No. 12.

[Timer] touch switch: Fixed value = 12

b) Screen No. 12

According to the previous set to the touch switch, the screen is returned to the previous screen (the screen No. 10 or 11).
[Menu] touch switch: Previous

c) Screen No. 11

According to the fixed value set to the touch switch, the screen is switched to the screen No. 12.
[Counter] touch switch: Fixed value = 12

5.2.3 Cautions on use

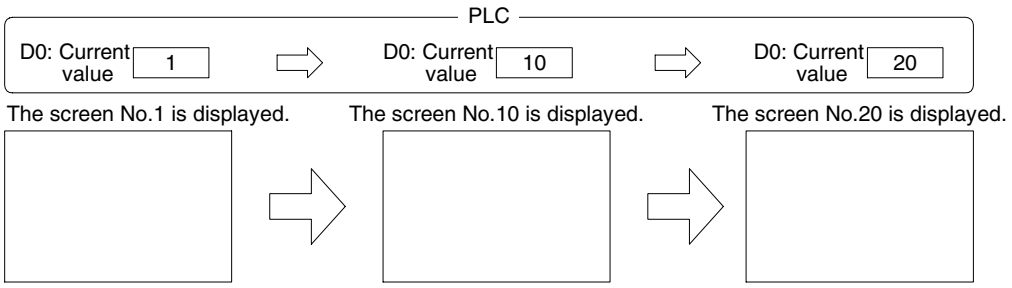
1) Setting the switches
Touch switches and function switches can be set for each screen.
Up to 50 touch switches and function switches in all can be registered to one screen.

2) Specifying the switching destination
Only either one between fixed and the previous can be set to one touch switch or function switch.
(Setting other than the screen switching function such as the bit ON/OFF function can be set at the same time.)

5.3 Switching the screen (from the PLC)

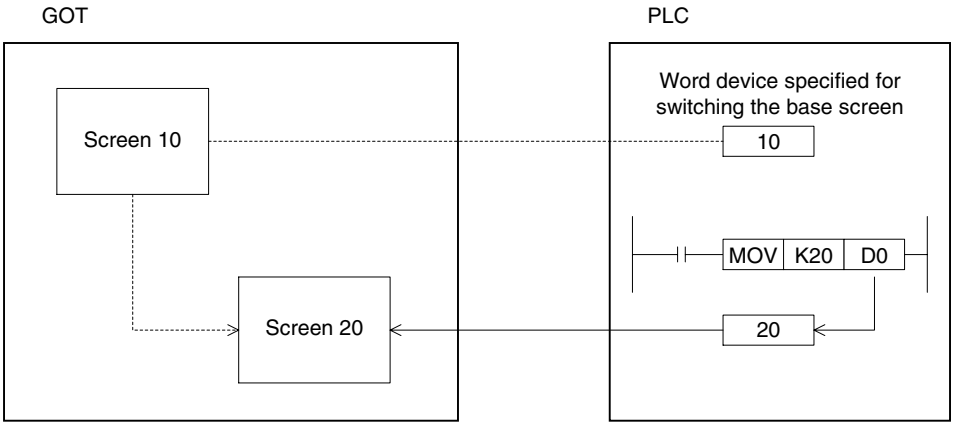
Specify the No. of a screen to be displayed using the current value of a word device (D, T or C) of the PLC.
By this setting, a screen to be displayed can be specified from the PLC for all screens.

1) Outline
When the screen is switched using a touch switch, the screen No. specified by the touch switch is stored as the current value of a word device of the PLC specified by this switching of the base screen.
Example: When switching of the base screen is set to D0



When the base screen is switched to a system screen (No. 1001 to 1030), the screen No. is not stored.
For switching to a system screen, refer to Section 5.7.2.

2) Screen switching operation
The GOT is always monitoring the current value of a word device set in "Screen Switching". When a desired screen No. is written by a sequence program, the screen is switched to the desired one.



3) Applicable GOT

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓	F920GOT-K	✓
F930GOT	✓	Handy GOT	✓

✓: Setting is enabled. ×: Setting is disabled.

5.3.1 Setting the device for screen switching

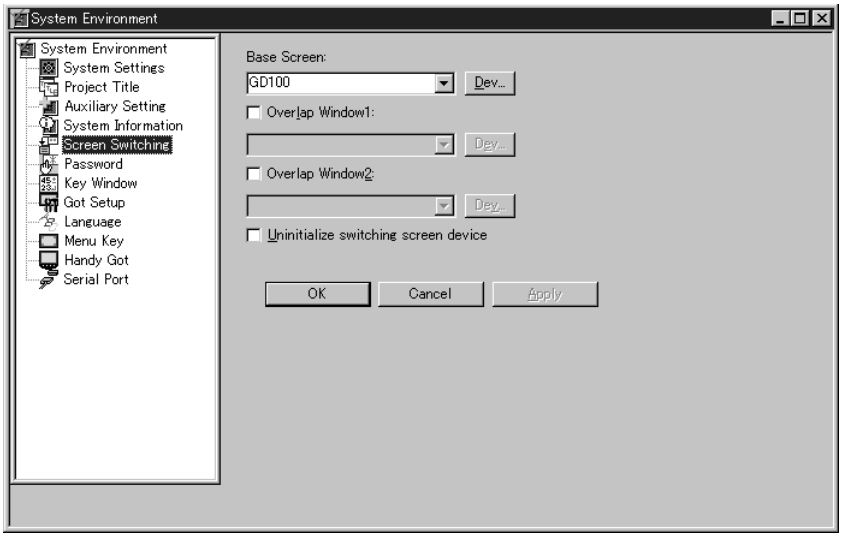
1) Setting in the screen creation software (GT Designer2)

Operating procedure: Tool menu

Select [Common]-[System Environment], and set "Screen Switching". Make sure to execute this setting without regard to the screen switching means.
(Even if this registration operation is not executed, one word device is assigned without exception.)

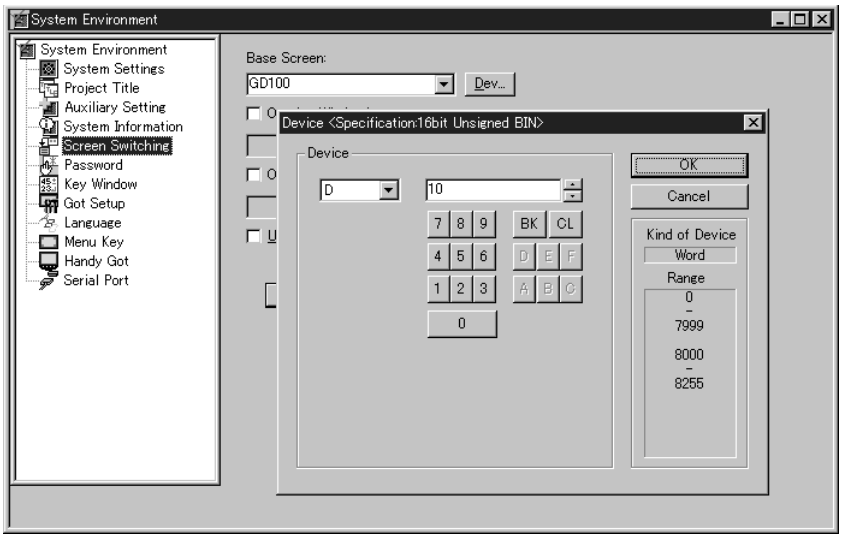
2) Initial screen

The initial value of "Base Screen" is set to "GD100" (register inside the GOT). When switching the screen from the PLC, the following change is required.



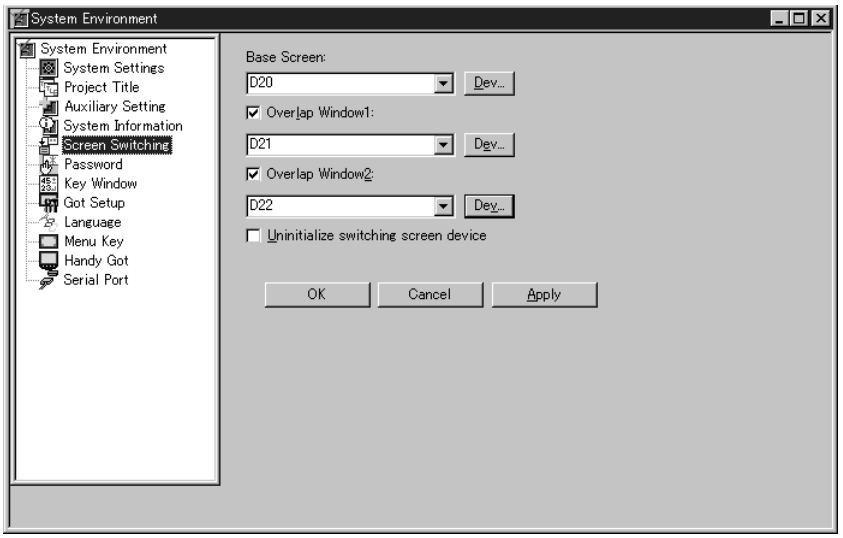
3) When switching the screen from the PLC

Set a data register of the PLC to "Base Screen".



4) When displaying overlap windows

When displaying overlap windows, give a check mark (✓) to "Overlap Window 1" and "Overlap Window 2", and set a device of the PLC.

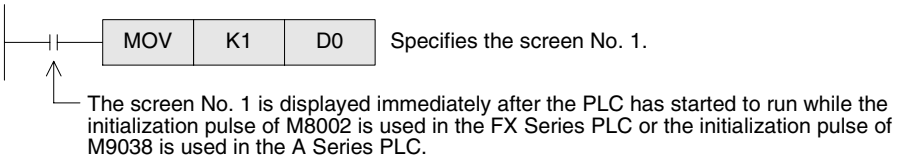


When a check mark (✓) is given to "Uninitialize switching screen device.", the screen displayed at first at turning on of the power of the GOT can be controlled.

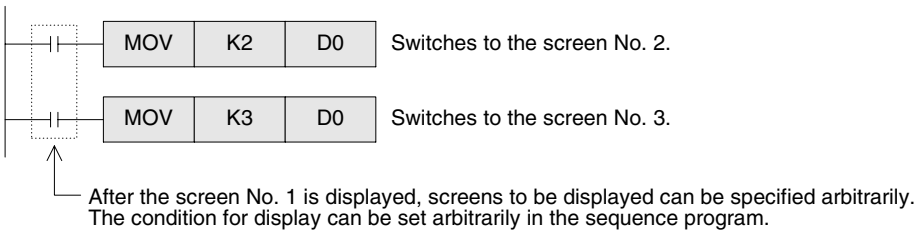
5.3.2 Base screen switching example

An example of base screen switching is shown below.

1) Example of sequence program



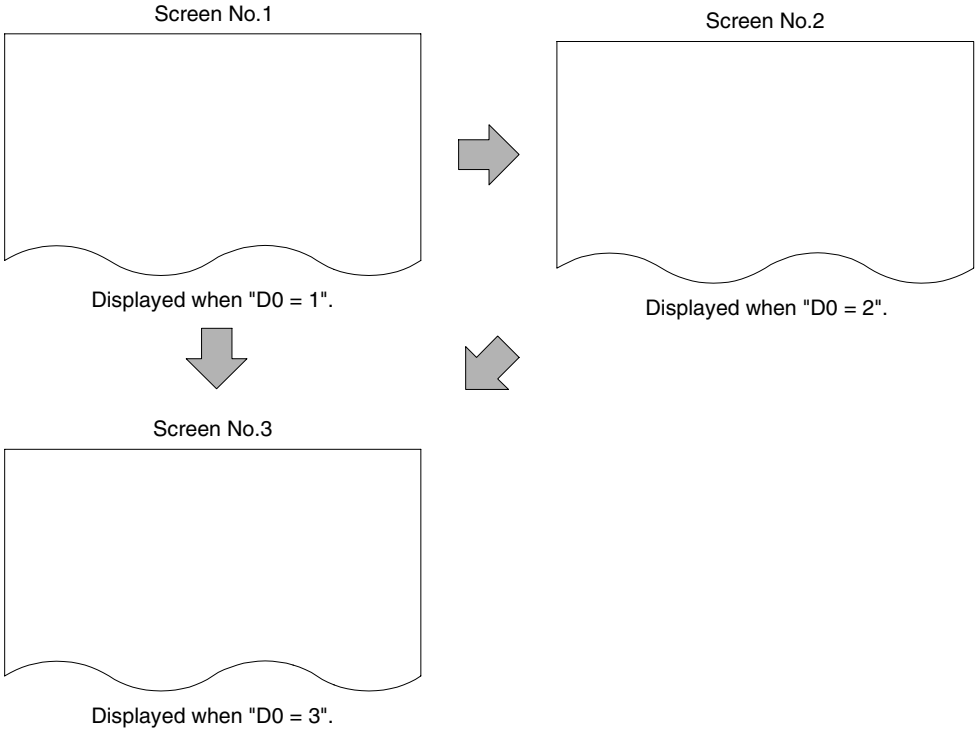
When the program shown below is executed next, the specified screen is displayed.



2) Screen switching flow

When the GOT enters the user screen mode, the screen No. 1 is displayed at first without exception.

If a screen to be displayed next by switching has not been created, the message "Display screen is not available. (No.**)" is displayed.



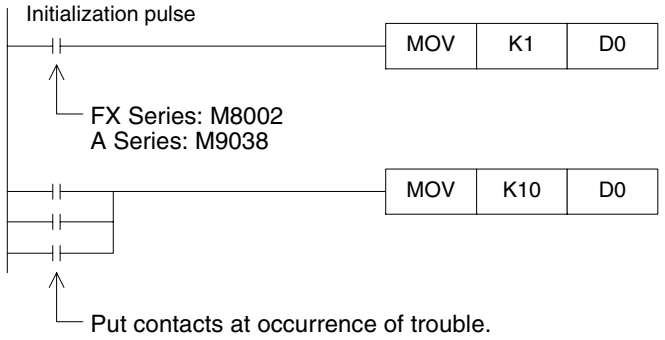
5.4 Application examples of screen switching

This section explains application examples of screen switching.

5.4.1 Application example 1 returning from two or more screens to the switching destination

The example below shows a case in which a trouble occurs in the machine in the operation mode, an error message is displayed, then the previous display screen is displayed again.

1) Example of sequence program



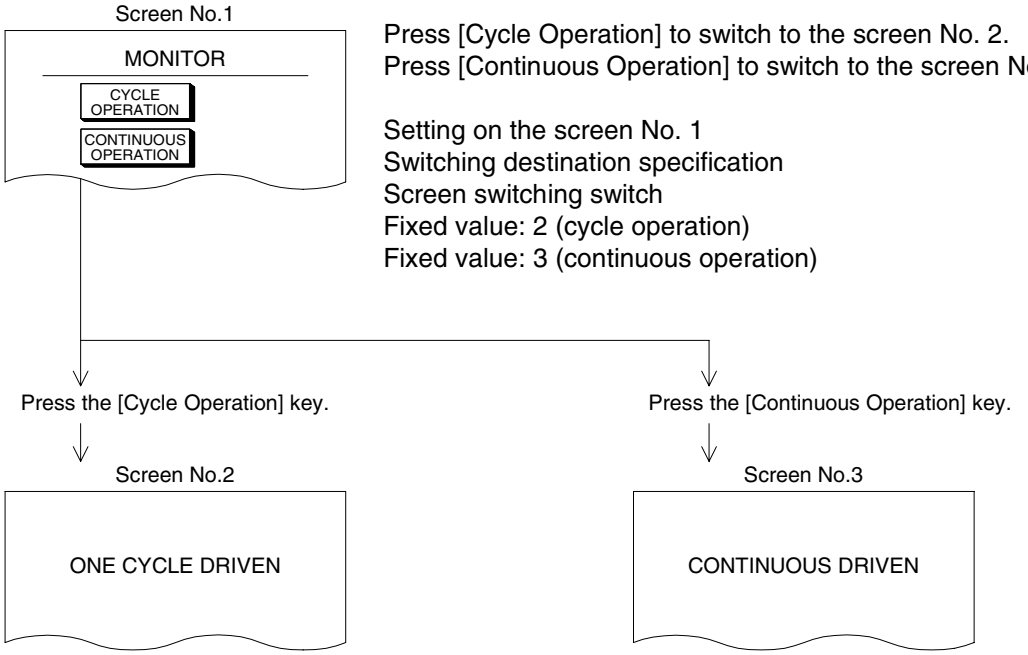
When the GOT enters the screen mode, the initial screen No. 1 is displayed at first.

When a trouble has occurred, K10 is transferred to D0, and the screen No. 10 is displayed.

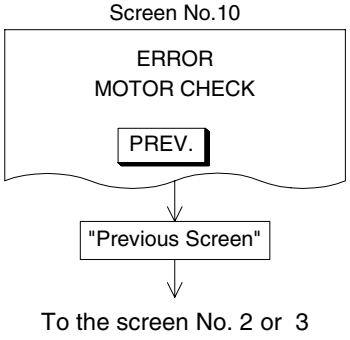
2) Transition of screen switching

a) Switching the base screen

Switching destination word device: D0
Registered as the common setting among all screens.



b) While the screen No. 2 or No. 3 is displayed, the program shown in the next page is executed, and the screen is switched to the screen No. 10 by switching of the base screen.



When returning from the screen No. 10 to the previous screen No. 2 or 3, use a touch switch having the previous function.

Setting on the screen No. 10

Screen switching switch	Previous

c) When one screen is specified from two or more screens and the previous screen before switching is displayed, the previous function assigned to a touch switch is used.

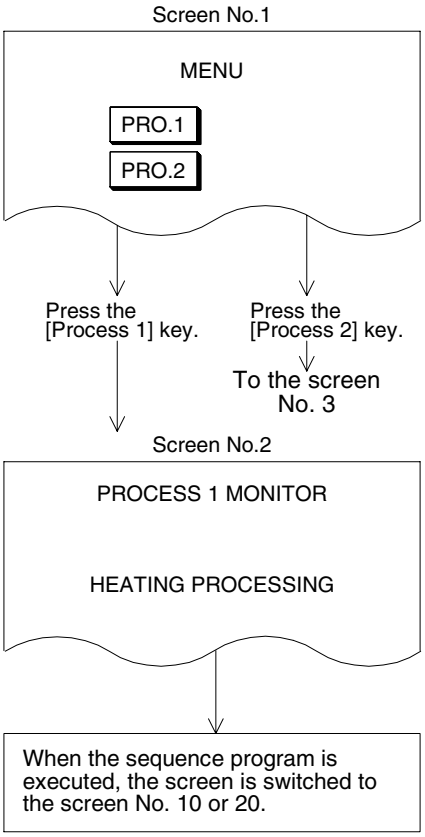
5.4.2 Application example 2 using both switching of the base screen and switching by touch switches

In this example, switching of the base screen and screen switching by touch switches are combined.

1) Transition of screen switching

a) Switching the base screen

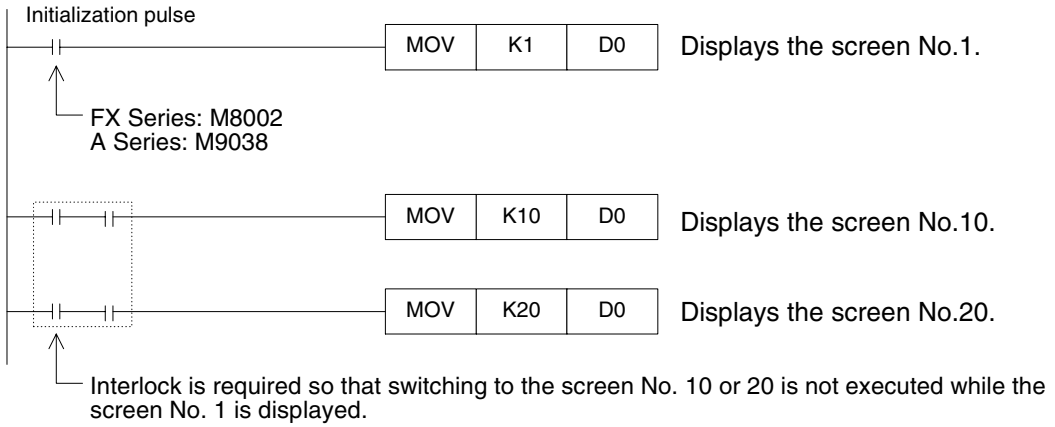
Switching destination word device: D0
Registered as the common setting among all screens.



Press the [Process 1] key to switch to the screen No.2.
Press the [Process 2] key to switch to the screen No.3.
Setting on the screen No. 1
Touch switch Fixed value: 2 (process 1)
Fixed value: 3 (process 2)

If the sequence program shown below is executed while the screen No.2 is displayed, the screen is switched to the screen No. 10 or 20 by switching of the base screen.

2) Sequence program example

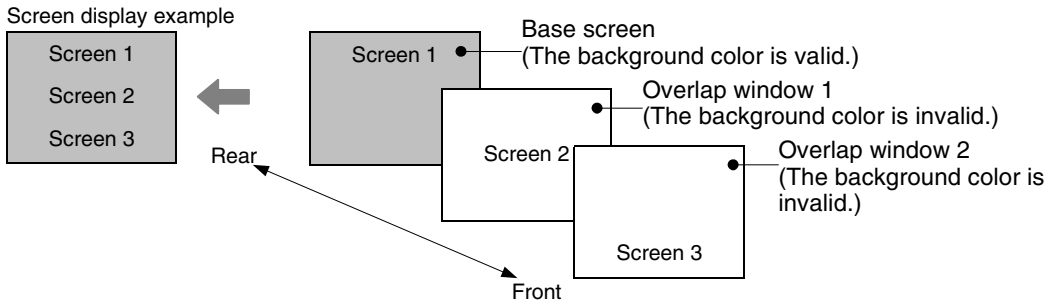


5.5 Screen overlap (Overlap Window)

In addition to one displayed user screen (base screen), other two user screens can be displayed (three screens in all) in the overlap status.

5.5.1 Outline

The overlap window 1 is displayed on the base screen. The overlap window 2 is displayed on the overlap window 1.

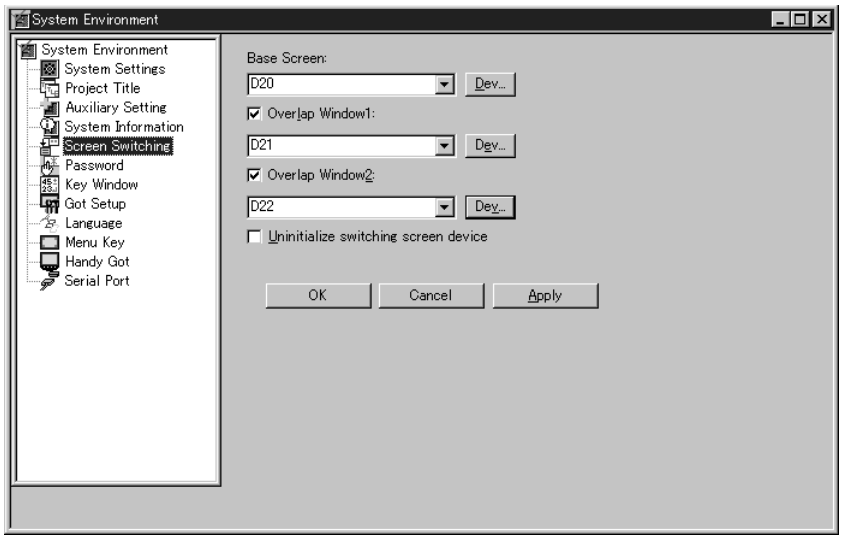


If touch switches (including Numeric Input and ASCII Input) are overlapped, touch switches on the screen displayed in the front are valid.

5.5.2 Setting in the screen creation software (GT Designer2)

Operating procedure Tool menu

Select [Common]-[System Environment]-[Screen Switching], then set "Overlap Window 1" and "Overlap Window 2".
Give a check mark (✓) to both "Overlap Window 1" and "Overlap Window 2", then specify a device of the PLC to each one.



5.5.3 Setting word devices for screen control

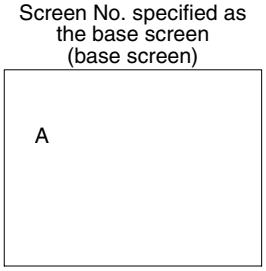
Arbitrary word devices can be specified to "Base Screen", "Overlap Window 1" and "Overlap Window 2". (These word devices may not be consecutive.)

1) Screen switching device
   Base Screen: Word device (The initial value is "GD100".)
2) Screen overlapping devices
   Overlap Window 1 : Word device (The initial value is not set.)
   Overlap Window 2 : Word device (The initial value is not set.)
   When overlapping is not executed, write "-1" to specified devices or do not give check marks to "Overlap Window 1" and "Overlap Window 2".
3) Monitoring the screen No. currently displayed
   The currently displayed screens can be confirmed in "Write Device" in "System Information" in the screen creation software. (Refer to Section 3.6.1.)
   Write Device
   Top word device : Base screen
   "Top +1" word device : Overlap window 1
   "Top +2" word device : Overlap window 2
   The specified screens overlap as shown below.

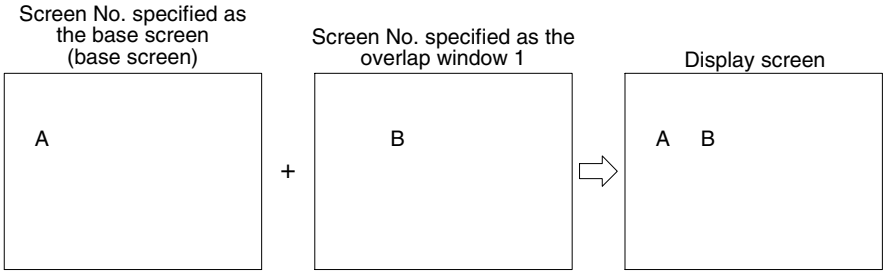
Attribute			Screen overlap status
Base Screen	**Overlap Window 1**	**Overlap Window 2**	
Screen No.	-1	-1	Base screen
Screen No.	Screen No.	-1	Base screen + Overlap window 1
Screen No.	-1	Screen No.	Base screen + Overlap window 2
Screen No.	Screen No.	Screen No.	Base screen + Overlap window 1 + Overlap window 2

5.5.4 Screen display examples

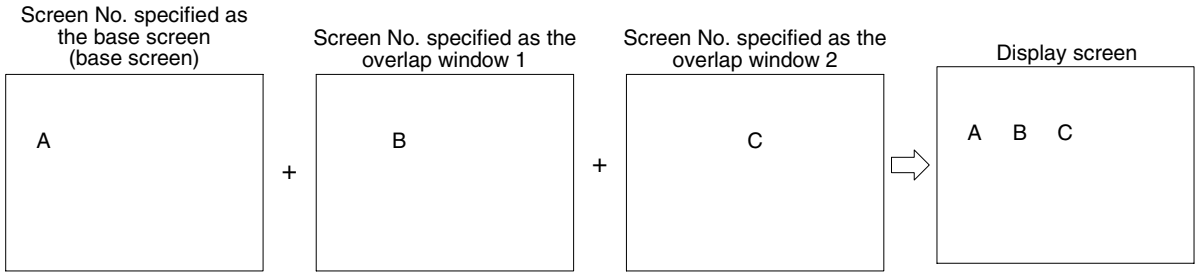
1) When the overlap function is not used
   Only the base screen is displayed.



2) When two screens overlap
   The base screen and a screen specified as "Overlap Window 1" or "Overlap Window 2" (two screens in all) are displayed in the overlap status.



3) When three screens overlap
   The base screen and screens specified as "Overlap Window 1" and "Overlap Window 2" (three screens in all) are displayed in the overlap status.



5.5.5 Use example

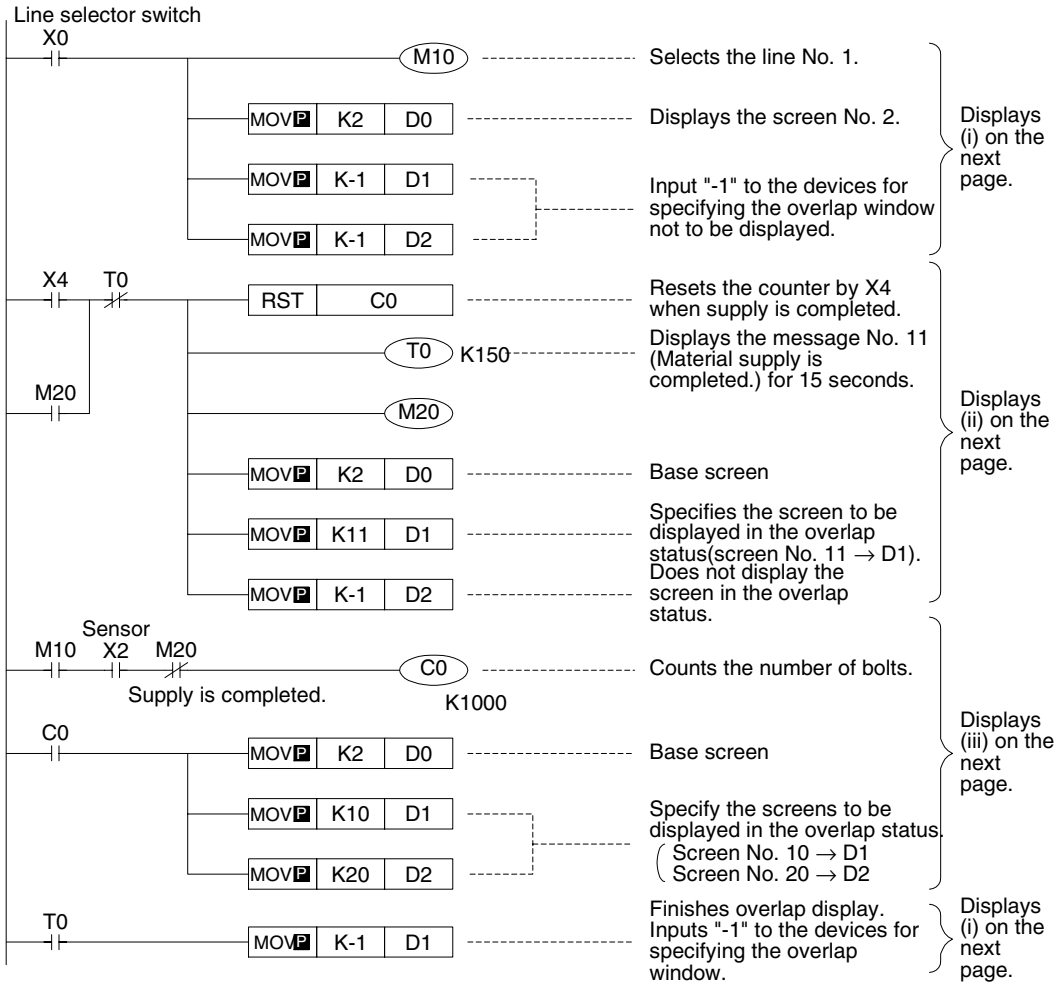
The GOT monitors each process. When a material is running short, the GOT displays the material name on the screen, and gives a message to supply it.

- Line selector switch
  Line No. 1 Input: X0
  Line No. 2 Input: X1
- Sensor (for counting bolts)
  Line No. 1 Input: X2
  Line No. 2 Input: X3
- Button to confirm supply: X4

1) Devices for screen switching
Word devices: Word devices used to specify the overlap window Nos.

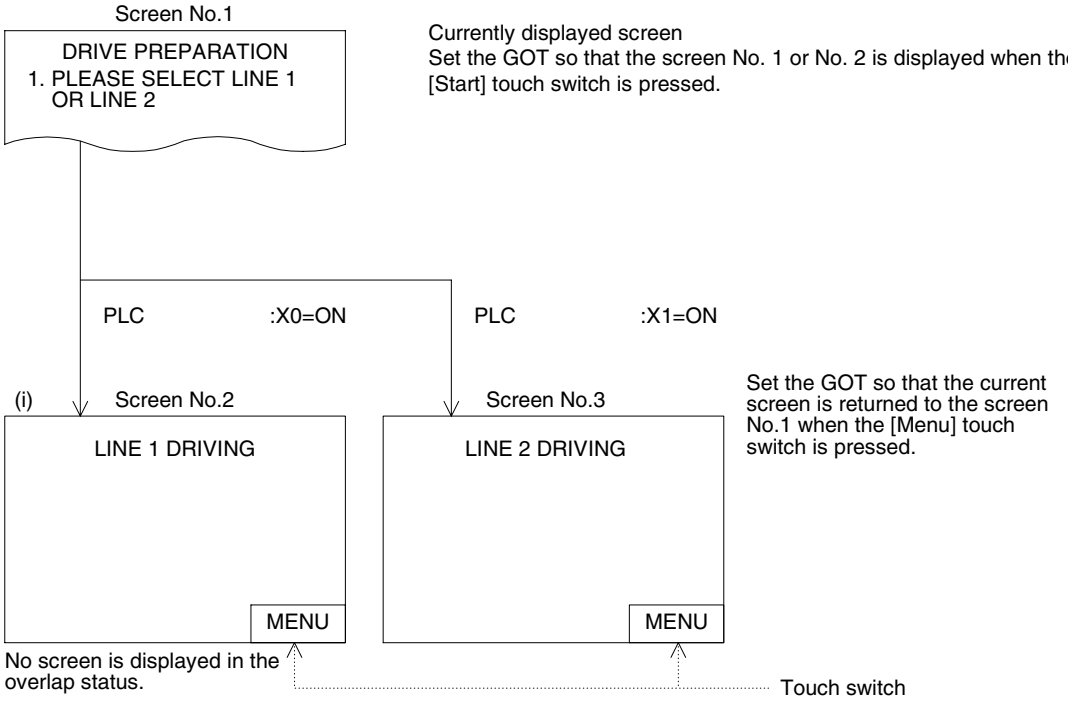
Base screen → D0
Overlap window 1 → D1
Overlap window 2 → D2
] Set them in the GT Designer2.

2) Sequence program example
The program shown below is provided for a case in which the line No. 1 is selected.
For a case in which the line No. 2 is selected, a similar program can be created to overlap the screens.
(Use a same device only once except screen switching devices.)

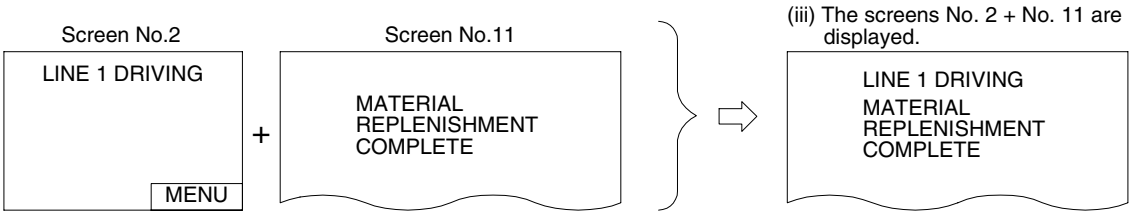


3) Screen display flow

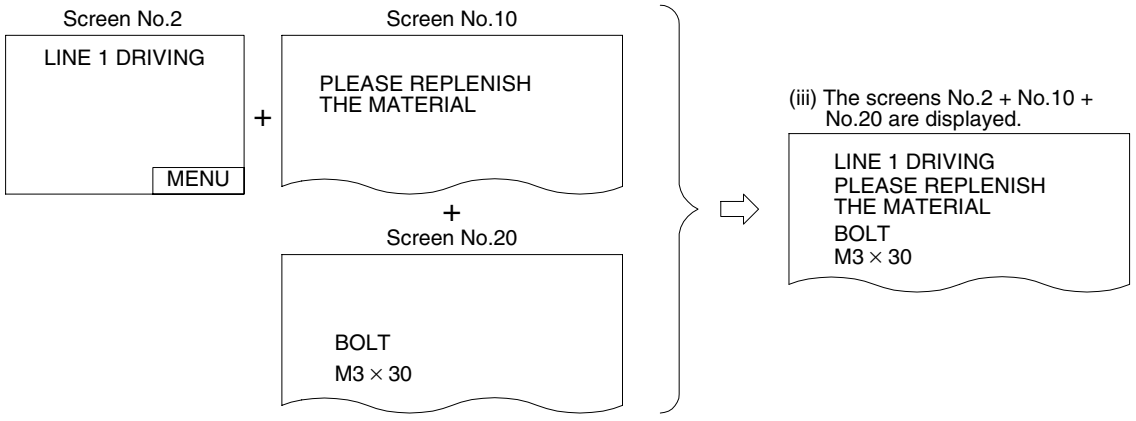
a) Switching the base screen



b) When two screens are displayed in the overlap status
The screen No. 11 is displayed on the screen No. 2.



c) When three screens are displayed in the overlap status
The screens No. 10 and 20 are displayed on the screen No. 1.
In this example, the screen overlap display example for the line No. 1 (screen No. 2) is explained.



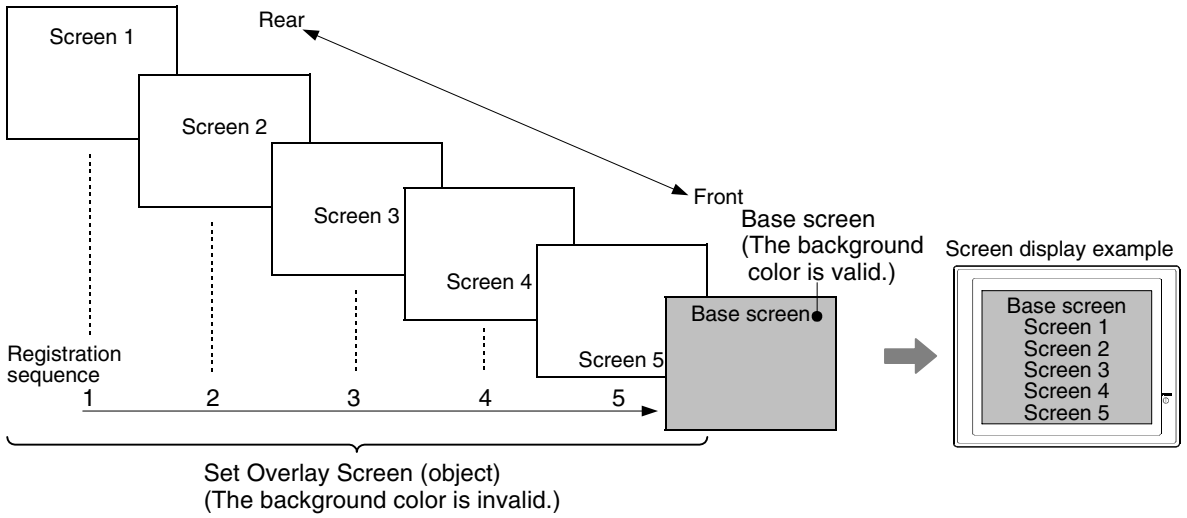
5.6 Screen overlap (Set Overlay Screen)

The overlay screen setting function displays screens in the overlap status as shown below by screen creation using the screen creation software GT Designer2.

5.6.1 Outline

Up to five user screens out of up to 500 user screens Nos. 1 to 500 can be displayed on the base screen.

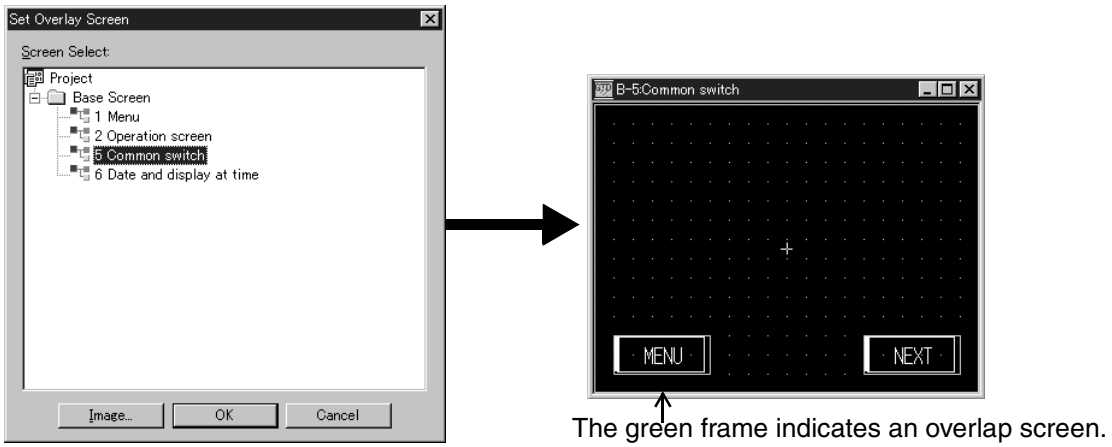
Display example



5.6.2 Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

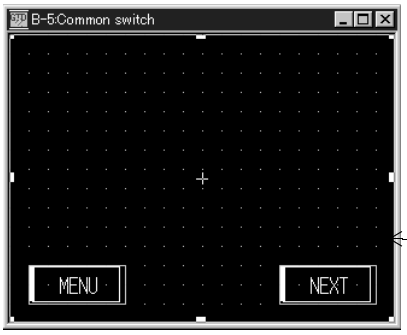
Select [Object]-[Set Overlay Screen].
Select the No. of screen to overlap.
(Or click [Image], and select a screen in the screen image list.)
Return to the base screen, and click on the screen.



Overlapping two or more screens

When overlapping two or more screens, repeat the same operation. (Up to five screens can overlap.)

Deleting a screen specified in the overlay screen setting function



Click on the screen.
While selecting the green frame, press the [DEL] key.

5.6.3 Caution on use

System screens (Nos. 1001 ~) cannot be selected in the overlay screen setting function.

5.7 Common function in screen switching control

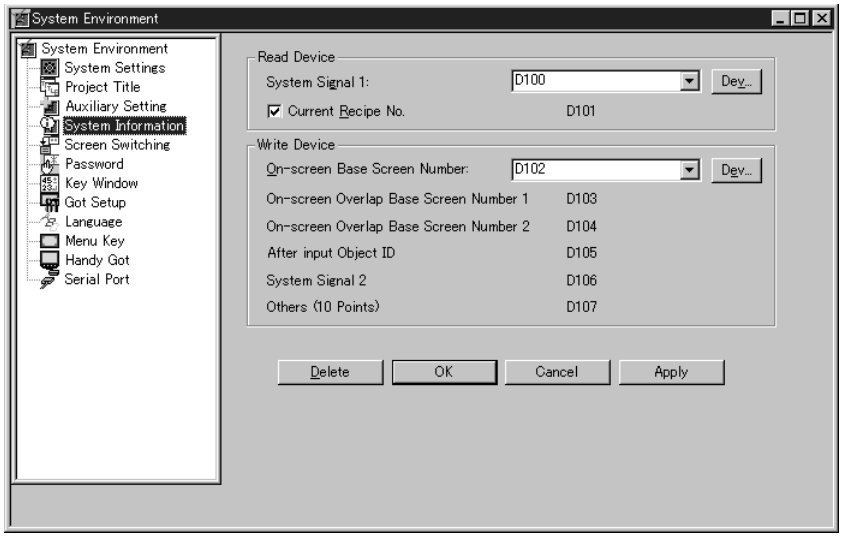
5.7.1 Monitoring the screens displayed in the GOT from the PLC

The screen Nos. of the base screen, overlap window 1 and overlap window 2 currently displayed in the GOT can be checked from the PLC.
(On the setting screen, the overlap window 1 and overlap window 2 are displayed as "On-screen Overlap Base Screen No. 1" and "On-screen Overlap Base Screen No. 2".)

1) Setting in the screen creation software (GT Designer2)

Operating procedure Tool menu

Select [Common]-[System Environment]-[System Information], then set "Write Device".



5.7.2 Storing the screen when the power of the GOT is turned off (initially displayed screen No. write function)

The GOT is set so that the screen No. 1 is displayed at first in the user screen mode after its power is turned on.
The operator can set whether or not the screen No. "1" is written to the register for screen switching when the power is turned on.
If the GOT is set so that the screen No. 1 is not written, the GOT can display a screen specified by the operator.

1) Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓(Ver5.00~)	F920GOT-K	✓
F930GOT	✓(Ver4.00~)	Handy GOT	✓(Ver5.00~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

2) Setting method

a) Setting by manipulating the GOT system screen (Refer to Section 8.4.14.)

When changing the setting using the system screen, select [SELECT MODE]-[OTHER MODE]-[SET-UP MODE]-"AUXILIARY SETTING".
In the F920GOT-K, only the screen creation software is available for setting.

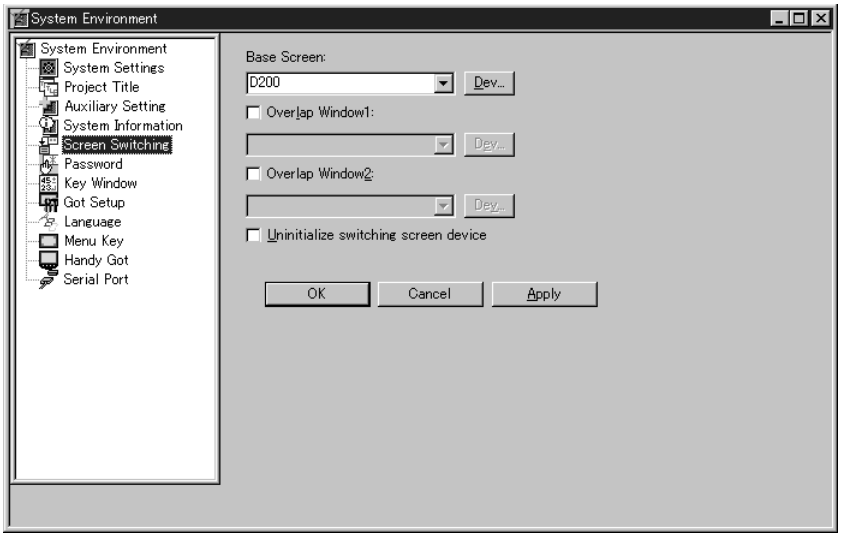
When a check mark is not given to "Uninitialize switching screen device.":
In this setting, "1" is written to the register for screen switching when the power is turned on (initial value).

When a check mark is given to "Uninitialize switching screen device.":
In this setting, "1" is not written to the register for screen switching when the power is turned on.
If a certain value is set to the register for screen switching, the screen No. 1 is displayed, then switched to the screen corresponding to the current value of the register.

b) Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Common]-[System Environment]-[Screen Switching].
In the initial setting, a check mark (✓) is not given.

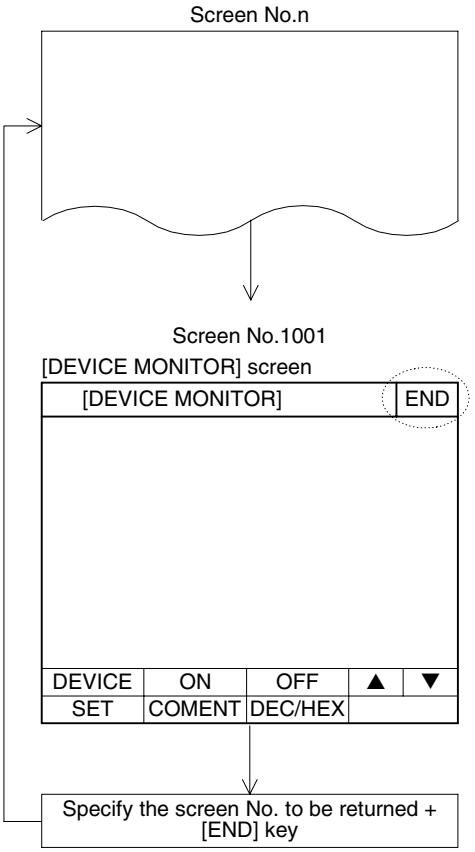


When writing the screen No. 1: Do not give a check mark (initial value).
When not writing the screen No. 1: Give a check mark.

5.7.3 Switching to the system screen

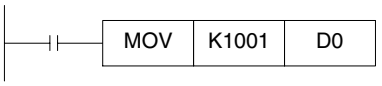
Each function screen mounted in the GOT such as the HPP mode screen, sampling mode screen, alarm mode screen and other mode screen can be displayed as a user screen.
In order to display the system screen then return to the previous screen, the following setting is required.

1) When switching the screen from the PLC



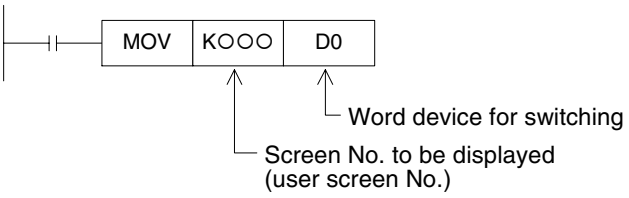
From the user screen to the system screen
When the sequence program shown below is executed while the user screen (No.n) is displayed, the system screen (DEVICE MONITOR screen No. 1001) is displayed.
- Word device to switch the GOT base screen: D0

Sequence program



From the system screen to the user screen
When returning from the system screen to the user screen, execute a program specifying the screen to be displayed again, then press the [END] key located at the upper right corner of the system screen. Then, the system screen is switched to the user screen.

Sequence program

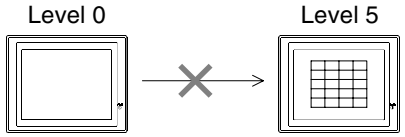
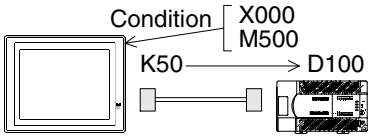
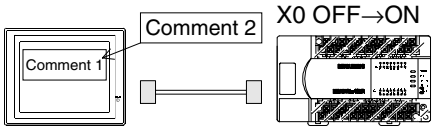
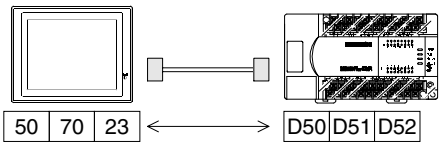
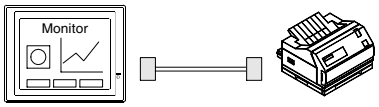
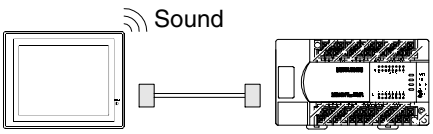
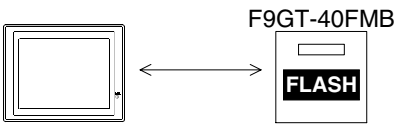


2) When switching the screen from a touch switch or function switch
In the same way as the user screen, specify a system screen among Nos. 1001 to 1030.
Press the [END] key located at the upper right corner of the system screen ([ESC] key in the F920GOT-K) to automatically return to the previously displayed user screen.
(The setting for returning to the previous screen is not required.)

3) System screen Nos. and applicable GOT (Refer to Section 8.)
System screens built in the GOT vary in each GOT.
A corresponding No. is assigned to each system screen. Specify such a No. to switch the screen.

6. Convenient Functions

The GOT has many built-in functions. This chapter explains these convenient functions.

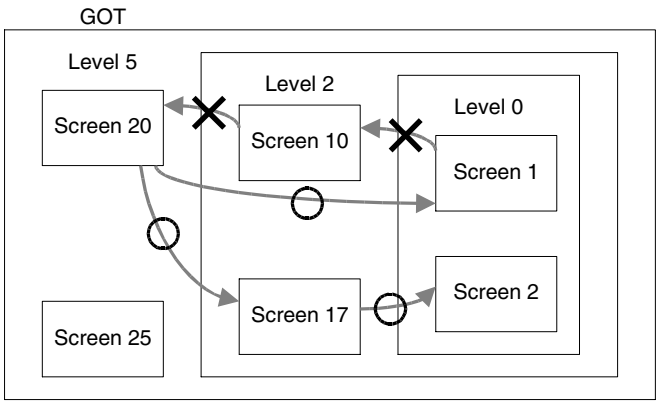
Function name	Description	Reference
Security 	This function puts restrictions ON operators using the password.	6.1
Status monitoring 	This function monitors the status of bit devices, then writes data from the GOT to the PLC when the condition is satisfied.	6.2
Comment 	Create comments in advance, then select and display Comment Display (object) depending on the condition. Use comments in the alarm mode (system screen) and Alarm Display (object).	6.3
Recipe 	This function transfers the recipe data in the GOT and data register values of the PLC using switches or according to the bit condition.	6.4
Hard copy 	This function outputs the user screen of the GOT to the printer.	6.5
Buzzer 	This function sounds the buzzer built in the GOT from the PLC.	6.6
Screen data transfer 	This function transfers the user screen at high speed to the memory board F9GT-40FMB.	6.7

6.1 Security function (screen protection function)

In the user screen mode in which user screens are displayed, screens to be displayed can be limited at each level using the password.
By using this security function, screens can be used for mechanical operation, setting change and maintenance.

6.1.1 Outline

In order to use the security function, set the security level to each user screen.
If the password is not registered, (the security level is "0", so) all screens can be displayed.



×: Screen switching is disabled.
The password at higher security level should be input.

O: Screen switching is enabled.
When switching from a screen at higher level to a screen at lower level, input of the password is not required.

1) Password specifications
Set the password for each security level, the level 0 (no password) and from the level 1 to 15 (highest level).
Screens up to the security level allowed by the password input by the operator can be displayed.
The password can be set up to eight numbers (from 0 to 9).
When the password is registered, the security level 15 (default at shipment from the factory) is automatically assigned to the system screens. Accordingly, it is recommended to set the password for level 15 also. (For the details, refer to Section 6.1.3 and 6.1.5.)

2) How to display the password input screen

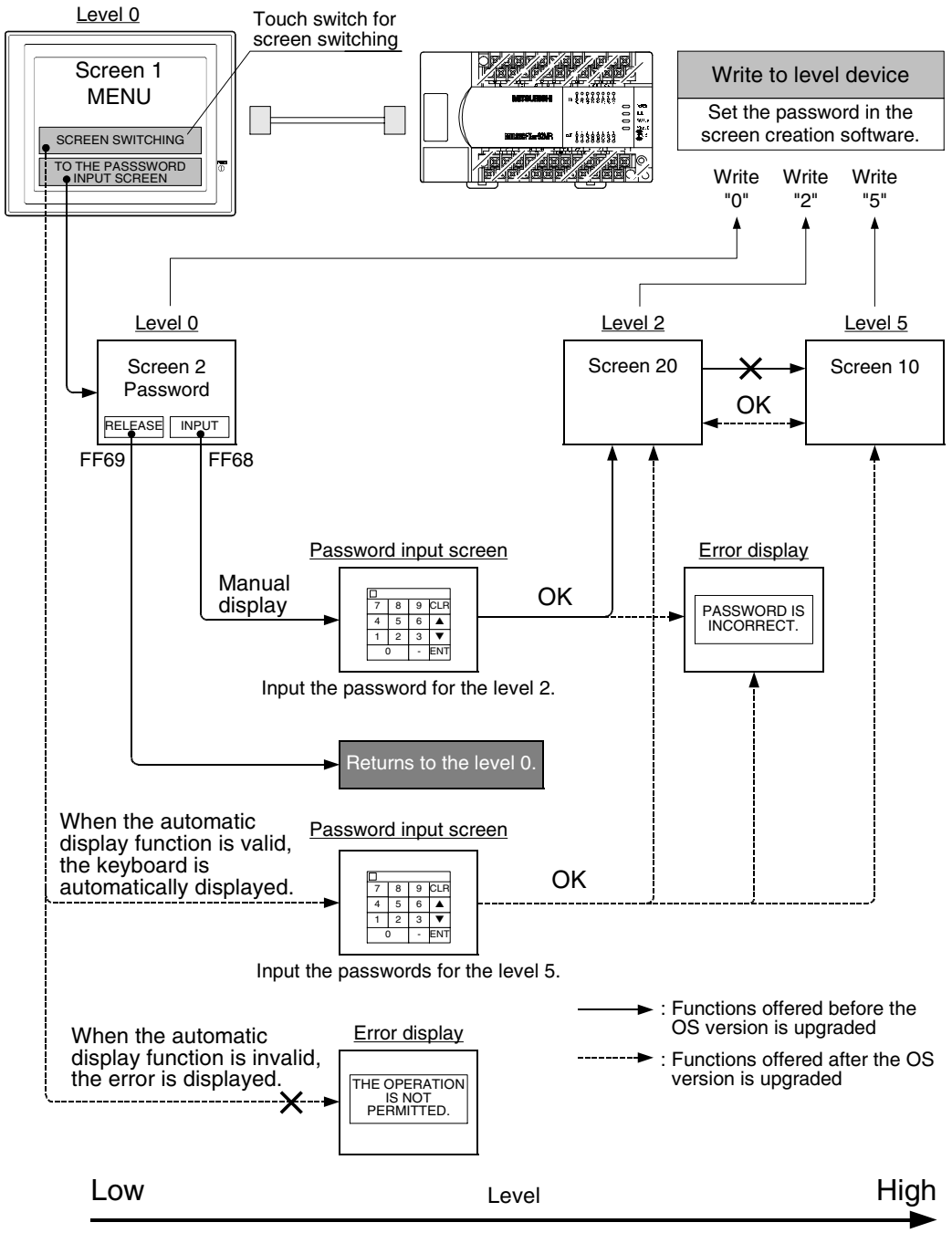
a) Displaying the password input screen using a touch switch

When a touch switch is pressed, the password input screen (system screen) is displayed.

b) Automatically displaying the password input screen
(For the details, refer to Section 6.1.3.)

When the operator tries to switch to a screen at higher security level, the password input screen is automatically displayed.

6.1.2 Screen flow and relationship with password input



6.1.3 Setting in the screen creation software (GT Designer2)

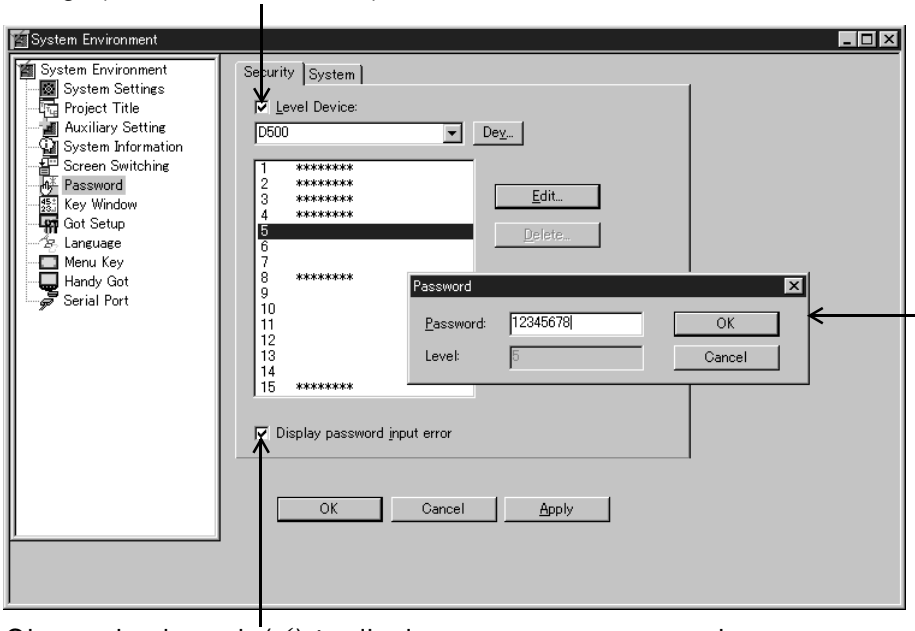
1) Setting the password

Set the password corresponding to the security level to be used.
When using system screens, it is recommended to set the level 15.

Operating procedure | Tool menu

Select [Common]-[System Environment].
Set "Password".

Give a check mark (✓) to make valid the level device setting. (Refer to Section 6.1.4.)



Password setting dialog box
Set the password for each level.

Give a check mark (✓) to display an error message when a password input error has occurred. (Refer to Section 6.1.5.)

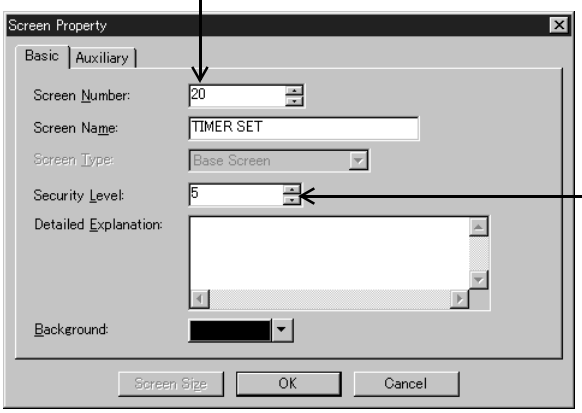
2) Setting the security level

Set the security level to each screen.

Operating procedure | Tool menu

Select [Screen]-[Properties].
Set "Security Level".

Input the screen No. for which the security level is set.



Set the security level.

6.1.4 Displaying the password input screen and resetting the password

For inputting the password, the keyboard for password input should be displayed.
In order to display this keyboard for password input, the function b) described below is added in some versions of the GOT.

a) Displaying the keyboard using a touch switch

When a touch switch is pressed, the password input screen (system screen) is displayed.

b) Automatic keyboard display function

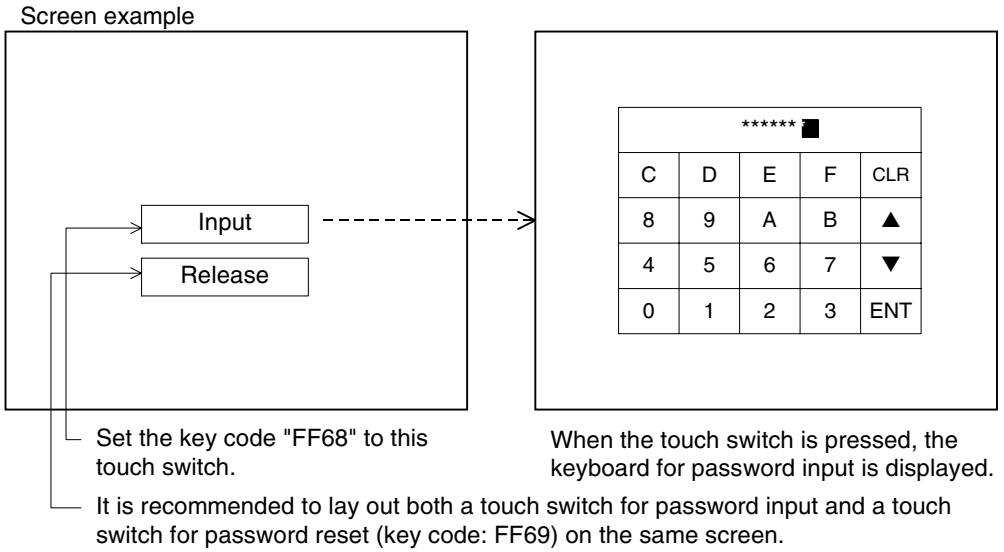
When the operator tries to switch to a screen at higher security level, the password input screen is automatically displayed.

Applicable GOT and OS version

Model name	Displaying the keyboard using a touch switch	Automatic keyboard display function
	Availability (OS version)	Availability (OS version)
F940WGOT	✓	✓
F940GOT	✓	✓(Ver6.00~)
F930GOT	✓	✓(Ver4.00~)
F930GOT-K	✓	✓
F920GOT-K	×	✓
Handy GOT	✓	✓(Ver6.00~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

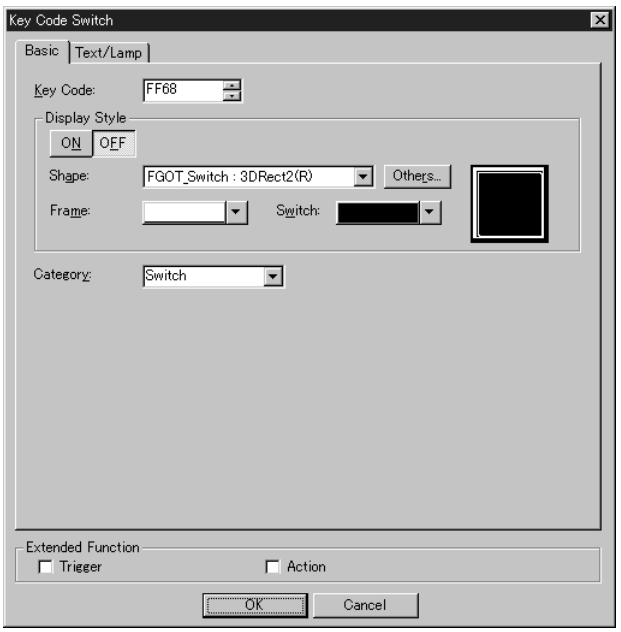
1) Displaying the keyboard for password input using a touch switch (manual)
When displaying the keyboard for password input using a touch switch, lay out on the key code switch to on the screen which the key code "FF68" is set.



Setting in the screen creation software

Operating procedure | Tool menu

Select [Object]-[Switch]-[Key Code Switch].
Set "Key Code".



2) Automatic password input keyboard display function

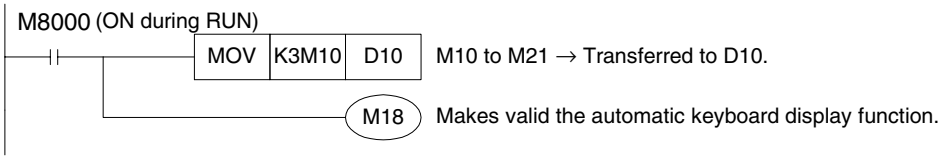
When switching to a screen at higher security level, the keyboard for password input can be displayed automatically.
Make valid the password input keyboard automatic display function in a sequence program using the system information.

a) System information

"b8" of the read device D☐ makes valid the automatic keyboard display function.
"☐" indicates the head No. specified for read devices.

b) Sequence program

Example: When the read device D☐ is assigned to D10



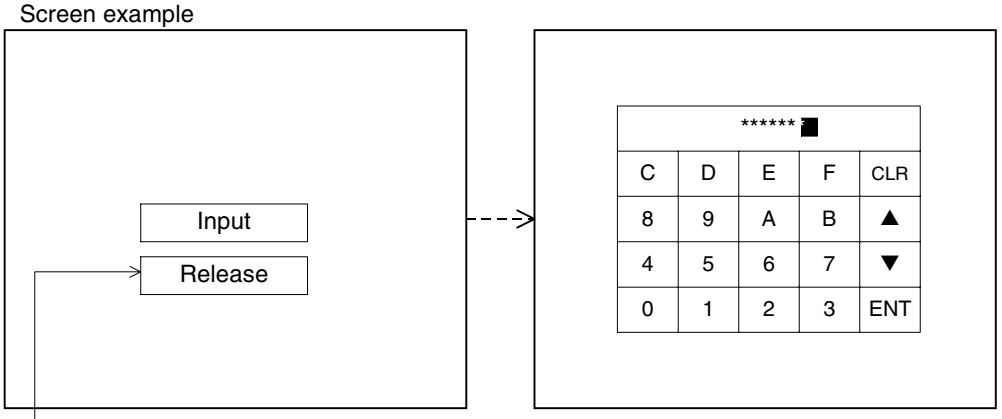
In the case of F920GOT-K

The keyboard for password input is displayed automatically.
The setting shown above is not required.

3) Resetting the password

In order to reset the password and return to the initial setting (by which only screens at the level 0 are displayed), lay out a key code switch with the key code "FF69" is set on the screen.

Screen example



Set the key code "FF69" to this touch switch.
It is recommended to lay out on the same screen both a touch switch for password input and a touch switch for password reset.
In the F920GOT-K, press the [ESC] key, then press the [9] key.

Setting in the screen creation software (GT Designer2)

Operating procedure: Tool menu

Select [Object]-[Switch]-[Key Code Switch].
Set "Key Code".

Password level when the power is turned off

When the power of the GOT is turned off, the password is reset in the same way. When the power is turned on at the next time, the security function is valid.

In the case of F920GOT-K

When resetting the password, press the [ESC] key while the Numeric Input object is not waiting for input (that is, while the cursor is not displayed), then press the [9] key.

6.1.5 Contents of version upgrade

In the GOT of the following versions, the function to display an error message at password input, the function to monitor the security level from the PLC and the function to set the security level of the system screens have been added.

Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓(Ver6.00~)	F920GOT-K	✓
F930GOT	✓(Ver4.00~)	Handy GOT	✓(Ver6.00~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

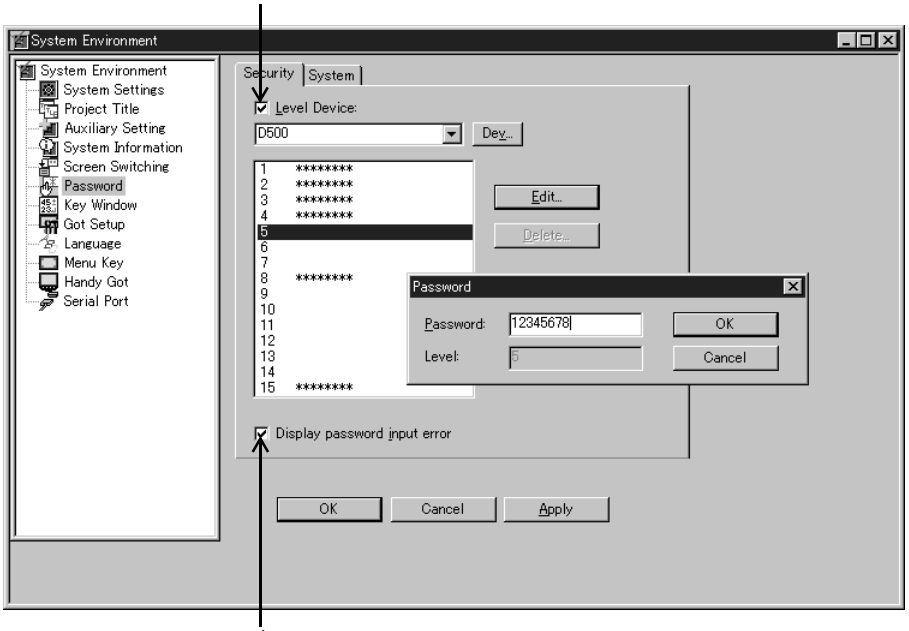
1) Function to display an error message at password input
When a wrong password is input and switching to a protected screen is tried, an error message can be displayed.

Setting in the screen creation software (GT Designer2)

Operating procedure: Tool menu

Select [Common]-[System Environment].
Set "Password".

Give a check mark (✓) to make valid the level device setting.



Give a check mark (✓) to display an error message when a password input error has occurred.

Password input and contents of error messages

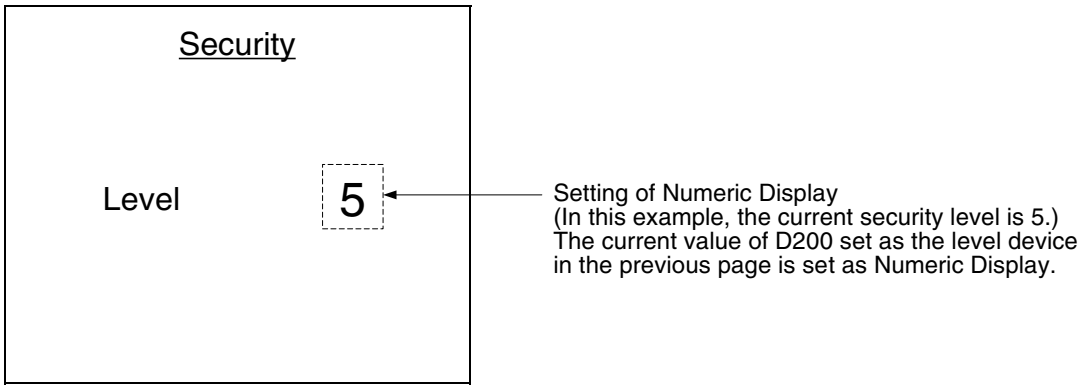
Error message	Description
The password is wrong.	The password input by the operator is wrong. (Input the correct password.)
The operation is not allowed.	The operator tried to switch to a screen at higher security level. (The password should be input.)

2) Function to monitor the security level from the PLC
By the setting described below, the current security level (0 to 15) can be checked from the PLC.

Setting in the screen creation software (GT Designer2)

Give a check mark (✓) to "Level Device" on the screen shown in the previous page to make valid the setting of device to which the security level is written.
The GOT writes the security level to this device.
By monitoring the current value of the device of the PLC from the GOT, the current security level can be seen.

Screen example

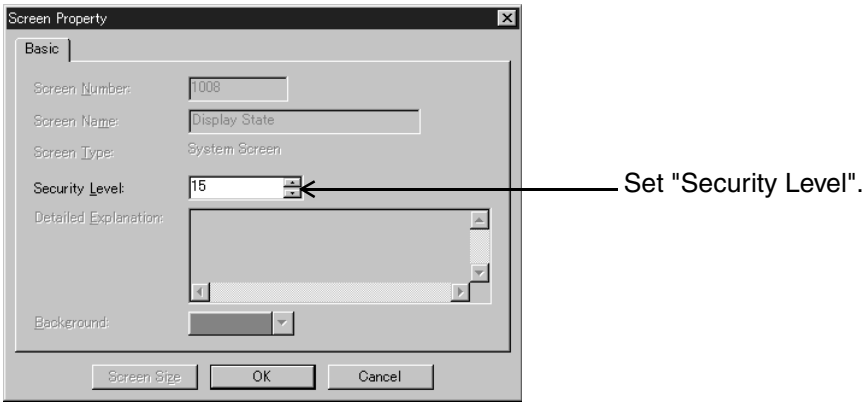


3) Function to set the security level of the system screens
By the setting described below, the security level can be set also to the system screens.

Setting in the screen creation software (GT Designer2)

Operating procedure | Project work spase

[System Screen] → Put the cursor on the screen No. to be set, then right click it.
Click "Property" on the submenu, and set "Security Level".



* When skipping this setting or when all-clearing the screen data, the security level of the system screens returns to the initial value "15".
(The security of the system screens becomes valid when the password is set to either one among the levels 1 to 15 in "Password" in "System Environment".)

6.1.6 Cautions on use

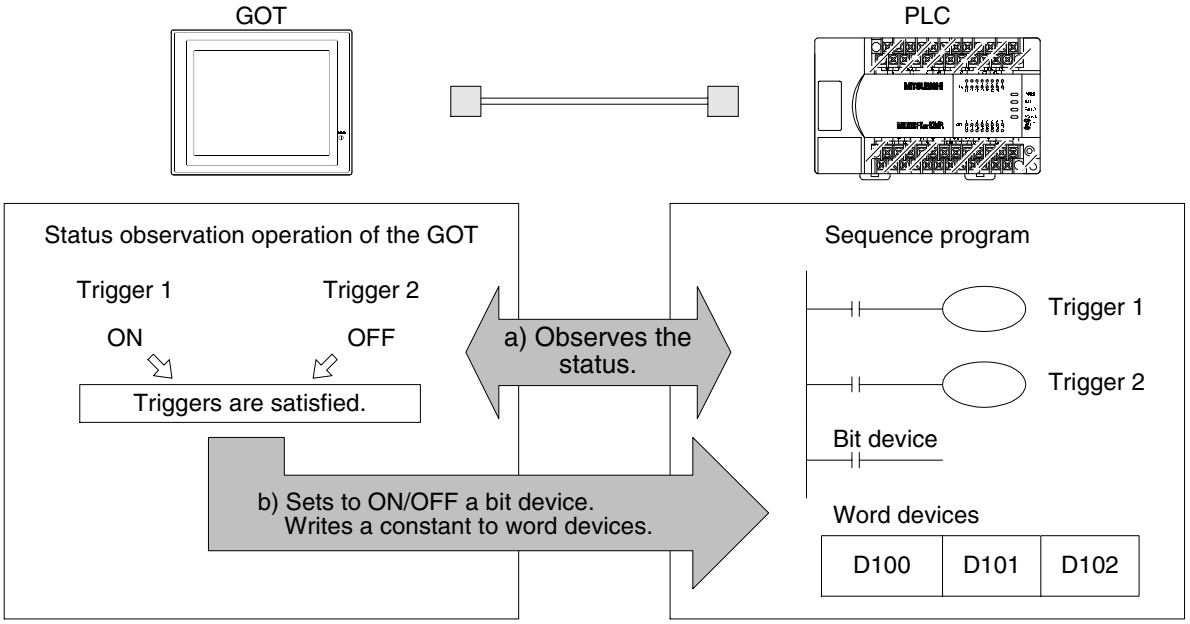
1) Password setting for the security level 15 (essential)
   If at least one security password is set, utility screens (system screens) are set to the level 15.
   Accordingly, system screens cannot be displayed if the password is not set for the level 15. Make sure to set the password for the level 15.
   The level of a utility screen (system screen) can be changed by right-clicking a system screen whose level is to be changed in the project work space, selecting the project, then selecting a desired level.
2) When the operator tries to display a screen at higher security level, the error sound (single sound) is issued 3 times.
   Provide a touch switch, and input the password.
   After inputting the password, the keyboard for password input is automatically hidden.
3) When the password is registered to the screen displayed at first in the user screen mode (screen No. 1), the keyboard for password input is displayed automatically even if a touch switch for password input is not provided to allow input of the password.

6.2 Status observation function

This Section explains the status observation function built into the GOT.

6.2.1 Outline

The status observation function monitors the ON/OFF status of specified bit devices, then sets to ON/OFF bit devices of the PLC from the GOT or writes a numeric value to word devices of the PLC according to change in the ON/OFF status of the specified bit devices.



a) The GOT observes the ON/OFF status of specified bit devices regularly or in a constant cycle. (Specify the ON/OFF status regarded as the condition using the screen creation software.)

b) When the specified conditions are satisfied, the GOT sets to ON/OFF specified bit devices of the PLC or writes a constant to specified word devices of the PLC.

1) Applicable GOT and OS version

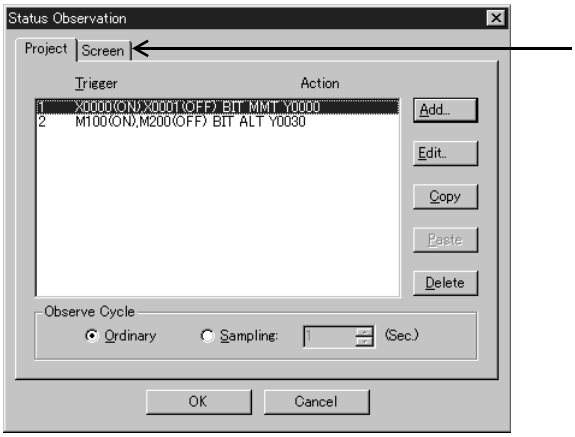
Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓(Ver3.00~)	F920GOT-K	✓
F930GOT	✓(Ver2.00~)	Handy GOT	✓

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

6.2.2 Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Common]-[Status observation].



Changes over the unit between project and screen.

6.2.3 Observe cycle

Set the cycle to monitor whether or not specified conditions are satisfied.
As the observe cycle, select "Ordinary" or "Sampling".

Ordinary : At every communication between the GOT and PLC, the GOT monitors whether triggers are satisfied.
The GOT checks the status at every approximately 200 ms to 1 sec.

Sampling : At every set time, the GOT monitors whether triggers are satisfied.
The monitoring cycle can be set within the range from 1 to 60 sec in the increment of 1 sec.

6.2.4 Trigger

Set the triggers to be monitored.
Up to two bit devices can be set.

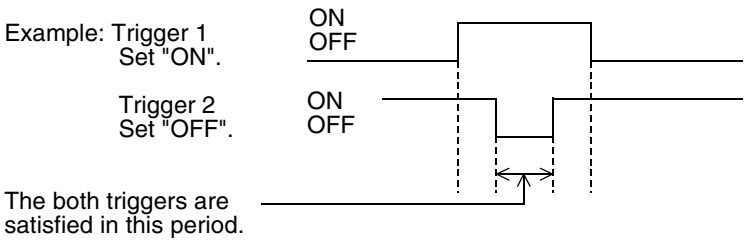
1) Trigger

   a) Trigger 1: Set the ON or OFF status of a bit device.

   b) Trigger 2: Set the ON or OFF status of a bit device.

   c) When setting both the triggers 1 and 2

      Only when the both triggers are satisfied, the operation described in the next section is executed.
      Trigger 1 should be set without exception. Set trigger 2 upon necessity.



2) Number of points to be registered for status observation and the number of write devices in each setting

   Triggers can be registered in the unit of project or for each screen (No. 1 to 500).

Number of points to be registered for status monitoring	
Each project: 40	80 in all
Each screen: 40	

* When using the overlap window function and the set overlay screen function, the points registered for status observation for the base screen are valid.

The table below shows the number of write devices available in one setting.

Device		Number of write devices
Bit device		Bit momentary, bit SET, bit RST and bit ALT operations: 1 to 40 in all
Word device	16 bits	Signed devices and unsigned devices: 1 to 20 in all
	32 bits	Signed devices and unsigned devices: 1 to 10 in all

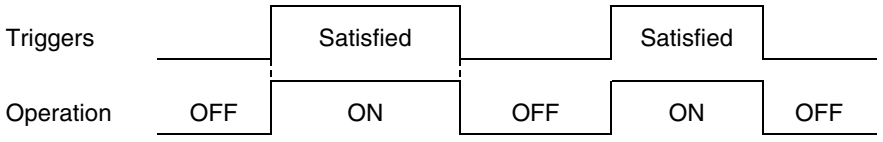
As shown above, many triggers and many write devices can be registered.
However, the response time of the GOT is affected by the contents of setting and the number of set points. For the details, refer to Section 6.2.6.

6.2.5 Setting the operation (Action)

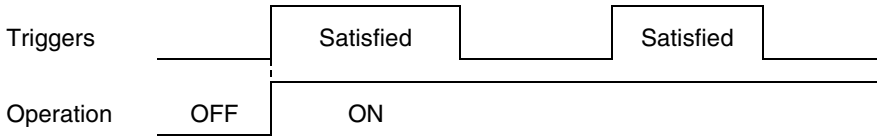
This section explains the operations executed when the conditions described in the preceding section are satisfied.
As the operations, bit devices can be set to ON/OFF, and data can be written to word devices.
One type of operation can be selected for the conditions described in the preceding section.

1) Operations of bit devices

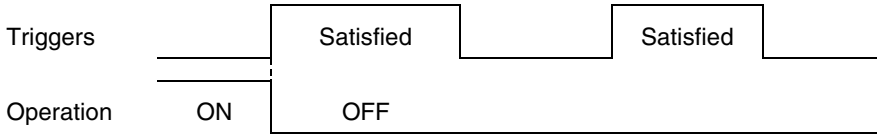
a) Bit momentary: While the triggers are satisfied, specified bit devices are kept ON.



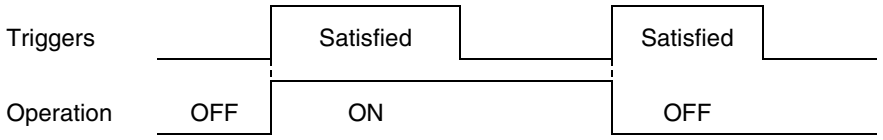
b) Bit SET: When the triggers are satisfied, specified bit devices are set to ON.
Even if the conditions are unsatisfied after the specified bit devices were set to ON, the ON status is held.



c) Bit RST: When the triggers are satisfied, specified bit devices are set to OFF.
Even if the conditions are unsatisfied after the specified bit devices were set to OFF, the OFF status is held.



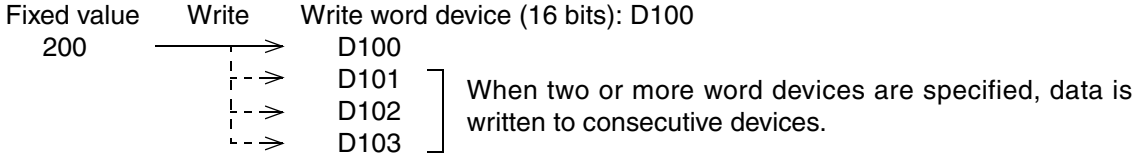
d) Bit ALT: When the triggers are satisfied, the status at that time is reversed.
(For example, if specified bit devices are ON at that time, they are set to OFF. If specified bit devices are OFF at that time, they are set to ON.)



2) Operations of word devices
When the conditions are satisfied, a fixed value or "fixed value + indirect value" is written to specified word devices.

a) Fixed
When the triggers are satisfied, a 16- or 32-bit value is written to specified word devices.
Only a decimal number can be set as a fixed value.

b) Operation example
When the triggers are satisfied, a fixed value (200) is written to D100 to D103.



For the number of write devices, refer to the preceding section.

3) Fixed + Indirect

When the triggers are satisfied, a fixed value added by the current value of an indirectly specified word device is written to specified word devices.

* A fixed value should be set without exception. Specification of only an indirectly specified word device is not allowed.

Operation example 1: When the triggers are satisfied, a fixed value (300) added by the current value of D200 is written to D210.

Fixed value		Indirectly specified device	Write	Write word device (16 bits): D210
300	+	D200	→	D210

*When the current value of D200 is "100", "300 + 100 = 400" is written to D210.

- If write word devices are specified as 32 bits, indirectly specified word devices are specified as 32 bits (2 devices) also.

Operation example 2: When two or more write devices are specified, the FMOV or BMOV write operation can be executed.

a) FMOV: A fixed value added by the current value of an indirectly specified device is written to two or more write devices.

Write device: D10 to D12 (three word devices) (16 bits)
Indirectly specified device: D100
Fixed value: 20

Fixed value		Indirectly specified device	Write	Write device (16 bits): D10 to D12
20	+	D100	→	D10
			→	D11
			→	D12

*When the current value of D100 is "30", "20 + 30 = 50" is written to D10 to D12.

b) BMOV: A fixed value added by the current value of an indirectly specified device is written to two or more write devices.

Different from FMOV, indirectly specified devices as many as write devices are set, and each value is written to each corresponding write device respectively.

Write device: D10 to D12 (three word devices) (16 bits)
Indirectly specified device: D100 to D102
Fixed value: 20

Fixed value		Indirectly specified device	Write	Write device : D10 to D12
20	+	D100	→	D10
20	+	D101	→	D11
20	+	D102	→	D12

*When D100 is "30", D101 is "40", and D102 is "50", the following values are written.

20 + 30 = 50 (D10)
20 + 40 = 60 (D11)
20 + 50 = 70 (D12)

6.2.6 Usage example (using the time of the GOT in the PLC)

The clock data built in the GOT can be written to the PLC. According to the ON/OFF status of a bit device of the PLC, the clock data can be transferred to data registers of the PLC, then used.

1) Registers inside the GOT
   The clock data built in the GOT is stored in the following registers:
   GD0: Current time (second)
   GD1: Current time (minute)
   GD2: Current time (hour)
   GD3: Current time (day)
   GD4: Current time (month)
   GD5: Current time (year)
   GD6: Current time (day of week)
2) Setting in the screen creation software
   The setting procedure is explained in the following example.
   Example 1:
   When the clock data (year, month, day, hour, minute and second) is transferred to the data register [D100] of the PLC at every 30 seconds while M100 is ON

Operating procedure	Tool menu
	Select [Common] - [Status Observation]. Set "Project".

   a) Set "Observe Cycle" to "30 sec".
   b) Click "Add".
   c) Set "Trigger 1" to "M100" and "ON".
   d) Click the "Action" tab.
   e) Select "Data Set 16 bits", set "Points" to "7", and set "Data" to "Signed BIN".
   f) Set "Device" to "D100", "Fixed" to "0", and "Indirect" to "GD0".
   g) Set the transfer method to "BMOV".

   When this data is transferred to the GOT, the current time is stored to D100 at every 30 seconds while M100 is ON.

6.2.7 Cautions on use

1) Restriction in the monitor

When many devices are registered and the status observation function is operating frequently, it takes considerable time until the operations are completed.
As a result, the response time of the GOT may be affected.

Setting condition

a) Especially when the bit momentary operation is selected in write to bit devices set in one status observation and there are many write devices. Or when there are many set conditions for the bit momentary operation.

b) When many trigger are satisfied and many write operations are executed frequently, especially when the monitoring cycle is set to "Ordinary" or "Sampling" is short.

Effect on the GOT

a) Effect on functions and objects operating in a constant cycle

Functions operating in a constant cycle may not operate according to the setting.
For example, the condition monitoring cycle, sampling function, alarm history/list function, current time and trend graph function may be affected.

b) Effect on screen data transfer

When the display is automatically changed to the DATA TRANSFER screen and screen data is transferred, the error message may be displayed in the screen creation software. In such a case, changeover the display to the DATA TRANSFER screen by key operation. Then, screen data can be sent and received.

c) Effect on monitoring, screen switching and key operations

The screen switching, monitoring and key operations may be delayed in the same way as described above.

d) Effect on the two-port interface function

When circuit monitoring, device batch processing or monitor registration is executed in the personal computer or peripheral equipment, communication error may occur in peripheral equipment.

2) When using the F920GOT-K

In the F920GOT-K, the condition monitoring interval varies considerably depending on the status of monitoring and routine processing (such as alarm function and status monitoring function). If the load is large and the interval of monitored bit devices is short, the F920GOT-K may not be able to detect pulse changes (between ON and OFF).
Let the ON/OFF status of monitored bit devices be kept for sufficient period so that the F920GOT-K can securely detect pulse changes.

6.3 Comment (for comment display and alarm function)

This section explains creation of comments used in the comment display and alarm function in the GOT.

6.3.1 Outline

Create comments to be displayed in comment display, alarm display and alarm function.
The comment list data is stored in the GOT.

[Comment]

No.	Message
1	Temperature is high.
2	Temperature is low.
3	Part A is lacked.
4	Part B is lacked.
5	Part C is lacked.
6	Part D is lacked.
⋮	⋮
32757	All motors are stopped.
32758	Motor A is stopped.
32759	Motor B is stopped.
32760	Motor C is stopped.
32761	Water temperature is high.
32762	Water temperature is medium.
32763	Water temperature is low.
32764	Water quantity is small.
32765	Water quantity is large.
32766	Pressure is low.
32767	Pressure is high.

[Object]
Different comments are displayed for "ON" alarm and "OFF" alarm in "Bit Comment".

[Object]
Comment corresponding to the value of a data register (subtracted by "1") specified in "Word Comment" is displayed.

[Function]
Alarm List
Alarm History
Alarm Frequency

[Object]
Alarm History

[Object]
Alarm List

[Object]
Floating Alarm

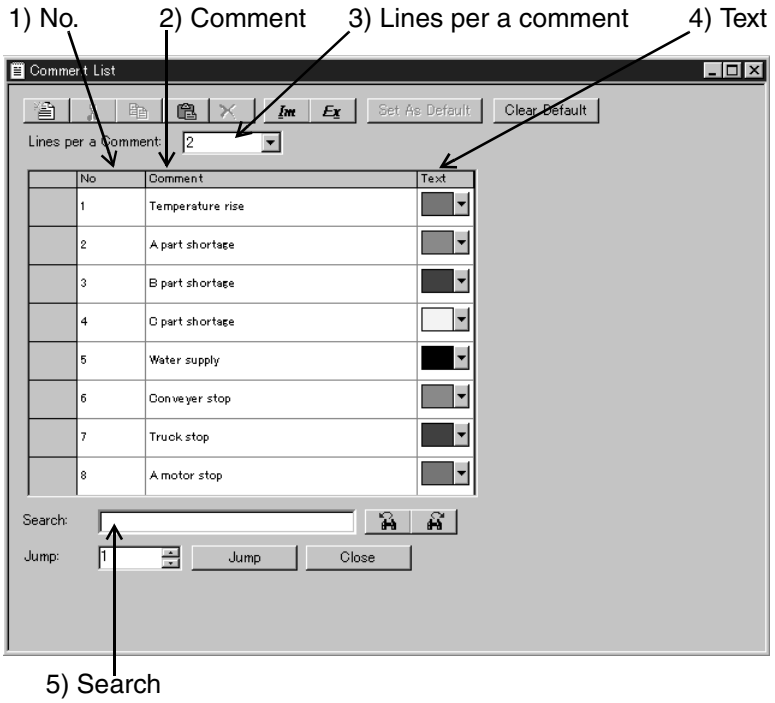
6.3.2 Applications of comments

Classification	Function	Name	Reference
Object	Comment Display	Bit Comment	Refer to the "GT Designer2 Reference Manual".
		Word Comment	Refer to the "GT Designer2 Reference Manual".
	Alarm Display	Alarm List	4.9
		Alarm History	
		Floating Alarm	
System screen	ALARM MODE	DISPLAY STATUS	11
		ALARM HISTORY	
		ALARM FREQUENCY	

6.3.3 Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Common]-[Comment].



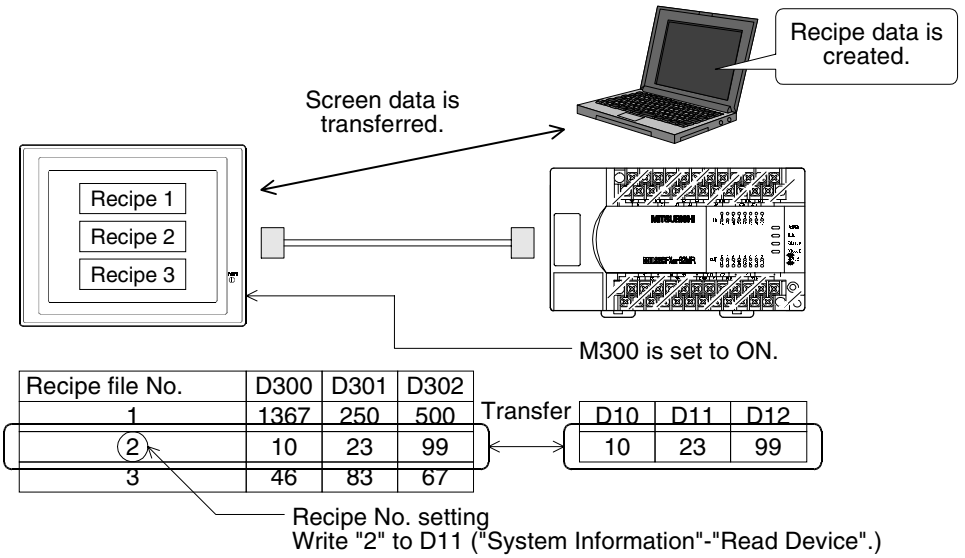
Item	Function
1) No.	Specifies the No. for display in the comment display, alarm list and alarm history functions. Nos. 0 to 32767 can be registered.
2) Comment	Allows to input a character string registered in the comment list. Up to 256 full-width characters (Kanji at first JIS level, Katakana, Hiragana, alphabets, numbers and symbols) or 512 half-width characters (Katakana, alphabets, numbers and symbols) can be input. The number of characters which can be displayed on the screen is different in each product.
3) Text	Selects the character display color. Comment Display (object) This setting is invalid if the character color (attribute) in comment display is changed. Alarm function (system screen)/Alarm Display (Object) Comments are displayed in the color set here.
4) Lines per Comment	Specifies in how many lines a comment is displayed in the "Comment" column in the comment list (that is, specifies the height of the "Comment" column).
5) Search	Allows to input a comment to be searched. When many comments are registered, a desired one can be searched using the character string input here.

6.4 Recipe function

This section explains the recipe function which transfers data between the recipe data of the GOT and a specified word device of the PLC.

6.4.1 Outline

The GOT has a built-in memory for recipe data corresponding to 4,000 word devices (16 bits) of the PLC. By setting to ON or OFF a bit device of the PLC or by giving a command from a touch switch, a data register of the GOT can be transferred to a specified word device.
Because the machine processing data and the initial setting data including positioning data can be transferred to the PLC, this function is useful to setup changes.



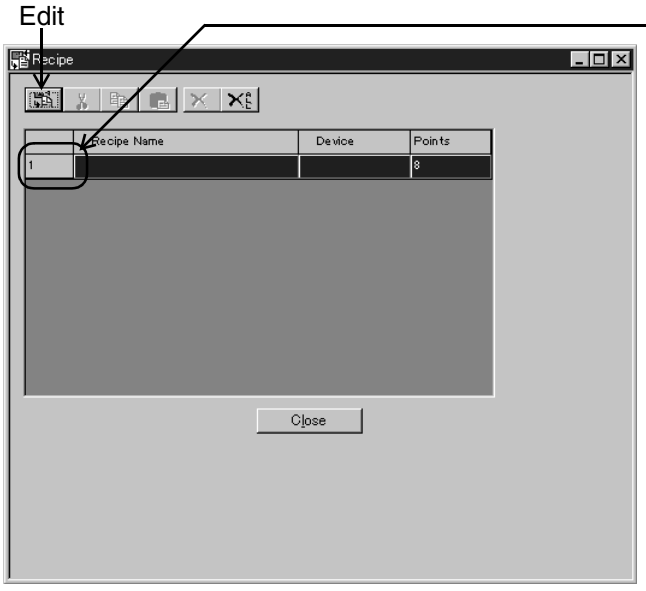
6.4.2 Creating the recipe data in the GOT and setting the transfer

Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

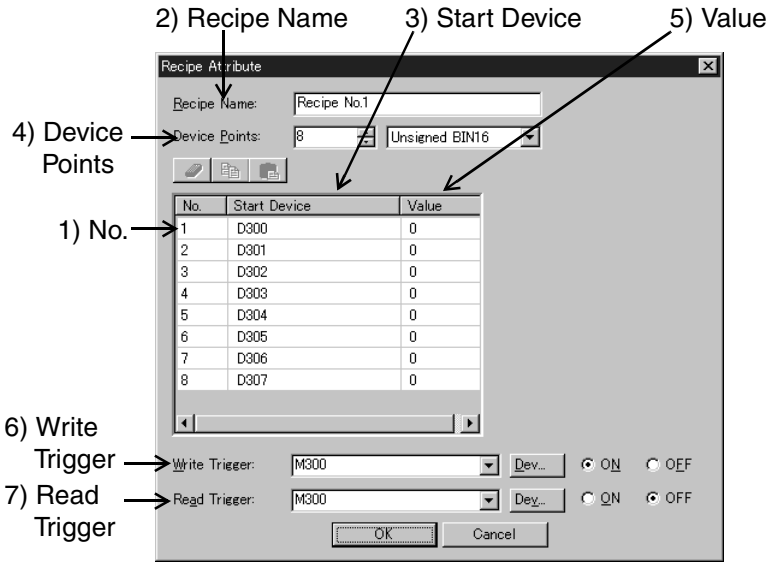
Select [Common]-[Recipe].

1) Selecting the recipe file No.



No. (file No.)
At first, click a recipe file No. to select it. (If no recipe file No. is selected, the Edit button remains gray and is invalid.)

2) Creating the recipe data



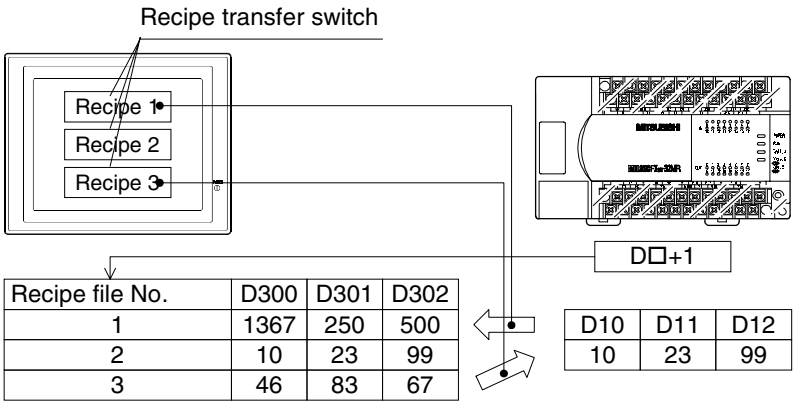
Set each recipe file in details.

Item	Function
1) No.	Specifies the recipe file No. When the total of "Device Points 4)" is 4,000 or less, two or more recipe files can be created. Selecting the recipe file No. from the PLC The "No. 1)" of the recipe to be read/written by a read device in the system information can be specified from the PLC. In the read device, write the recipe number subtracted by "1". Examples: When specifying the recipe No. 1 → Write "0" to the read device. When specifying the recipe No. 2 → Write "1" to the read device.
2) Recipe Name	Allows to input the recipe name arbitrarily. The name set here is only a reference for indicating the contents of the recipe, and cannot be displayed on the GOT screen.
3) Start Device	Specifies a word device of the PLC regarded as the transfer destination. From the device No. displayed here, devices as many as the number specified in "Device Points 4)" are occupied.
4) Device Points	Specifies the number of devices to be transferred. For recipe No. 2 and later, the number (within the range from 1 to 4,000) used for the recipe No. 1 is adopted.
5) Value	Writes the value of a device written to the PLC. When data is read by the read trigger, the value here is overwritten by the read value.
6) Write Trigger *	Writes the data set in "Value 5)" to "Head Device 3)" when the bit device specified here turns ON or OFF.
7) Read Trigger	Reads the data starting at "Head Device 3)" as many as "Device Points 4)" points to the built-in memory of the GOT when the bit device specified here turns ON or OFF.

* The write trigger should be set without exception, but the read trigger does not have to be set if reading is not necessary.

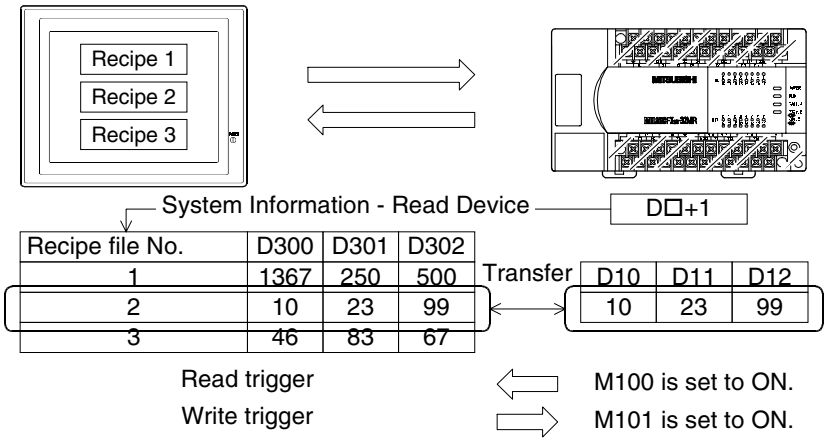
6.4.3 Transfer using touch switches (object) in the GOT

When a touch switch (recipe transfer switch) is pressed, a corresponding recipe is transferred.



6.4.4 Transfer using bit devices (recipe function) of the PLC

When a bit device of the PLC is set to ON, corresponding recipe data is transferred.
The transferred recipe No. is selected by the value of a word device specified by the read device (D□+1) in "System Information".



Use a touch switch to give a command to set to ON/OFF a trigger bit.

6.4.5 Recipe Data Read Function has been changed (OS version upgrade)

When the all-screen data is read from the personal computer, the recipe data can be read also. At this time, the built-in memory from which data is read is different according to the GOT version as shown below.

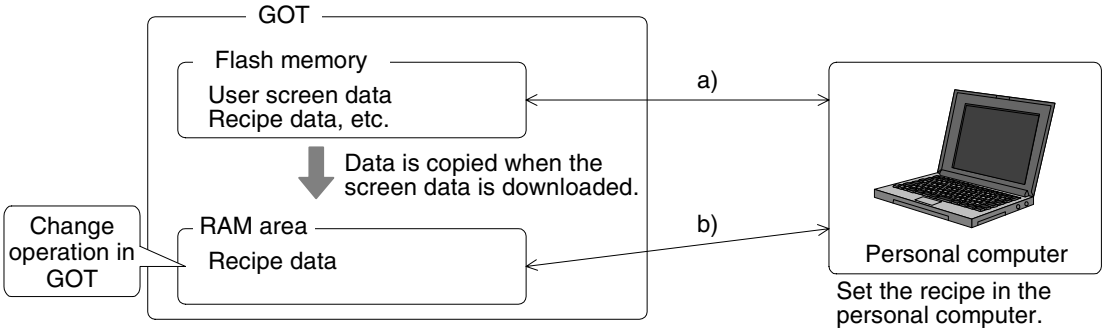
1) Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓(Ver1.30~)	F930GOT-K	✓
F940GOT	✓(Ver6.30~)	F920GOT-K	✓
F930GOT	✓(Ver4.30~)	Handy GOT	✓(Ver6.30~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside Parantheses.

×: Setting is disabled.

2) Data read from the memory



When the OS version of the GOT is equivalent to or later than those shown above

Data is read from the RAM area b). Accordingly, the recipe data changed in the GOT can be read.

When the OS version is earlier than those shown above

Data is read from the Flash memory a). Accordingly, it is the recipe data created in the screen creation software. The data changed in the GOT cannot be read.

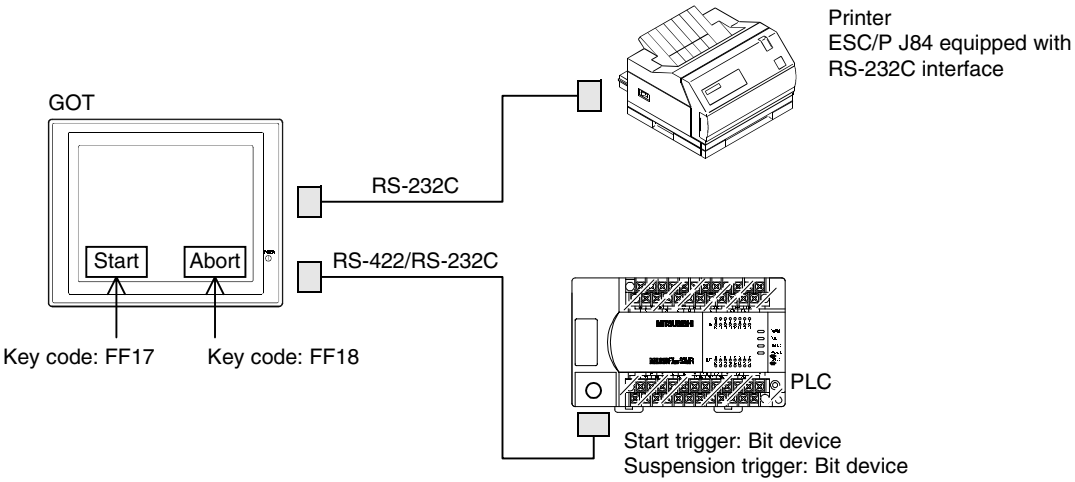
6.5 Hard copy function (printing the user screen)

This section explains the hard copy function which outputs the GOT screen to the printer.

6.5.1 Outline

The screen image currently displayed can be printed in the printer by a touch switch or command from a bit device of the PLC.

- The screen image currently displayed is printed in the printer connected to the RS-232C interface of the GOT.
- Set the hard copy function in the screen creation software.
- Only user screens (which are displayed in the user screen mode) can be printed in the printer.
  System screens (HPP mode, alarm mode, sampling mode, other mode, etc.) cannot be printed in the printer.
- Printing is started or suspended when a bit device of the PLC is set to ON/OFF or when a touch switch is pressed.



For the details of connection between the GOT and printer, refer to the "GOT-F900 Series Hardware Manual [Connection]".

1) Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	×
F940GOT	✓(Ver3.00~)	F920GOT-K	×
F930GOT	×	Handy GOT	✓(Ver3.00~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

6.5.2 Controlling the printing

1) Starting and suspending the printing
   Printing can be started and suspended in the following two methods.

   a) Starting or suspending by a trigger

      When a bit device of the PLC set in the screen creation software turns ON, printing command or suspension command is executed.
      The GOT monitors in a constant cycle whether such bit devices have turned ON (monitoring cycle).
      The monitoring cycle can be set within the range from 1 to 60 seconds in the increment of 1 second.

      * If the ON period of a monitored bit device is shorter than the monitoring cycle, it may not be regarded as a trigger. Make sure that the ON period of a monitored bit device is longer than the monitoring cycle. (Refer to a program example shown later.)

   b) Starting or suspending by a touch switch

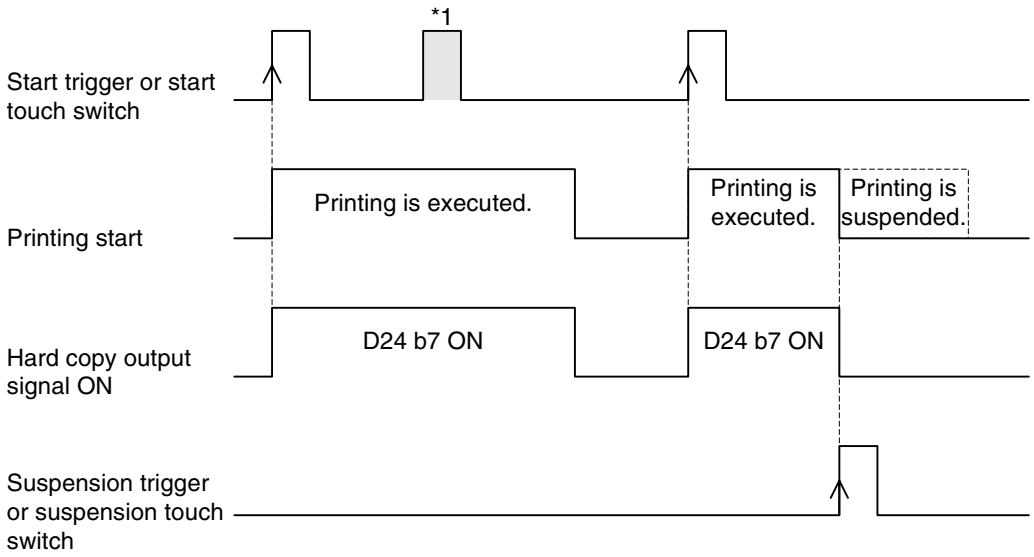
      Printing can be started or suspended using a touch switch.
      Assign the following key codes to touch switches.

	Start	Suspension
Key code	FF17	FF18

2) Monitoring the hard copy output signal
   In the system information, the hard copy output signal for display screen is assigned.
   System information (Refer to "3.6 System information".)
   When printing is started by a trigger or touch switch, the following bit in the system information turns ON.

	System information
Hard copy output signal	Specified write word device: b7 of head □+4 turns ON.

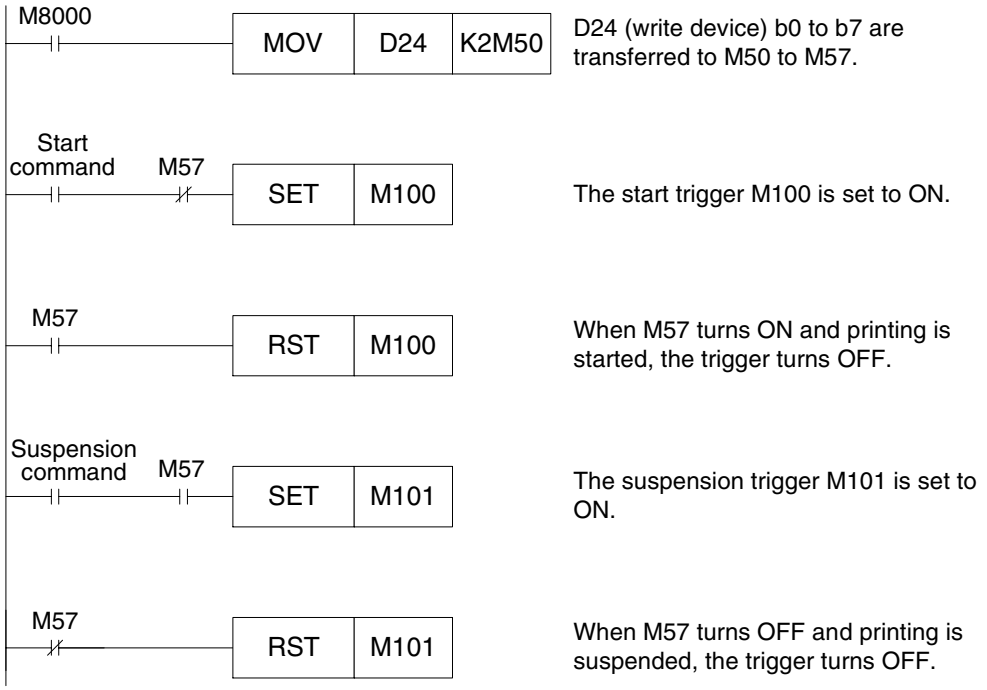
3) Printing start/end timing and sequence program example
When the printing completion or suspension command (trigger or touch switch) is input, the signal turns OFF.
Printing is executed at the following timing.



*1 The start command given during printing is invalid, and printing is not executed.

Sequence program example

In the program below, the start and suspension triggers are used.
The start trigger is assigned to M100, and the suspension trigger is assigned to M101.



4) Printing image
All display screens are printed in two colors (white and black).
In the 8-color type GOT, the display colors are converted and printed as shown below.
In the 256-color type GOT, the display colors are treated in the same way as the following 8 colors, then printed in white and black.

Screen Display Colo : Black, red, blue and green → Printed in black.
White, purple, yellow and light blue → Printed in white.

Reverse : Reverses the white and black on the screen in printing.

Number of Screens : Specify the number of screens printed in one page. When the specified number of screens are printed, the page is changed.

6.5.3 Cautions on use

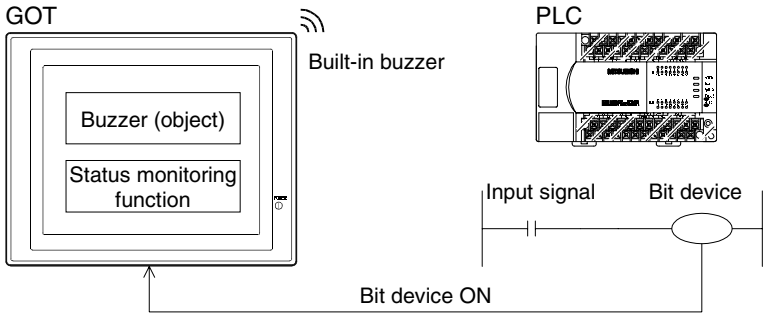
1) Availability according to the GOT model
   a) In the F920GOT
      The hard copy function is not available.
   b) In the Handy GOT
      The hard copy function is not available because the RS-232C port is available only for screen data transfer.
   c) In the F930GOT, F930GOT-K and F940GOT
      Connect the GOT to the PLC via RS-422 communication.
      Because the printer and GOT should be connected via RS-232C communication, the hard copy function is not available when the PLC (micro computer) and GOT are connected via RS-232C communication.
   d) In the F940WGOT
      The hard copy function is available because these GOT models have two RS-232C channels though the PLC and GOT are connected via RS-232C communication.
2) When another equipment is combined
   a) When a bar code reader and printer are used at the same time
      These equipment cannot be used at the same time.
      Only one of them can be used at a time.
   b) When "PLC TYPE" is set to "UNIVERSAL"
      Because the communication setting (transmission specifications) is "Serial Port" in both the micro computer and printer, different setting is not available.
      Set the micro computer and printer so that the communication setting is common.
3) Caution on suspension of printing
   When printing is suspended, line feed and page change may not be executed correctly by the next print command in some printers.
   If printing is suspended, discharge the paper once, then start printing again.
4) Suspension of communication with the PLC
   When printing is started, the GOT saves the screen image currently displayed to the internal memory. As a result, communication with the PLC is suspended for approximately 1 second, but communication is restarted again after that.
   Accordingly, any operation executed while communication is suspended is invalid.

6.6 Buzzer function (controlled from the PLC)

This section explains how to control the buzzer built in the GOT from the PLC.

6.6.1 Outline

The buzzer of the GOT can be issued from the PLC by setting "Buzzer" (object) in the screen data or by setting GB (bit inside the GOT) to the status monitoring function.



The buzzer sound can be controlled from the PLC in either method below.

a) Set "Buzzer" (object) to a screen on which the buzzer is to be issued.

b) Set GB (bit inside the GOT) to the status observation function.

1) Applicable GOT and OS version

"Buzzer" object setting

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	✓
F940GOT	✓	F920GOT-K	✓
F930GOT	✓	Handy GOT	✓

Status monitoring function setting

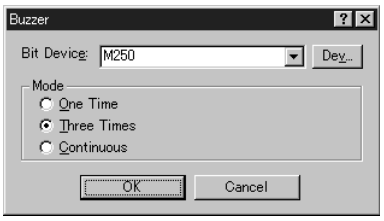
Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓(Ver1.40~)	F930GOT-K	✓
F940GOT	✓(Ver6.40~)	F920GOT-K	✓
F930GOT	✓(Ver4.40~)	Handy GOT	✓(Ver6.40~)

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

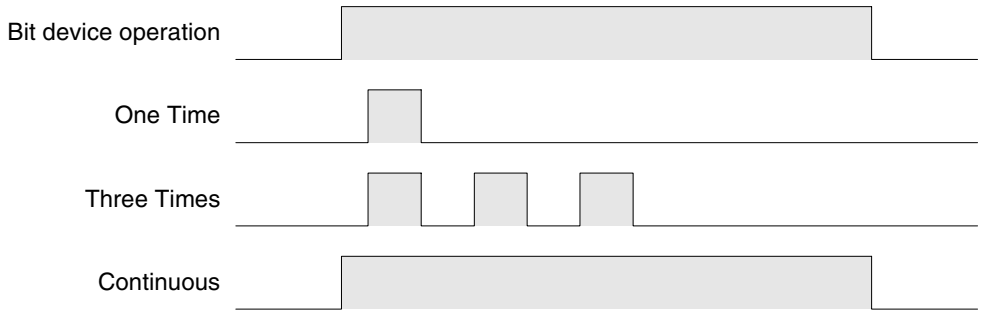
2) Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Object]-[Buzzer].



Buzzer sound type



One Time:
When the bit device turns ON from OFF, a short sound is issued once.
(The sound type is equivalent to the key input sound.)

Three times:
When the bit device turns ON from OFF, a short sound is issued three times.
(The sound type is equivalent to the error indication sound.)

Continuous:
While the bit device is ON, continuous sound is issued.

6.6.2 Issuing the buzzer using the status observation function (GB16 to GB18)

When issuing the buzzer using the status monitoring function, set either one among GB16 to GB18 to the status observation operation.

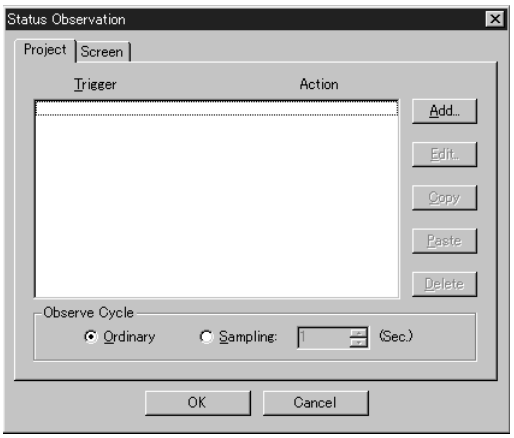
1) Relationship between the GB and the buzzer sound
   The relationship between the GB and the buzzer sound is as shown below.
   GB16: When the GB16 turns ON from OFF, a short sound is issued once
   GB17: When the GB17 turns ON from OFF, a short sound is issued three times.
   GB18: While the GB18 is ON, continuous sound is issued.

2) Usage examples
   Issue the buzzer according to the ON/OFF status of bit devices (M100, M200 and M300) of the FX Series PLC.
   When M100 turns ON from OFF, a short sound is issued once.
   (The sound type is equivalent to the key input sound.)
   When M200 turns ON from OFF, a short sound is issued three times.
   (The sound type is equivalent to the error indication sound.)
   While M300 is ON, continuous sound is issued.

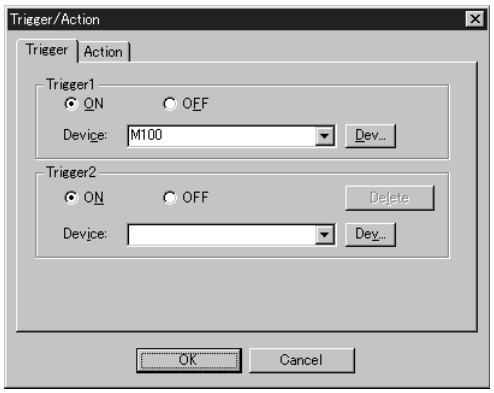
3) Setting in the screen creation software (GT Designer2)
   Operating procedure: Tool menu
   Select [Common]-[Status Observation].

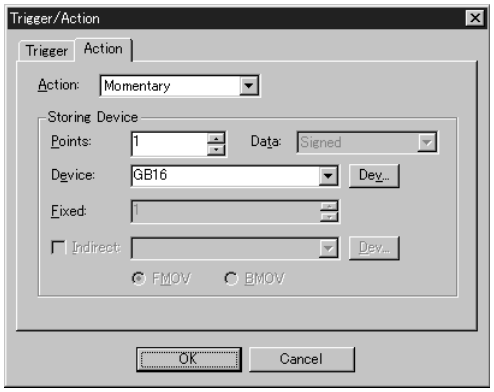
   a) When setting the buzzer using the status monitoring function on only a certain screen, select the "Screen" tab, specify "Screen No.", then click the [Add...] button.
      When setting the buzzer using the status monitoring function on the entire project, click the [Add...] button on the "Project" tab.

   b) Set "Observe Cycle" to "Ordinary".



c) Set "Trigger" and "Action" as described below.





Setting by which a short sound is issued once when M100 turns ON from OFF (screen example)

Trigger 1 : "ON" and "M100"
Trigger 2 : No setting
Action : Momentary
Storing Device : "1" and "GB16"

Setting by which a short sound is issued three times when M200 turns ON from OFF

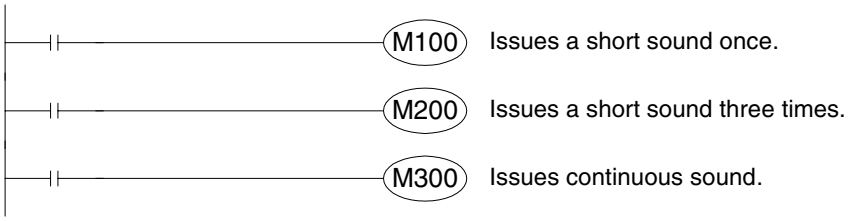
Trigger 1 : "ON" and "M200"
Trigger 2 : No setting
Action : Momentary
Storing Device : "1" and "GB17"

Setting by which continuous sound is issued while M300 is ON

Trigger 1 : "ON" and "M300"
Trigger 2 : No setting
Action : Momentary
Storing Device : "1" and "GB18"

d) Exit the setting screen.

4) Sequence program example
By a program in the PLC, set to ON/OFF M100, M200 and M300 respectively.



6.6.3 Cautions on use

1) When controlling the buzzer using the status observation function

a) Buzzer sound while the system screen is displayed

Even while the system screen is displayed, the buzzer sound function is valid.

b) Action according to the observation status

The condition monitoring interval varies considerably within the range from 200 ms to 1 sec depending on the status of monitoring and routine processing (such as alarm function and status observation function). Accordingly, if the ON/OFF status of a condition device is short, the GOT may not be able to detect status changes (between ON and OFF).
Let the ON/OFF status of each condition device be kept for 1 sec or more so that the GOT can securely detect status changes.

2) When controlling the buzzer using the "Buzzer" object

a) When the buzzer is set to OFF

When the buzzer is set to OFF in the screen creation software or on the GOT system screen, the buzzer is not issued at all by any operation or any setting.
In order to issue the buzzer, execute the following setting.

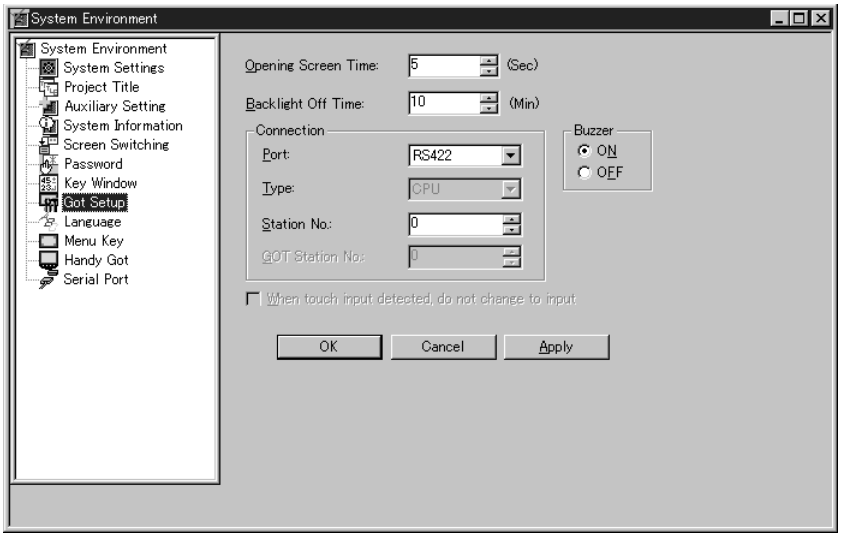
Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Common]-[System Environment].

i) Select "Auxiliary Setting", then click the check box of "Use Serial Port, Setup, Language, Menu Key" to give a check mark (✓).

ii) Select "GOT Setup", then select the "ON" radio button in "Buzzer".



Setting in the GOT

Set "BUZZER" in "SET-UP MODE" to "BUZZER ON".

b) Buzzer sound while a screen is displayed for which the buzzer is not set

The buzzer is valid while a screen is displayed for which the buzzer is set.
If a screen is displayed for which the buzzer is not set, the buzzer is not issued.

c) Sequence program

Because the GOT checks the device status in the PLC at every 200 to 300 ms, the device ON period should be 300 ms or more.
Especially in the F920GOT-K, the device check interval varies considerably within the range from 200 ms to 1 sec depending on the status of monitoring and routine processing (such as alarm function and status observation function).
Accordingly, if the ON/OFF status of a device is short, the F920GOT-K may not be able to detect status changes (between ON and OFF).
Let the ON/OFF status of each device be kept for 1 sec or more so that the F920GOT-K can securely detect status changes.

6.7 Transferring the screen data using the F9GT-40FMB (GOT ⇔ memory board)

The memory board F9GT-40FMB (hereafter reffered to as "memory board") is offered to transfer the screen data with the Flash memory built in the GOT.
This memory board is convenient in the following applications.
For the details of the operating procedure, refer to Section 6.7.3.

1) If this memory board is used to transfer same screen data to two or more GOT units, the screen data transfer time at the second time and later is reduced.
2) If this memory board is used to change screen data in a GOT unit located in a distant place, the screen data can be transferred easily to the GOT even if a personal computer in which the screen creation software is installed is not located in the distant place.

Applicable GOT and OS version

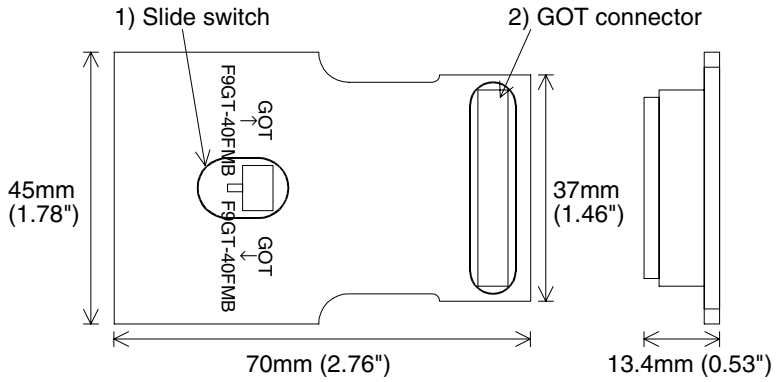
Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓(Ver1.40~)	F930GOT-K	✓(Ver4.90~)
F940GOT	✓(Ver6.40~)	F920GOT-K	×
F930GOT	×	Handy GOT	×

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

If the OS version of the GOT is former than those shown above

When the memory board is mounted to the GOT, the screen data is written to the GOT without regard to the setting of the DIP switch. The transfer direction confirmation screen is not displayed.
Confirm the version of the GOT before mounting the memory board.

6.7.1 Name of each part



Unit: mm (inches)

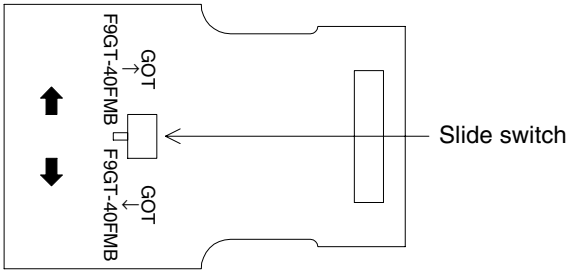
1) Slide switch
Selects the screen data transfer direction.
Transfer direction: "F9GT-40FMB → GOT" or "GOT → F9GT-40FMB"
2) GOT connector
Connected to the extension interface port provided on the rear face of the GOT.

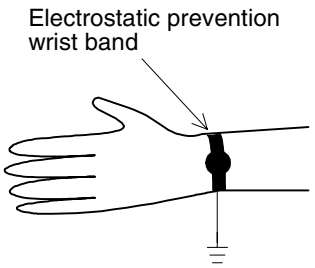
Memory specifications

Built-in flash memory: 1 MB

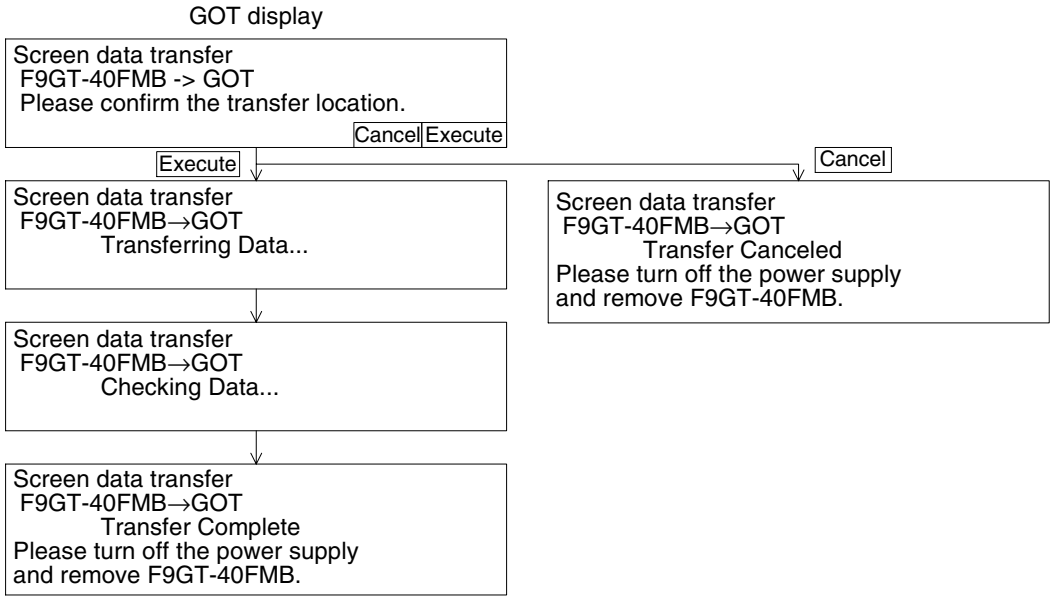
6.7.2 Screen data transfer procedure

1) Wear an electrostatic prevention wrist band, etc. to eliminate the static electricity charged in the body before starting the screen data transfer procedure.
2) Select either transfer direction "F9GT-40FMB → GOT" or "GOT → F9GT-40FMB" by setting the slide switch on the memory board.

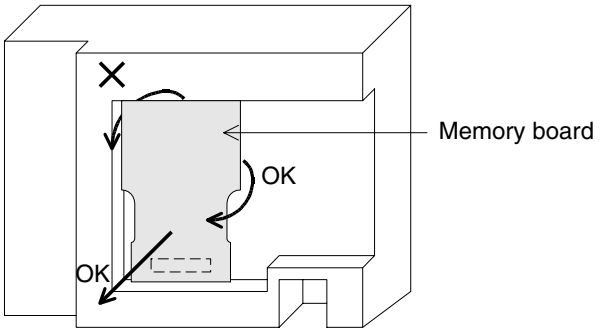




3) Confirm that the power of the GOT is OFF, then mount the memory board to the extension interface port provided on the rear face of the GOT.
4) Set to ON the power of the GOT. Then, the transfer screen is displayed automatically according to the setting of the slide switch.
   If the memory board is mounted to the GOT whose version is former than the applicable versions and the power of the GOT is set to ON, however, the screen data saved in the memory board is written automatically to the GOT without displaying the transfer direction confirmation screen shown below.
5) Click the [OK] key to start transfer. (The screen data is transferred, then collated.)
   Click the [Cancel] key to abort the transfer.



6) Removing the memory board
When the transfer is completed, set to OFF the power of the GOT, then remove the memory board.
For removal, lift up a side of memory board, or pull out the memory board from the top.
Example: F940GOT (rear face)



6.7.3 Caution on use

1) When the GOT OS version is former than the applicable versions
If the memory board is mounted to such a GOT and the power of the GOT is set to ON, the screen data saved in the memory board is written automatically to the GOT without regard to the setting of the DIP switch. The transfer direction confirmation screen is not displayed.

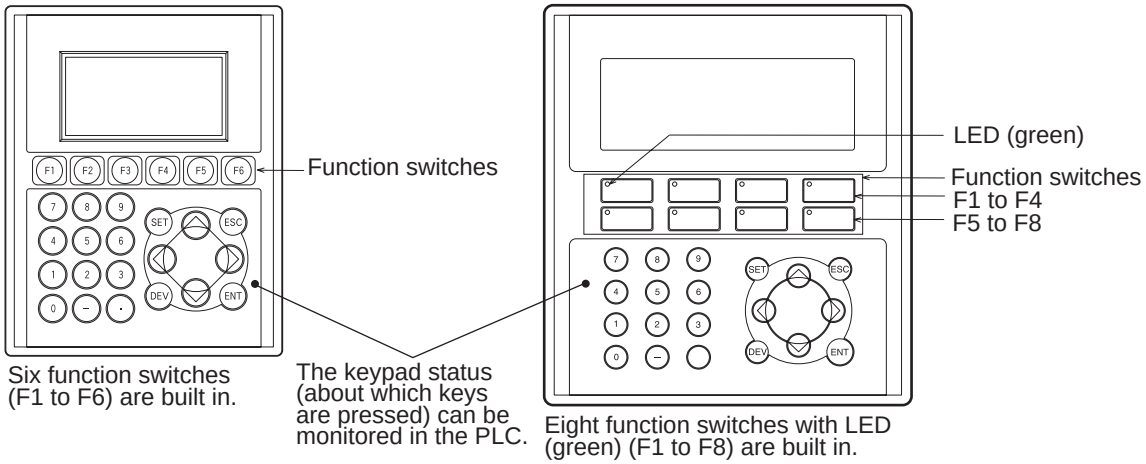
MEMO

7. Keypad Function in F920GOT-K and F930GOT-K

This chapter describes handling of the keypad in the F920GOT-K and F930GOT-K.

7.1 Outline

The F920GOT-K and F930GOT-K are equipped with keypads for numeric value setting and assignable function keys.



1) Function switches (Refer to Section 7.2)
   All key presses and LED indicator status are transferred to and from the PLC via a communication cable, therefore, additional wiring is not required.

   Procedure for in the screen creation software (GT Designer2)
   Function and LEDs assigned to the function keys can be set in the screen creation software.
   a) Setting the switch functions to the function keys (Refer to Section 7.2.1.)
   b) Setting the LEDs to the function keys. (Refer to Section 7.2.2.)

2) Acquiring the key pressing information (Refer to Section 7.5.)
   In the F920GOT-K and F930GOT-K, the information about which keys are pressed on the keypad can be monitored in the PLC.

   Procedure for in the screen creation software (GT Designer2)
   a) Setting the devices according to the system information (Refer to Section 7.2.3.)

7.2 Function Keys

The F920GOT-K is equipped with six function keys. The F930GOT-K is equipped with eight function keys with green LEDs. Switching, data write and screen switching operations can be assigned to them.

7.2.1 Assigning the switch function to the function keys

1) Instructions for the screen creation software (GT Designer2)
Common procedure for all screens

Operating procedure | Tool menu

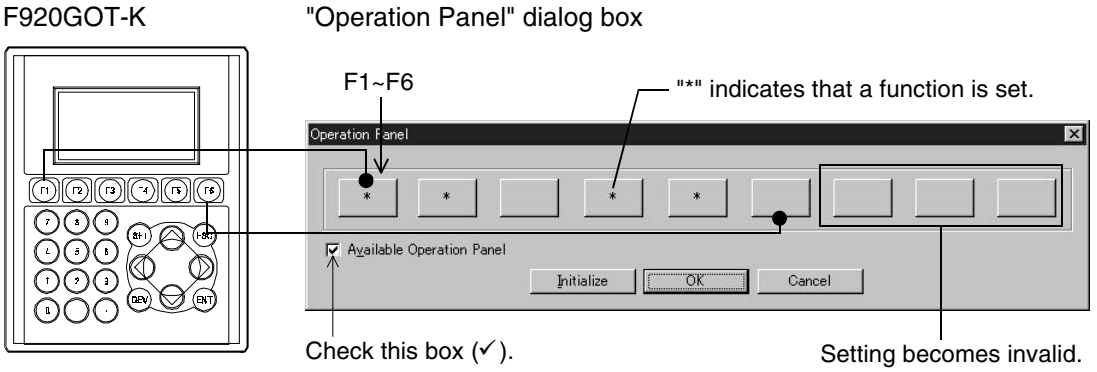
Select [Common]-[Operation Panel].

Setting procedure on each screen

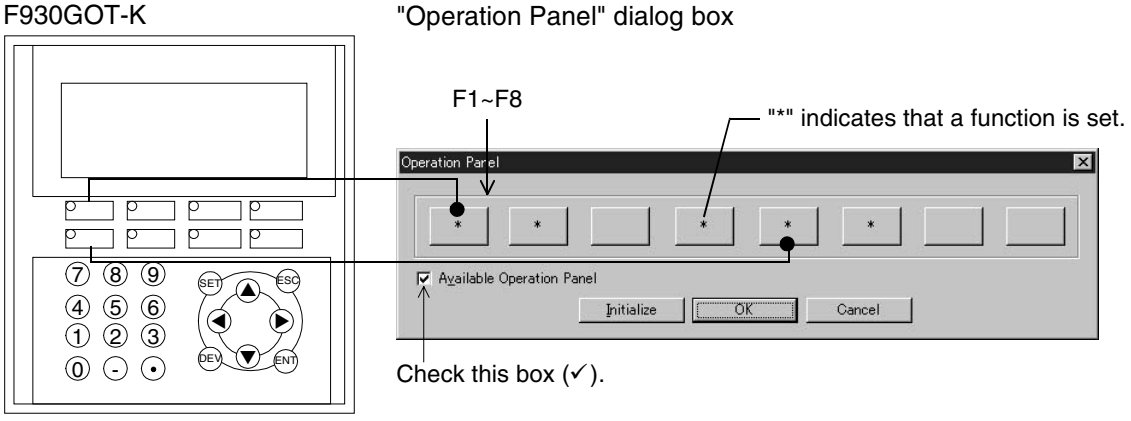
Operating procedure | Workspace

Select a screen, right-click it, then select "Operation Panel".

a) Setting up the function keys (for the F920GOT-K)
The function keys in the F920GOT-K are assigned as shown below.



b) Setting up the function keys (for the F930GOT-K)
The function switches in the F930GOT-K are assigned as shown below.



7.2.2 Setting up the LED indicators (only in the F930GOT-K)

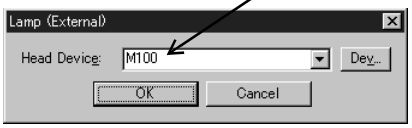
A green LED is provided on each function key in the F930GOT-K. Each LED can be set to ON and OFF using an arbitrary device.
Assign a device to the screen having the smallest No. (screen No. 0 or 1) in "Lamp (External Lamp)" in the screen creation software.
(If a device is set to two or more screens, only the setting to the screen having the smallest No. is valid.)
The chosen device number will be the head address for the eight devices corresponding to the eight LEDs.
While a set device is ON, a corresponding LED is lit. While a set device is OFF, a corresponding LED is extinguished. If no device is set, a corresponding LED remains extinguished.

1) Procedure for in the screen creation software (GT Designer2)

Operating procedure | Tool menu

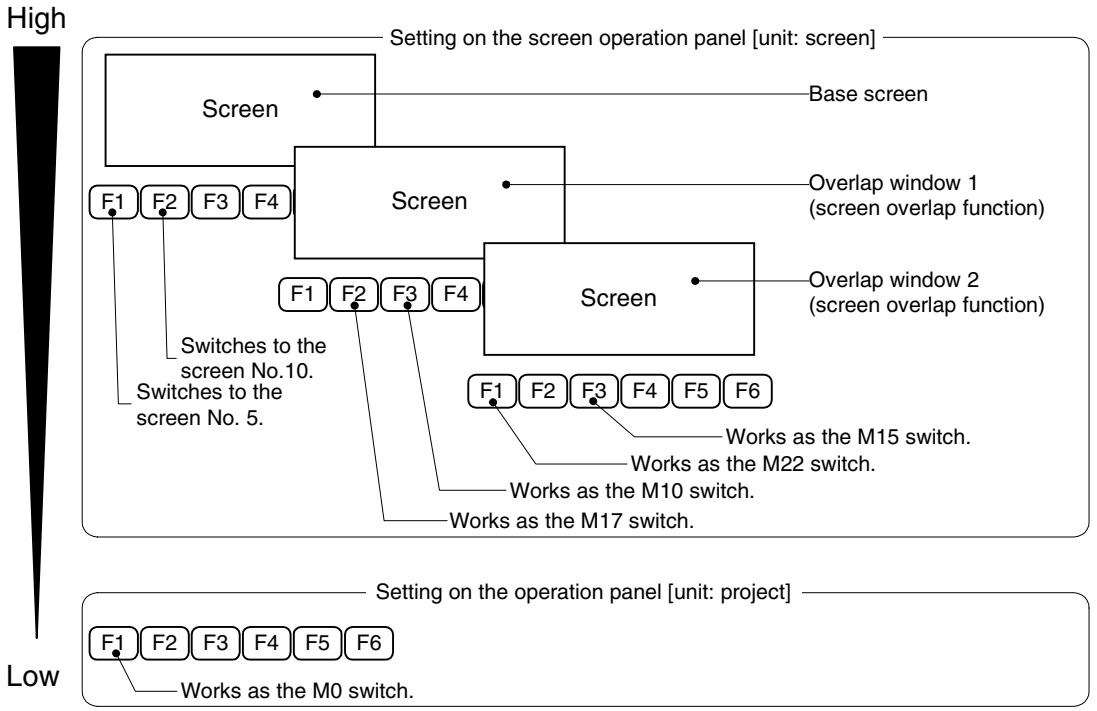
Select [Object]-[Lamp]-[External Lamp].

Set a head device No.
Starting from this device No., eight devices are occupied corresponding to the LEDs.



7.2.3 Cautions on use

Function keys can be assigned to different functions for different screens.
If there are overlapping windows, functions associated with the base screen will have priority.
Functions for overlapping screens will then have priority according to the overlapping order.
Functions for those screens closest to the base screen will have highest priority.
The F920GOT is picked up as an example in the explanation below.



Suppose that the screens shown above are overlapping.
For the [F1] key, only the function "Switches to the screen No. 5." is valid.
For the [F2] key, only the function "Switches to the screen No. 10." is valid.
For the [F3] key, only the function "Works as the M10 switch." is valid.

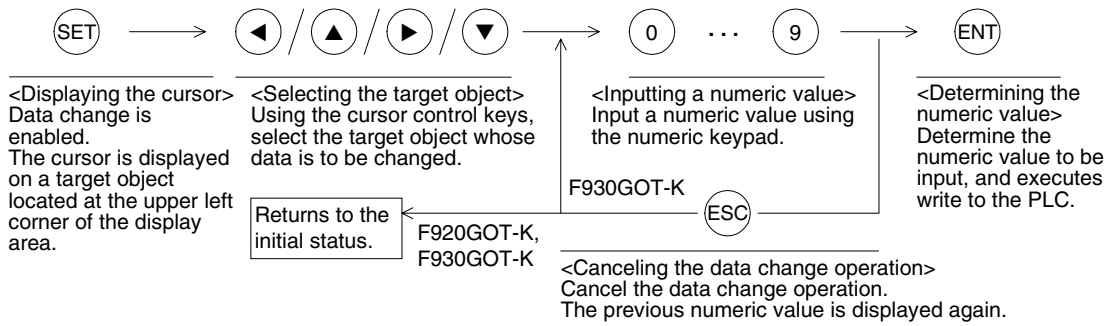
7.3 Handling of the numeric keypad, cursor control keys, [SET] key, [DEV] key, [ESC] key and [ENT] key

The numeric keypad, cursor control keys, [SET] key, [ESC] key and [ENT] key allow to change values of Numeric Input and ASCII Input (0 to 9).
(The [DEV] key is not available in the data input operation.)

Key functions

Numeric keypad ([0] to [9], [-], [.]): Input a numeric value in the data input operation.
Cursor control keys ([◀], [▶], [▲], [▼]):Move the cursor in the data input operation.
[SET] key:Displays the cursor in the data input operation.
[ESC] key:Cancels the input in the data input operation.
[ENT] key:Determines the input numeric value in the data input operation.

Data change procedure



1) When using the F930GOT-K
   - If any character other than "0"..."9", "-" and "." is required to be input in the ASCII input operation, use the key window. (Refer to Section 7.6.3.)
     The display and movement of the cursor in the data change operation vary depending on the setting in the screen creation software.
   - When the [ESC] key is pressed in the numeric value input operation, the contents set in [Screen Property]-[Auxiliary]-[Defined Key action] are executed.
2) When using the F920GOT-K
   - Only "0"..."9", "-" and "." can be input in the ASCII input operation.
   - When inputting a hexadecimal value, press the [.] key to change over the hexadecimal input mode and decimal input mode.
   - In the hexadecimal input mode (in which "HEX" is displayed in the right area of the screen), press the [1] key to input "A", the [2] key to input "B"... the [6] key to input "F".
   - When the [ESC] key is pressed in the numeric value input operation, the screen returns to the initial status (without the cursor).

7.4 Keypad operation on the system screen (only in the F930GOT-K)

Manipulate the system screens of the F930GOT-K using the touch keys in the display area.
On the following system screens, the keypad is available also.

Mode	System screen	Numeric keys	Cursor control keys	[SET] key	[DEV] key	[ENT] key	[ESC] key
HPP	DEVICE MONITOR	✓	✓	✓	✓	✓	✓
OTHER MODE	SET TIME SWITCH	✓	✓*1	×	×	✓	✓
	ENTRY CODE	✓	×	×	×	✓	✓
	OPENING SCREEN	✓	×	×	×	✓	✓
	SET CLOCK	✓	×	×	×	✓	✓
	BACKLIGHT	✓	×	×	×	✓	✓
Other system screens		Manipulated by touch switches.					

✓: Available ×: Unavailable

*1 The keypad is available only for moving the cursor among valid numeric input areas.

7.5 Acquiring the key pressing information

By manipulating the keypad, the key pressing status can be acquired as the ON/OFF information of bit devices of the PLC.

7.5.1 Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	×	F930GOT-K	✓(Ver4.90~)
F940GOT	×	F920GOT-K*1	✓(Ver1.20~)
F930GOT	×	Handy GOT	×

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

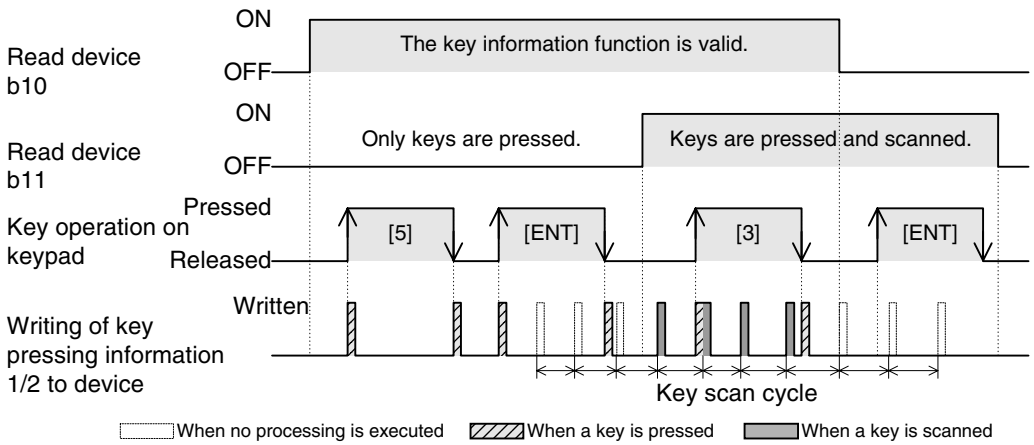
*1 Available only in the 24 V power type F920GOT.

7.5.2 Assigning the system information

1) Read device
Select whether or not the key pressing information function is valid.

b11	b10	Function
--	OFF	Does not use the key pressing information function. Does not write the key pressing information to the write devices (D+5 and D+6).
OFF	ON	Writes the key pressing information to devices of the PLC specified as the write devices (D+5 and D+6) every time the key pressing status is changed.
ON	ON	[Only in the F920GOT-K] ON : Writes information to the write devices D□+5 and D□+6 when the key pad status is changed or when a scan processing is executed inside the GOT. OFF : Writes information to the write devices D□+5 and D□+6 when the key pad status is changed. [Only in the F930GOT-K] ON : Writes the information to the write devices D□+5 and D□+6 when the key pad status is changed and in a constant cycle (about 1 sec). OFF : Writes the information to the write devices D□+5 and D□+6 when the key pad status is changed.

Operation



2) Write device

While a key is pressed, a bit corresponding to the key of the write device (word device D+5 or D+6) set in the system information is ON. While a key is not pressed, a corresponding bit is OFF.

D+4: System signal 2

Bit	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Key																

Indicates that the cursor is displayed in the Alarm List Display or Alarm History Display.

Indicates that the backlight is ON.

For any bit other than b9 and b10, refer to Section 3.6.

D+5: Key pressing information 1

Bit	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Key	ENT	DEV	SET	ESC	•	-	9	8	7	6	5	4	3	2	1	0

F920GOT-K, F930GOT-K

D+6: Key pressing information 2

b15 is ON while the key pressing information function is valid.

Bit	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Key	ON	--	--	--	F8	F7	F6	F5	F4	F3	F2	F1	→	←	↓	↑

F920GOT-K

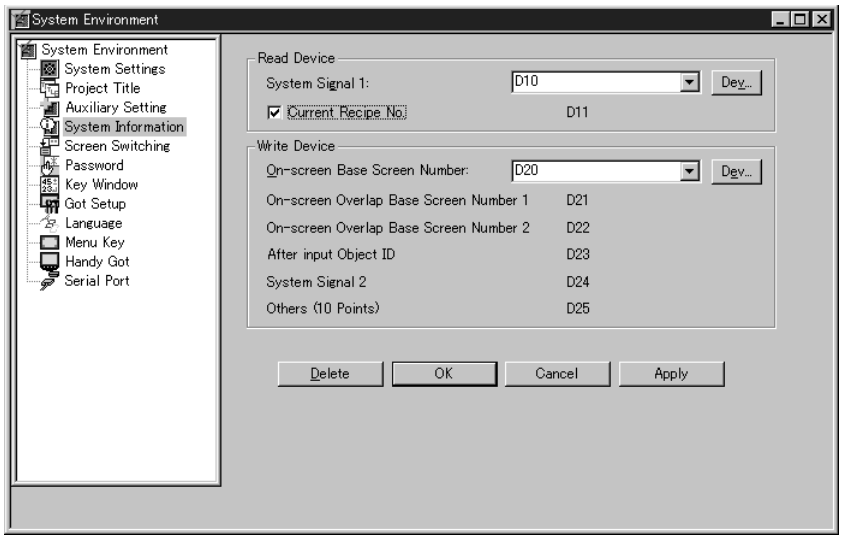
F930GOT-K

Always ON (for allowing to check connection of the GOT-F900 and communication errors in the sequence program)

7.5.3 Setting in the screen creation software (GT Designer2)

Operating procedure | Tool menu

Select [Common]-[System Environment].
Click "System Information" in the tree, and set the devices.



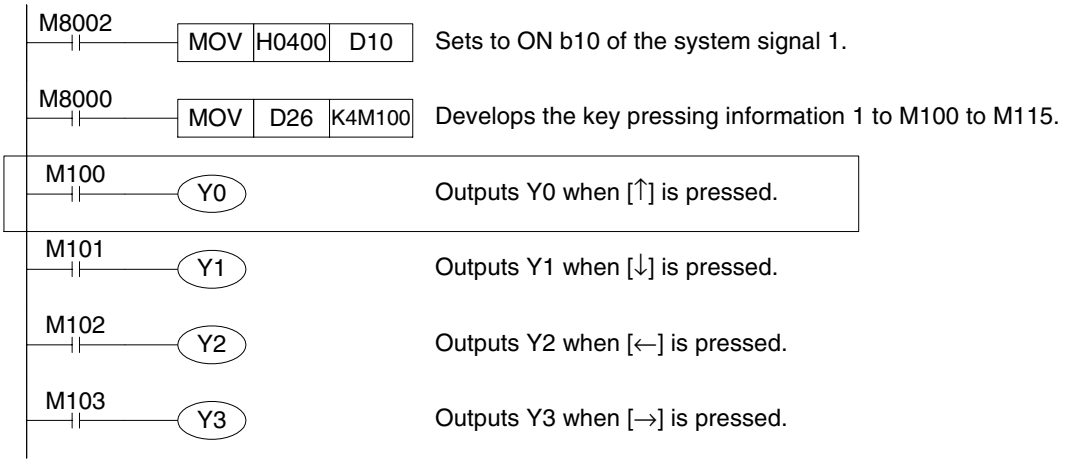
7.5.4 Use example

Program condition

Used PLC : FX1S, FX1N, FX2N or FX2NC Series

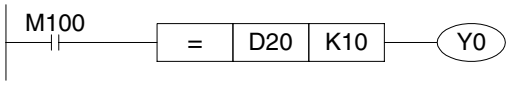
Used devices: D0.....Screen switching
D10...System information read device
D20...System information write device

1) Basic program

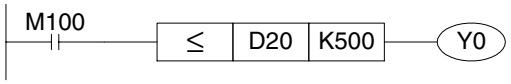


2) Application program
Basic program can be applied to various directions.
The example of changing the part of ☐ (program of [↑] key) in basic program to various conditions is explained.

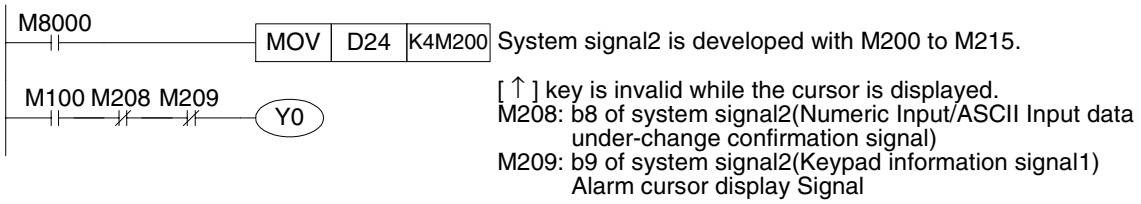
a) [↑] key is effectively done only while displaying a specific screen (Ex.:screen No. 10).



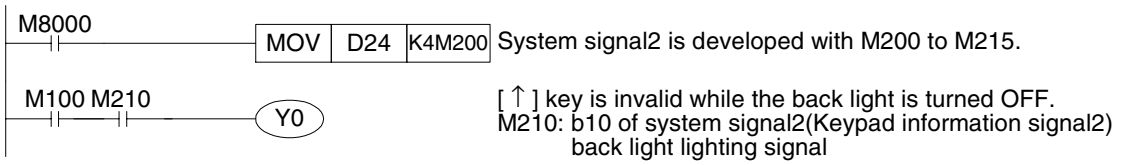
b) [↑] key is effectively done only while displaying the user screen (screen No. 1 to 500).



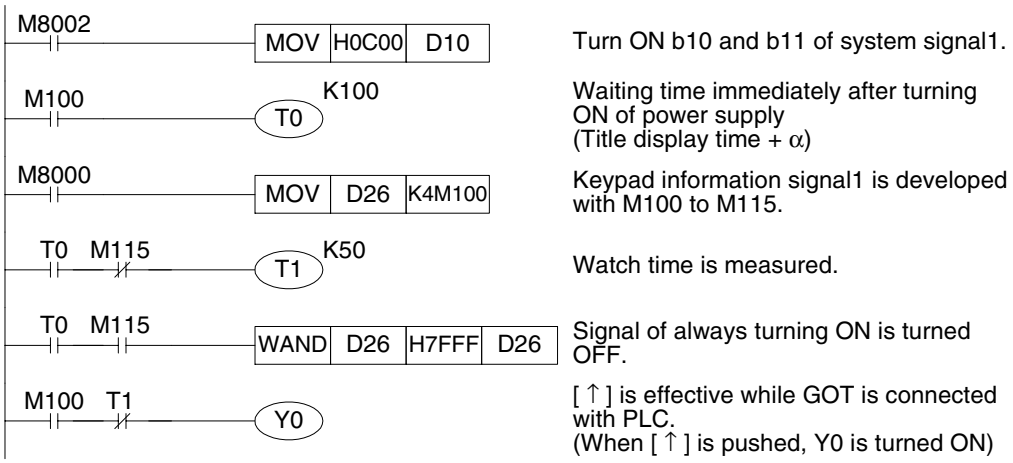
c) [↑] key is made effective only while non-displaying the cursor.
([↑] key is used properly for the cursor movement and other directions)



d) [↑] key is invalid while the backing light is turned OFF.



3) [↑] key is made effective while confirming the connection of F920GOT-K, F930GOT-K and PLC.
Lengthen the watch time more than the scanning time of GOT.(Ex.:five seconds.)



7.5.5 Cautions on use

Key information when two or more keys are pressed on the keypad at the same time

When two or more keys are pressed at the same time, all bits of the key pressing information 1 and the key pressing information 2 become OFF except the combinations shown below. However, b15 of the key pressing information 2 is always ON.

1) Combinations of keys allowing to be pressed at the same time

Keys	Key pressing information (write device D+5)
[↑] + [←]	8005H
[↑] + [→]	8009H
[↓] + [←]	8006H
[↓] + [→]	800AH

2) Backlight lighting condition in the F930GOT-K
In the OS version 4.90 or later, the backlight is set to ON when a key on the keypad is pressed.

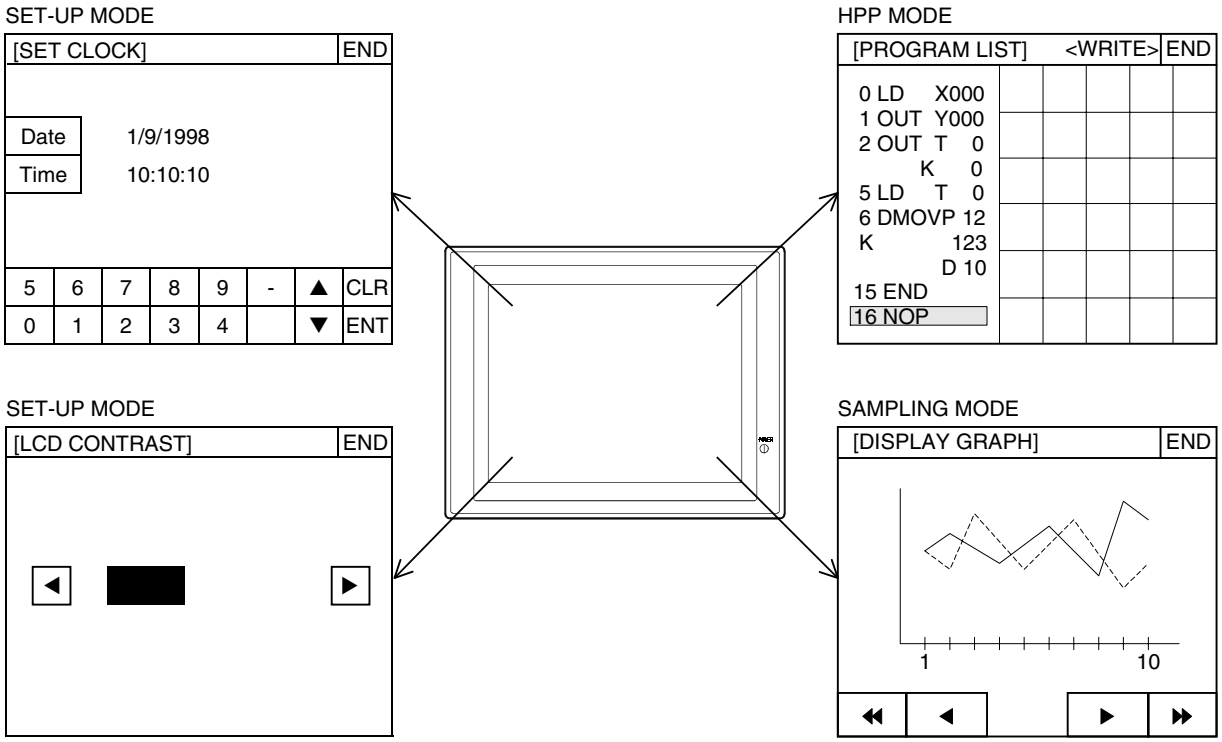
OS version	When a touch switch is touched	When a key on the keypad is pressed
Former than Ver 4.90	✓	×
Ver 4.90 or later	✓	✓

8. Functions of System Screens

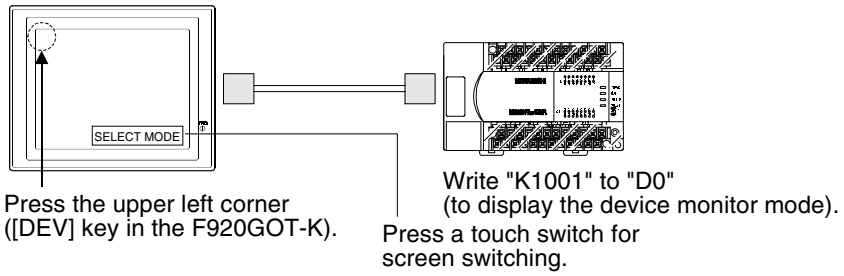
The GOT has built-in screens for various convenient functions.

8.1 Outline

The [SELECT MODE] screen of the GOT offers convenient screens which can be used as a part of user screens for setting the functions and adjusting the GOT such as "SET-UP MODE", "HPP MODE", "ALARM MODE" and "TEST MODE".



8.1.1 How to read each system screen



1) Using built-in functions of the GOT
   Press the upper left corner (factory setting) of the GOT screen to read the "SELECT MODE", then select and display a system screen. (Press the [DEV] key in the F920GOT-K.)
2) When manipulating the user screen
   Press a touch switch on the user screen to switch to a system screen having a specified screen No.
3) When displaying a system screen from the PLC
   Write data to a device for screen switching from the PLC using a program to display a system screen.

8.1.2 System screen list and screen No.

When displaying the system screen by switching from the user screen, specify the screen No. shown below to the switching destination in the screen switching setting or to the device for screen switching.

✓: There is a screen --: Screen none

Screen No.	Item on SELECT MODE	System screen name (function name) [ ] F920GOT-K display		F920GOT-K	F930GOT F930GOT-K	F940GOT F940WGOT Handy GOT	Reference chapter
1001	HPP MODE	DEVICE MONITOR		✓	✓	✓	9
1002		ACTIVE STATE MONITOR		--	✓	✓	
1003		PLC DIAGNOSIS		--	✓	✓	
1004	SAMPLING MODE	SET CONDITION		--	--	✓	10
1005		DISPLAY LIST		--	--	✓	
1006		DISPLAY GRAPH		--	--	✓	
1007		CLEAR DATA		--	--	✓	
1008	ALARM MODE	DISPLAY STATUS		--	--	✓	11
1009		ALARM HISTORY		--	--	✓	
1010		ALARM FREQUENCY		--	--	✓	
1011		CLEAR HISTORY		--	--	✓	
1012	TEST MODE	DATA BANK		--	--	✓	12
1013	OTHER MODE	SET-UP MODE	SET CLOCK	✓	✓	✓	8
1014			SET BACKLIGHT	✓	✓	✓	13
1015		SET TIME SWITCH		✓	✓	✓	8
1016		ENTRY CODE		✓	✓	✓	13
1017		PRINT OUT	SAMPLING DATA	--	--	✓	
1018			ALARM HISTORY	--	✓	✓	
1019		SET-UP MODE	BUZZER	✓	✓	✓	8
1020			SERIAL PORT	✓*1	✓	✓	
1021			LCD CONTRAST	✓	✓	✓	
1022	HPP MODE	PROGRAM LIST		--	--	✓	9
1023		PARAMETER		--	--	✓	
1024		LIST MONITOR		--	--	✓	
1025		BFM MONITOR		--	--	✓	
1026	TEST MODE	USER SCREEN		✓	✓	✓	12
1027	OTHER MODE	SET-UP MODE	LANGUAGE	✓	✓	✓	8
1028			PLC TYPE	✓	✓	✓	
1029			OPENING SCREEN	✓	✓	✓	
1030			MAIN MENU CALL	✓	✓	✓	
1031	--	Reserved by manufacturer		--	--	--	--
1032	--			--	--	--	--

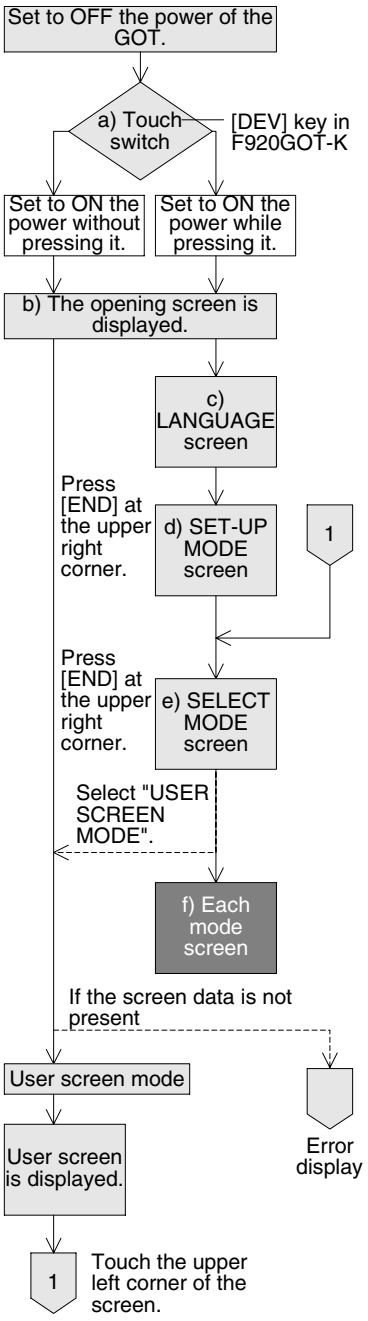
Screen No.	Item on SELECT MODE	System screen name (function name) [ ] F920GOT-K display		F920GOT-K	F930GOT F930GOT-K	F940GOT F940WGOT Handy GOT	Reference chapter
--	OTHER MODE	SET-UP MODE	CLEAR USER DATA*2	✓	✓	✓	8
--			AUXILIARY SET-TING*2	--	✓	✓	
--		DATA TRANSFER*2		✓	✓	✓	13
--	TEST MODE	COMMUNICATION MONITOR*2		--	--	✓	12

*1 Only the F920GOT-K (24V type)

*2 Screen switching from user screen by specifying the screen No. is disabled.

8.2 System screen reading procedure

This section explains the startup procedure for the F940GOT to turn on the power and select each mode.



a) While pressing and holding the upper left corner (which functions as a touch switch) of the GOT screen, set to ON the power to display the LANGUAGE screen.
(In the F920GOT-K, set to ON the power while pressing and holding the [DEV] key.)

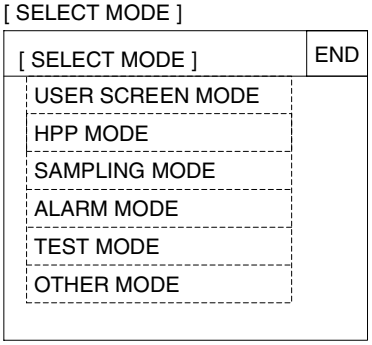
b) The opening screen indicating the model name, version, etc. is displayed for the period of time set in "OPENING SCREEN" in "SET-UP MODE".

c) On the LANGUAGE screen, the system screen language (Japanese or English) and the font for user screen mode) can be selected.
(It is recommended to set them using the screen creation software if the contents to be set are definite.)

d) On the SET-UP MODE screen, the mode, connected PLC type, etc. can be set.
However, it is recommended to set them using the screen creation software if the contents to be set are definite.

e) The SELECT MODE screen is displayed.
Each item displayed on the screen functions as a touch switch. When an item is pressed, the mode is selected. In the F920GOT-K, use the keypad.

[SELECT MODE]



This SELECT MODE screen can be called also by pressing a corner of the screen set in "MAIN MENU CALL KEY" in "SET-UP MODE".
In the F920GOT-K, press the [DEV] key to display the SELECT MODE screen.

f) A selected mode is started.
When not desiring to read the SELECT MODE screen from the user screen, select [OTHERS]-[MAIN MENU CALL KEY], then delete all "●" at the four corners of the screen.

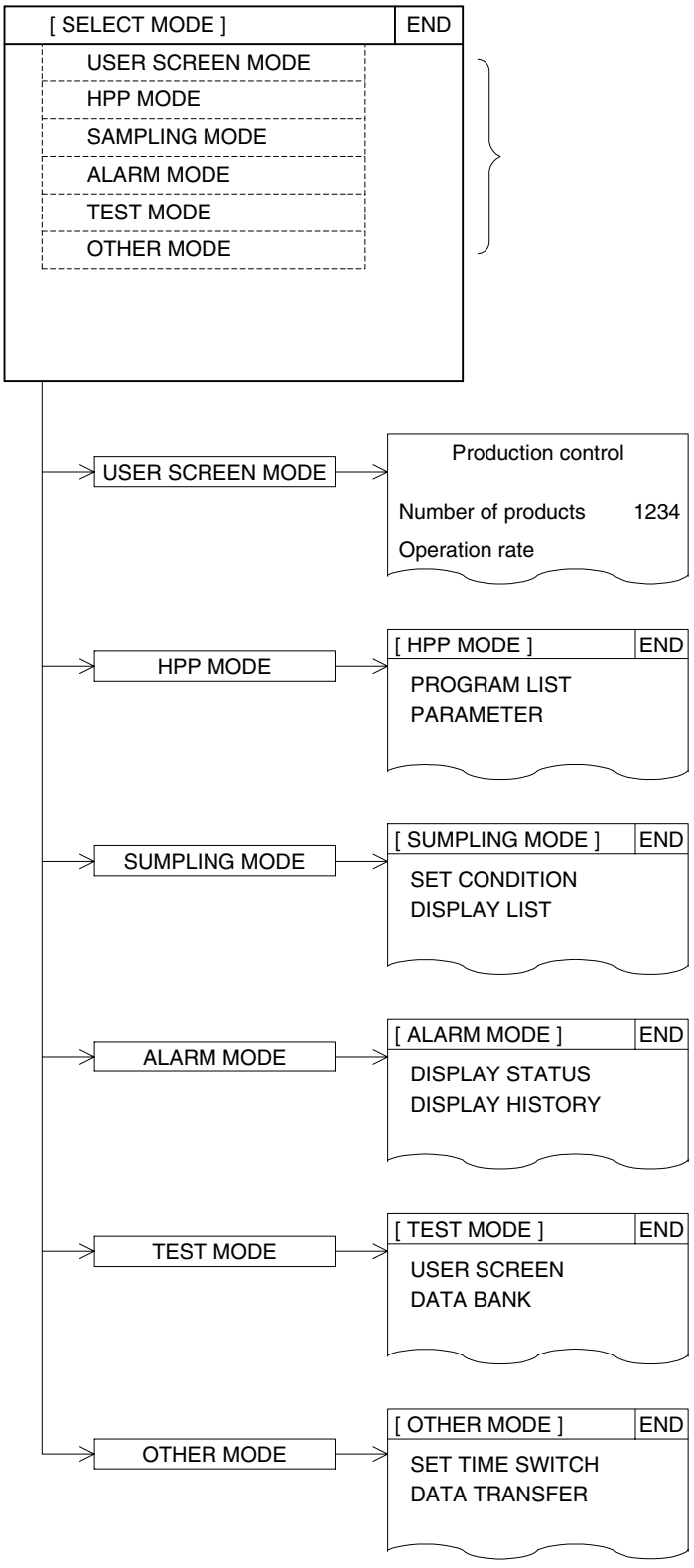
g) The user screen is displayed.
However, if the specified user screen is not present, an error message ("DISPLAY SCREEN IS NOT AVAILABLE. <No. OO*1>.") is displayed.

*1 "OO" indicates the screen No. causing the error.
Confirm the following items.

1) Whether the device No. set to an object used on the screen is available in the connected PLC
2) Whether the screen itself is present

8.3 SELECT MODE screen

When a touch switch located in a position specified in "MAIN MENU CALL KEY" in "SET-UP MODE" is pressed, the SELECT MODE screen shown in the figure below is displayed. The outline of each mode and the selecting procedure are as follows.



Use the keypad in the F920GOT-K. Press the [DEV] key to display the SELECT MODE screen.

1)User Screen Mode
(Refer to Section 4.)
The user screen is displayed. Characters including alphabets, numbers, Katakana and Kanji as well as simple graphics can be displayed.

2)HPP mode (Refer to Section 9.)
Reading/writing/monitoring in the list program as well as monitoring of bit devices and word devices of the PLC can be executed.
In addition, current values and set values can be changed.

3)Sampling mode (Refer to Section 10.)
The current value of specified data is acquired in a constant cycle or trigger condition.

4)Alarm mode (Refer to Section 11.)
Bit devices are monitored as alarm devices. When a bit device turns ON, a corresponding message is displayed.

5)Test mode (Refer to Section 12.)
The contents of user screens can be checked.
In addition, data files can be edited and debugged.
In the F940GOT and F940WGOT-TWD, the communication status can be displayed also.

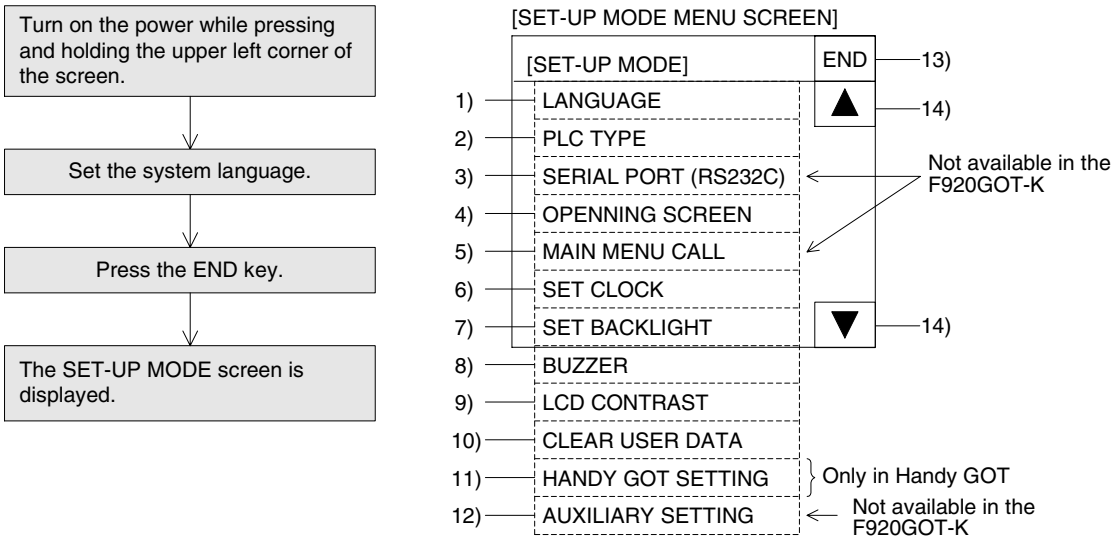
6)Other mode (Refer to Section 13.)
Various settings such as the time switch, printout, password and operation environment can be executed.

8.4 SET-UP MODE screen

On the SET-UP MODE screen, execute the initial settings to operate the GOT.
By using this function, the operation environment can be set in the GOT. All items except some hardware set items can be set also in the screen creation software (GT Designer2).
It is recommended to usually execute the settings in the screen creation software because the screen data and the GOT operation environment can be controlled totally. (Refer to Section 3.1.)

8.4.1 Outline

Set to ON the power of the GOT while pressing and holding the upper left corner of the screen or select "OTHER MODE"-"SET-UP MODE" from the SELECT MODE screen to display the SET-UP MODE screen.
However, if the password is registered in the security (screen protection) function, the operation environment can be set only when the password input by the operator is at higher level than the password set for the SET-UP MODE screen.



[ ] indicates a touch switch.
(In the F920GOT-K, use the keypad. <Use the [▲] and [▼] keys to move the cursor.>)

1) LANGUAGE*
   In "SYSTEM LANGUAGE", set the language such as Japanese and English displayed on the system screen.
   In "CHARACTER SET", set the language according to the language displayed on the user screen mode. However, if any language other than Japanese is selected, the system screen is fixed to English.
2) PLC TYPE*
   Set the connected PLC.
3) SERIAL PORT*
   Set this item when connecting a printer to the GOT or when communicating with a micro computer board.
4) OPENING SCREEN*
   Set the period of time in which the opening screen is displayed immediately after the power is set to ON.

5) MAIN MENU CALL KEY*
Set the positions of the touch switches which call the main menu from the User screen mode.

6) SET CLOCK
Set the time used for the time switch and time display.

7) SET BACKLIGHT*
Set the backlight OFF time.

8) BUZZER*
Set the buzzer sound issued when a key is pressed.

9) LCD CONTRAST
Set the LCD contrast. In the F940WGOT-TWD, adjust the brightness.

10)CLEAR USER DATA
This item deletes the user screen data.

11)SET HANDY GOT*
Set the operation of the grip switch and LEDs (only in the Handy GOT).

12)AUXILIARY SETTING*
Set whether or not the initial screen No. is written to the PLC.

13)END
This switch terminates the SET UP MODE, and displays the main menu (SELECT MODE screen).

14)Cursor control keys
Use these keys to move the cursor among items on the SET-UP MODE screen.

* These items can be set using the screen creation software (GT Designer2). (Refer to Chapter 3.)

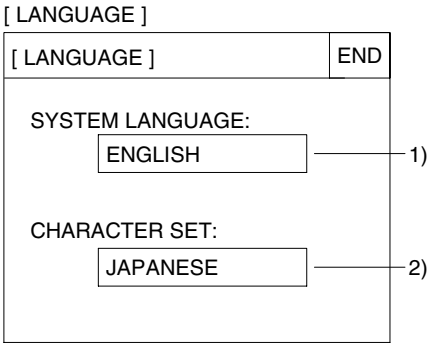
8.4.2 Cautions on use

1) When the screen data in the screen creation software is transferred after diversified settings on the SET-UP MODE screen of the GOT, the SET UP MODE executed in the screen creation software are valid.
   In such a case, execute the settings again in the GOT. Or let the contents set in the GOT be reflected on the settings in the screen creation software, then transfer the screen data again.
2) The contents of SET UP MODE executed in the GOT cannot be read to the screen creation software.
3) The SET UP MODE executed in the GOT are saved in the RAM. (Refer to Section 3.8.)
   (In the F920GOT-K, the settings are saved in the EEPROM.)

8.4.3 LANGUAGE screen - screen No. 1027

On this screen, set the language displayed on the system screen and user screen.

1) SYSTEM LANGUAGE (Initial value: ENGLISH)
   Set the language displayed on the system screen and error messages. Japanese and English are available. If any language other than Japanese is selected in "CHARACTER SET", only English is available here.
2) CHARACTER SET (Initial value: JAPANESE)
   Set the language displayed on the user screen. Japanese, Chinese (simplified), Chinese (traditional), Korean and Western European fonts are available. (Available languages are different in each model. And only one language can be set.)



[ ] on the screen functions as a touch switch, and changes the contents of selection when pressed. In the F920GOT-K, use the keypad.

- Use the [▲] and [▼] keys to move the cursor.
- Press the [▶] key to change the contents.
- Press the [ESC] key to finish the settings.

Selection	SYSTEM LANGUAGE	CHARACTER SET
JAPANESE	Japanese or English	Japanese
CHINESE(SIMPLIFIED)	English	Chinese (simplified)
CHINESE(TRADITIONAL)	English	Chinese (traditional)
KOREAN	English	Korean
WEST EUROPE *1	English	Italian, English, Dutch, Swedish, Spanish, Danish, German, Portuguese or French

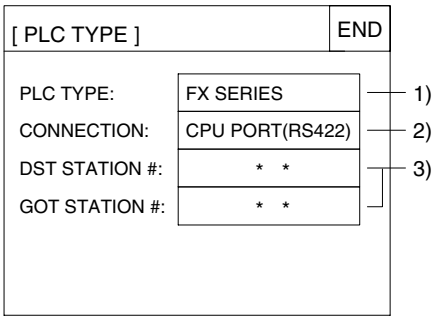
*1 This item is supported from Ver. 2.10 in the F930GOT, from Ver. 4.00 in the F940GOT and from the initial version in the F920GOT-K, F930GOT-K and F940WGOT.

8.4.4 PLC TYPE screen (for selecting the PLC type and connection port) - Screen No. 1028

On this screen, set the connected PLC type and various communication functions.
For available PLC types and connection methods, refer to Chapter 2. For the details of wiring and connection configuration, refer to the "GOT-F900 Series Hardware Manual [Connection]".

1) PLC TYPE (Initial value: FX SERIES)
   Select the PLC connected to the GOT.
2) CONNECTION (Initial value: CPU PORT (RS-422))
   Set the connection form of the PLC set in 1) above.
   CPU PORT:
   Directly connected to the program connector of the PLC (RS-422 or RS-232C).
   LINK CONNECTION:
   Connected to the link unit communication connector (RS-422 or RS-232C). In the F920GOT-K, only "CPU PORT" is displayed in "CONNECTION".

[PLC TYPE]



3) STATION #, COUNTERPART STATION # or GOT STATION # (Initial value: 0)
   (The displayed contents are different in each version of the GOT.)
   This set item is not provided in the 5V power type F920GOT-K.

[ ] on the screen functions as a touch switch, and changes the contents of selection when pressed. In the F920GOT-K, use the keypad.

- Use the [▲] and [▼] keys to move the cursor.
- Press the [▶] key to change the contents.
- Press the [ESC] key to finish the settings.

8.4.5 SERIAL PORT screen (for setting the micro computer connection and printer communication specifications) - Screen No. 1020

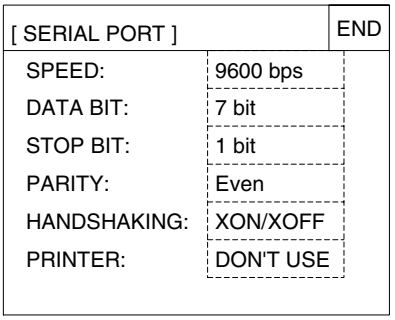
On this screen, set the general-purpose communication (micro computer) and the parameters for serial communication with the printer for printing the alarm and sampling data.
For the details of wiring and connection configuration, refer to the "GOT-F900 Series Hardware Manual [Connection]".

Make sure to set "PRINTER" to "USE" when connecting the printer.
Note that the two-port interface function is not valid while "USE" is selected.
This item is not provided in the 5V power type F920GOT-K.

[ ] on the screen functions as a touch switch, and changes the contents of selection when pressed.

The settings on this screen are provided for the printer and micro computer, and have nothing to do with the communication settings for the PLC, bar code reader and personal computer.

[SERIAL PORT]



Caution on use

The general-purpose communication equipment (micro computer) and printer cannot be used at the same time.
However, they can be used at the same time if the communication settings are equivalent between the general-purpose communication equipment (micro computer) and the printer.

8.4.6 OPENING SCREEN screen (for setting the period of time to display the opening screen) - Screen No. 1029

On this screen, set the period of time in which the opening screen indicating the model name, version, etc. is displayed immediately after the power is set to ON in the unit of second. (Initial value: 4 SEC)

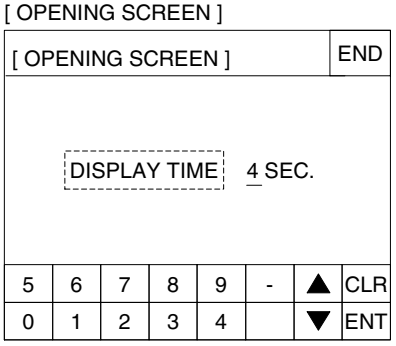
Input a numeric value using the ten keys provided at the bottom of the screen, then press [ENT].

* If "0" is set, the opening screen is not displayed. Instead, the user screen mode is displayed from the beginning.
It is recommended to set 1 second or more for the FX Series PLC, and 4 seconds or more for the A Series PLC.

In the F920GOT-K, use the keypad.

- Press the [SET] key to start changing.
- Use the [0] to [9] keys to input desired period of time.
- Press the [ENT] key to determine the input.
- Press the [ESC] key to finish the setting.

[OPENING SCREEN]



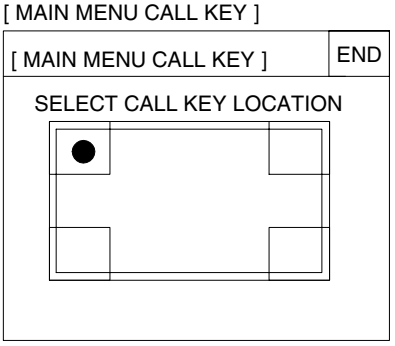
When the ☐ area ("DISPLAY TIME") is pressed, setting is enabled using the ten keys provided at the bottom of the screen.

8.4.7 MAIN MENU CALL KEY screen (for setting the menu call key positions) - Screen No. 1030

On this screen, set the keys to switch from the user screen mode) to the SELECT MODE screen. The key size is 2 × 2 mesh. (Initial value: Upper left corner)

Among the four corners of the screen, one or two corners can be selected.
If no corner is selected, only the user screen mode is available, and any other mode cannot be displayed. (In this case, in order to display the SELECT MODE screen, set to ON the power while pressing and holding the upper left corner of the screen.)
Selected corners are assigned as touch switches to call the SELECT MODE screen. If another touch switch is assigned to a corner which has been selected as the main menu call key, the main menu call function is invalid.

[MAIN MENU CALL KEY]



In the F920GOT-K, use the keypad.
In the F920GOT-K, when "MAIN MENU CALL KEY" is selected, "VALID" and "INVALID" are displayed. Select either one using the [▲] and [▼] keys, then press the [ESC] key to finish the setting.

VALID: Switches the display to the SELECT MODE screen when the [DEV] key is pressed while the user screen is displayed.

INVALID: Disables switching from the user screen to the SELECT MODE screen.
In order to display the SELECT MODE screen, set to ON the power while pressing and holding the [DEV] key.

8.4.8 SET CLOCK screen (for setting the clock built in the GOT) - Screen No. 1013

On this screen, set the time of the clock data (built in the GOT) used in the time switch, sampling mode and alarm mode.

Select "DATE" or "TIME" to make the ten keys provided at the bottom of the screen valid for inputs.
Press the [ENT] key to determine the input.

[SET CLOCK]

[SET CLOCK]							END
DATE	3 / 1 / 1999						
TIME	10: 10: 10						
5	6	7	8	9	-	▲	CLR
0	1	2	3	4		▼	ENT

In the F920GOT-K, use the keypad.

- Press the [SET] key to start changing.
- Use the [▲], [▼], [◀] and [▶] keys to move the cursor.
- Use the [0] to [9] keys to input the time.
- Press the [ENT] key to determine the time.
- Press the [ESC] key to finish the setting.

Caution on use of F920GOT-K

The F920GOT-K does not have the built-in clock.
On the SET CLOCK screen in the F920GOT-K, set the time for the clock data of the connected FXPLC.
If the connected FXPLC does not have the clock data, random numeric values are displayed in the numeric value areas, and cannot be changed.

8.4.9 SET BACKLIGHT screen (for setting the backlight OFF time) - Screen No. 1015

On this screen, set the backlight OFF time for the display screen. If a touch switch is not pressed or the user screen is not switched, the backlight turns OFF after the specified period of time. (Initial time: 10 MIN).

Press the [OFF TIME], set the OFF time in the range from 1 to 99 minutes using the ten keys provided at the bottom of the screen, then press the [ENT] key to determine the input.
In the F920GOT-K, use the keypad.

[SET BACKLIGHT]

[SET BACKLIGHT]							END
OFF TIME	10 MIN.						
5	6	7	8	9	-	▲	CLR
0	1	2	3	4		▼	ENT

- Press the [SET] key to start changing.
- Use the [0] to [9] keys to input the time.
- Press the [ENT] key to determine the time.
- Press the [ESC] key to finish the setting.

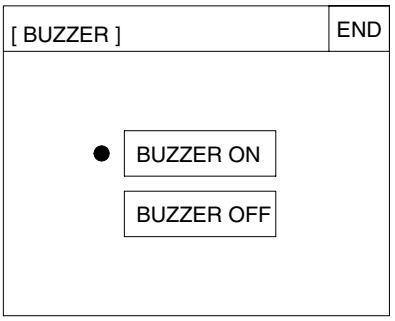
Only the setting on this screen is not enough to turn OFF the backlight.
In order to make valid the backlight OFF time, set to ON the bit specified in the system information. (Refer to Section 3.6.)

8.4.10 BUZZER screen (for turning ON/OFF the buzzer of the GOT) - Screen No. 1019

Set whether or not the buzzer is issued when a touch switch is pressed or when an error occurs. (Initial value: BUZZER ON)

Select "BUZZER ON" or "BUZZER OFF".
In the following GOT units, the buzzer sound ON/OFF status can be set by setting the key code (FFFE) to each touch switch.

[BUZZER]



Model	Availability (OS version)
F930GOT	✓(V4.50~)
F930GOT-K	✓
F940GOT	✓(V6.50~)
F940WGOT	✓(V1.50~)
F920GOT-K	×

✓: Setting is enabled. If the applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

In the F920GOT-K, use the keypad.

- Use the [▲] and [▼] keys to move the cursor.
- Press the [ESC] key to finish the setting.

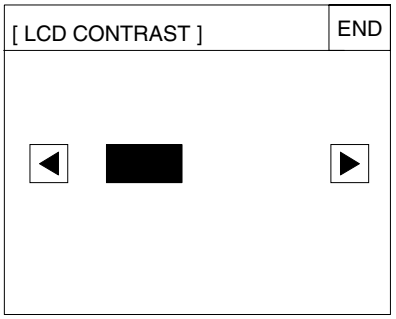
8.4.11 LCD CONTRAST screen (for adjusting the LCD contrast) - Screen No. 1021

On this screen, set the LCD contrast.

Press [◀] to make the LCD darker. Press [▶] to make the LCD brighter.
The contrast can be set in 15 steps. (Initial value: Medium)
In the F940WGOT, the brightness can be adjusted in four steps.
In the F920GOT-K, use the keypad (to set the contrast in 10 steps).

- Use the [◀] and [▶] keys to change the contrast.
- Press the [ESC] key to finish the setting.

[LCD CONTRAST]



8.4.12 CLEAR USER DATA screen (for clearing the user screen data)

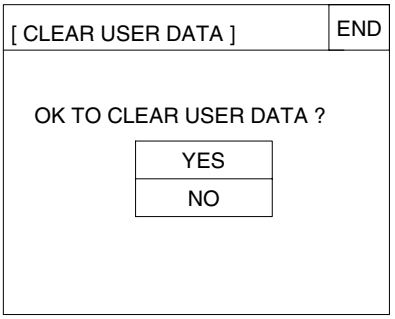
On this screen, clear the screen data stored in the GOT.

Select "YES" to clear the screen data. While the screen data is being cleared, the message "NOW CLEARING USER DATA" is displayed, and any key input is not accepted.
When clearing is finished, the user screen mode indicating "DATA IS NOT FOUND" is displayed.

In the F920GOT-K, use the keypad.

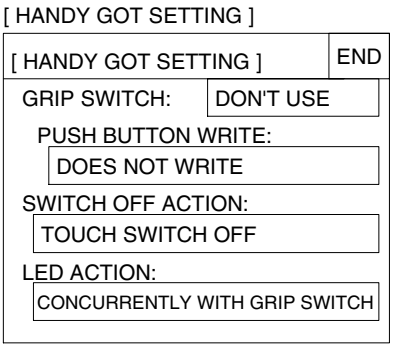
- Use the [◀] and [▶] keys to move the cursor.
- Press the [ENT] key to execute clearing.
- Press the [ESC] key to finish the setting.

[CLEAR USER DATA]



8.4.13 HANDY GOT screen (for setting various operations of switches)

On this screen, execute the settings related to the grip switch in the Handy GOT. (This screen is provided only in the Handy GOT.)
For the details of the settings of the Handy GOT, refer to the separate manual "GOT-F900 Series Hardware Manual [Connection]".



GRIP SWITCH

Select "USE" or "DON'T USE".
While the screen creation software not supporting the Handy GOT is used, the grip switch is always valid.

PUSH BOTTON WRITE

Select "WRITE" or "DOES NOT WRITE" to set whether or not the grip switch ON/OFF status is written to the system information.
When "GRIP SWITCH" is set to "USE", "PUSH BOTTON WRITE" is automatically set to "WRITE".

SWITCH OFF ACTION

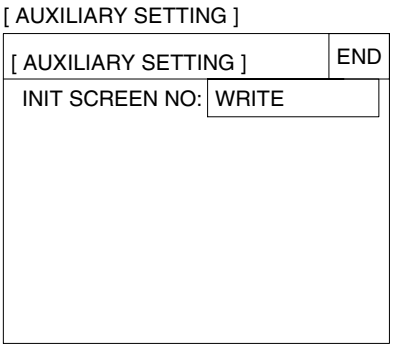
When "GRIP SWITCH" is set to "USE", select the timing to set to OFF the device which has been set to ON (momentary) by a touch switch.

LED ACTION

When "GRIP SWITCH" is set to "USE", select the condition in which the GRIP SW LED of the Handy GOT is lit.

8.4.14 AUXILIARY SETTING (for writing the screen No. when the power of the GOT is set to ON)

When the power of the GOT is set to ON, the screen No. 1 is displayed usually.
When "WRITE" is selected, "1" is written to the base screen switching device when the power is set to ON.
If specifying the screen to be displayed using a program in the PLC when the PLC is switched from the STOP to RUN status, select "DOES NOT WRITE".
This screen is not provided in the F920GOT-K.



MEMO

9. HPP Mode

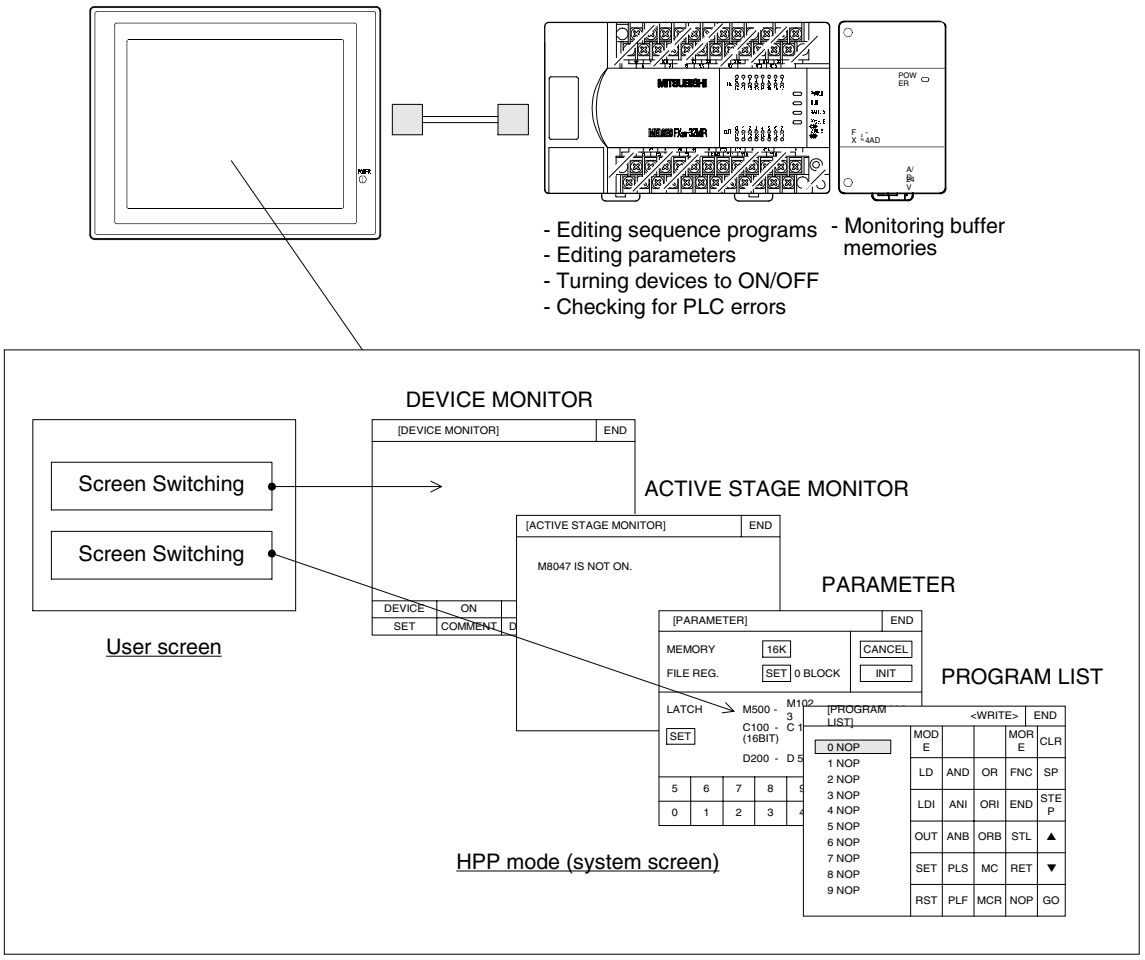
This chapter explains the HPP mode built in the GOT.

- Do not change a program in the PLC from two or more peripheral equipment (such as programming tool and GOT) at the same time.
  If a program is changed from two or more equipment at the same time, the program may be destroyed or malfunction.

- Thoroughly read the manual and sufficiently confirm the safety before changing the data or setting bit devices to ON or OFF.
  Erroneous operation may damage the machine and cause accidents.
- While two or more peripheral equipment (such as programming tool and GOT) are used, change a program in the PLC from only one peripheral equipment.
  And after changing a program from one peripheral equipment, display or read the program again in other peripheral equipment.
  If a program in the PLC is changed carelessly from two or more peripheral equipment, the contents of the program may become inconsistent among connected peripheral equipment.
  And if a program or the set value of a timer or counter is changed, the PLC may execute unexpected operation.

9.1 Outline

From the GOT to the connected PLC, sequence programs (list format) can be edited, devices can be monitored, and set values and current values can be changed.



9.1.1 Applicable GOT and OS version

The table below shows the GOT units and OS versions supporting each function in the HPP mode.

✓: Setting is enabled. ×: Setting is disabled.

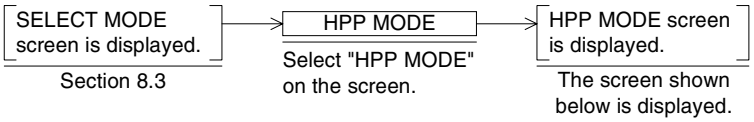
Model name	PROGRAM LIST	PARAMETER	DEVICE MONITOR	LIST MONITOR	ACTIVE STATE MONITOR	BFM MONITOR	PLC DIAGNOSIS
F940WGOT	✓	✓	✓	✓	✓	✓	✓
F940GOT	✓	✓	✓	✓	✓	✓	✓
F930GOT	×	×	✓	×	✓	×	✓
F930GOT-K	×	×	✓	×	✓	×	✓
F920GOT-K	×	×	✓	×	×	×	×
Handy GOT	✓	✓	✓	✓	✓	✓	✓

The OS version should be Ver. 4.00 or later when connecting the F940GOT or Handy GOT to the FX_{1S} or FX_{1N} Series PLC, and executing "PROGRAM LIST" or "LIST MONITOR" in the HPP mode.

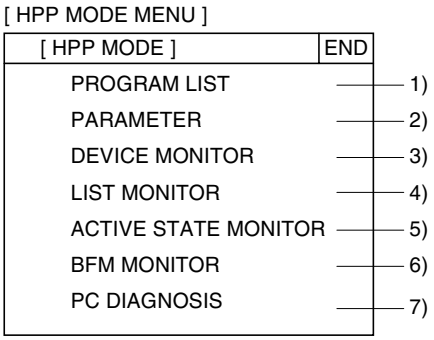
9.2 HPP mode menu

The operation to switch to the HPP mode and each function in the HPP mode are as shown below.

Basic operations



The following functions except 3) are valid only when the FX Series PLC is connected.

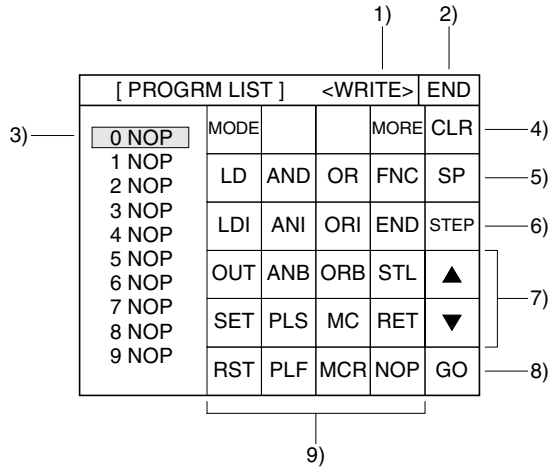


	Function name	Function	Applicable model (connection destination)	Reference section
1)	PROGRAM LIST	Allows to edit sequence programs inside the FX Series PLC in the instruction list format.	FX Series PLC	9.3
2)	PARAMETER	Allows to edit parameters inside the FX Series PLC.	FX Series PLC	9.4
3)	DEVICE MONITOR	Monitors the ON/OFF status, set value and current value of arbitrary device of the connected PLC. Allows to set devices forcibly to ON or OFF and change set values and current values.	Any PLC	9.5
4)	LIST MONITOR	Displays sequence programs inside the FX Series PLC and the ON/OFF status of each instruction. (Current values of word devices cannot be displayed.)	FX Series PLC	9.6
5)	ACTIVE STATE MONITOR	Displays the state Nos. in the ON status among states (S) inside the FX Series PLC.	FX Series PLC	9.7
6)	BFM MONITOR	Displays and allows to change the contents of the buffer memory (BFM) in a special block connected to the FX2N or FX2NC Series PLC.	FX Series PLC	9.8
7)	PLC DIAGNOSIS	Display the error information inside the FX Series PLC.	FX Series PLC	9.9

9.3 PROGRAM LIST screen (for changing the FX program list) - Screen No. 1022

When the GOT is connected to the FX Series PLC, programs of the PLC can be edited (read, written, inserted, deleted, etc.) in the instruction list program format.

9.3.1 Outline of keyboard operations



1) Function display
   Indicates a selected function among "READ", "WRITE", "INSERT" and "DELETE".
   Press the [MODE] key to switch the function.
   - READ: Allows to read a device according to the step No. or instruction word.
   - WRITE: Allows to write a program. (Write is disabled while the PLC is running.)
   - INSERT: Allows to insert a program.
   - DELETE: Allows to delete a program in the unit of instruction.

2) [END] key
   Finishes "PROGRAM LIST", and returns to the HPP MODE screen.

3) Bar
   Indicates the position (line) to be edited.

4) [CLR] key
   Cancels the key inputs executed so far. This key does not delete instructions.

5) [SP] key
   Inputs space while the set value of a timer or counter or application instruction is written.

6) [STEP] key
   Displays the list from a specified step No. when the step No. is input.

7) Cursor control keys
   Move the bar 3) up and down to switch the line to be edited.

8) [GO] key
   Determines the key operation.

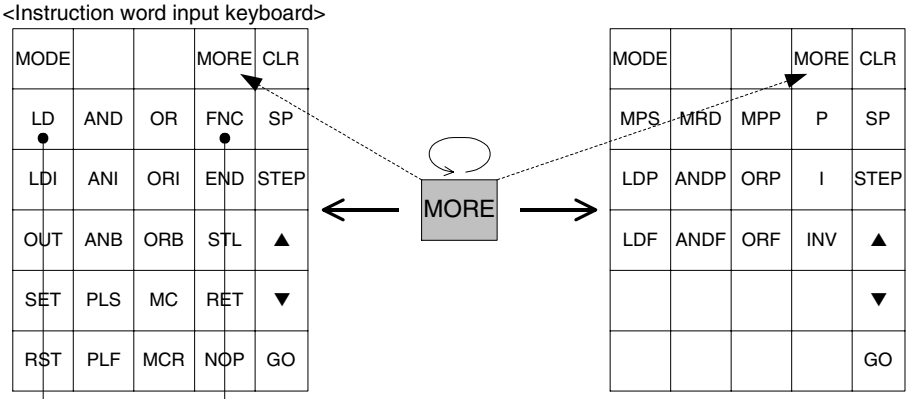
9) Instruction/device input keyboard
   Switches the keyboard among sequence instruction input keyboards and device name input keyboards every time the [MORE] key is pressed or an instruction word is input.

9.3.2 Instruction/device input keyboard list

Every time the [MORE] key is pressed, the instruction words are switched.

When the MORE key is pressed, instruction words are changed.

<Instruction word input keyboard>



When an instruction word is entered, the device input keyboard is automatically displayed.
The keyboard type is selected as shown below in accordance with the entered instruction word.

<Device input keyboard 1>

MODE				CLR
X	M	V	Z	SP
Y	S	K	H	STEP
T	C	P	I	▲
D				▼
				GO

<Device input keyboard 2>

MODE				CLR
		V	Z	SP
				STEP
8	9			▲
4	5	6	7	▼
0	1	2	3	GO

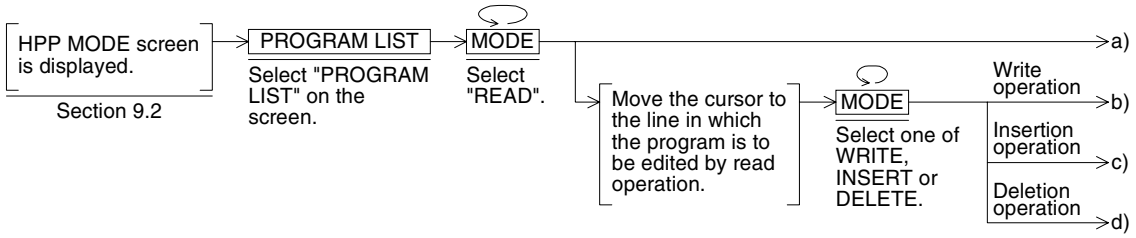
<Application instruction input keyboard 1>

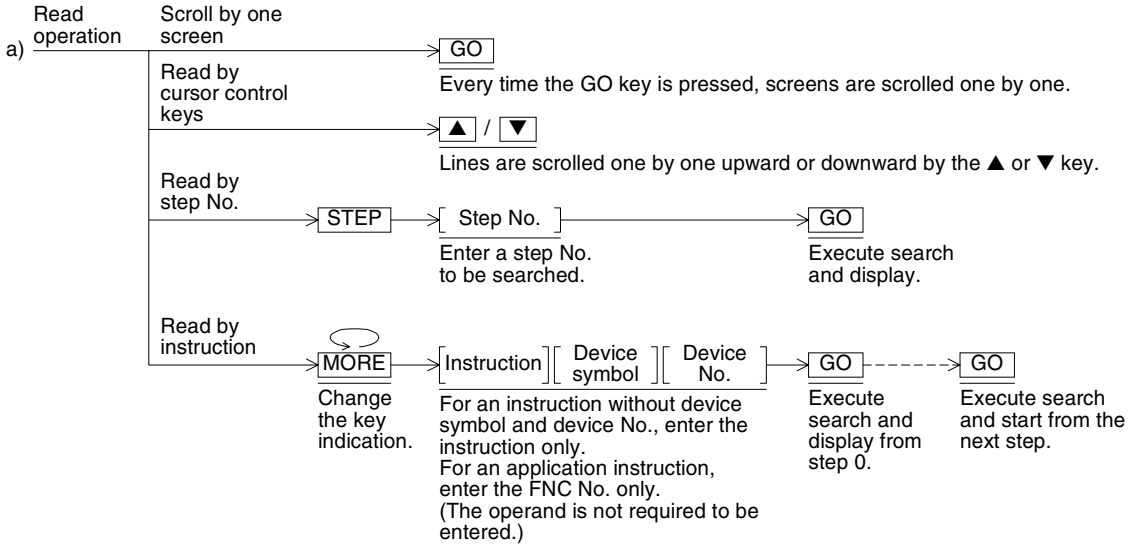
MODE				CLR
D	P			SP
				STEP
8	9			▲
4	5	6	7	▼
0	1	2	3	GO

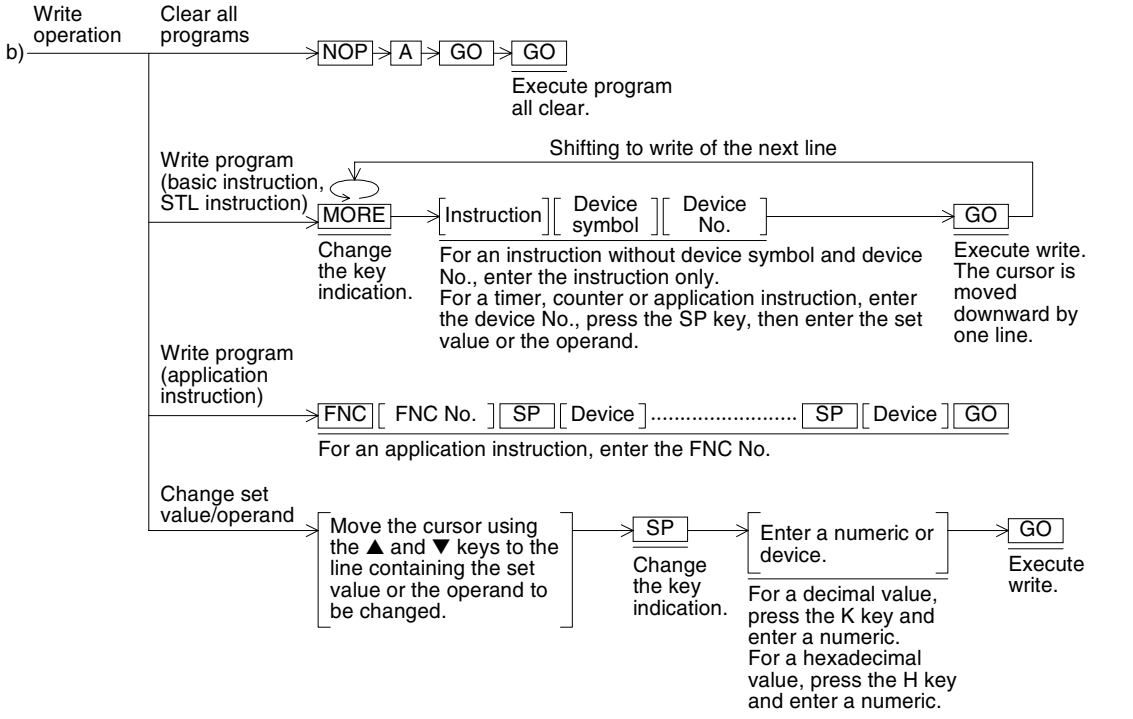
<Application instruction input keyboard 2>

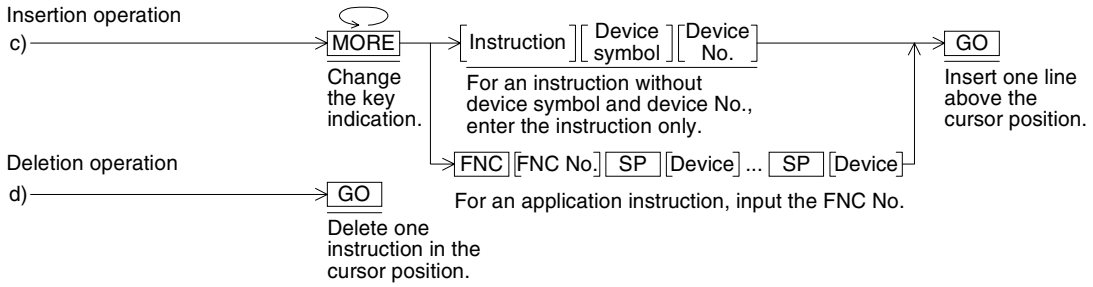
MODE				CLR
X	M	V	Z	SP
Y	S	K	H	STEP
T	C	P	I	▲
D				▼
				GO

Basic operations









9.3.3 Cautions on use

1) Applicable PLC
   The PROGRAM LIST function is available only when the GOT is connected to the FX Series PLC.
2) Cancel and determination during input
   While an instruction, device symbol or device No. is input, the input operation can be canceled by pressing the [CLR] key if the [GO] key has not been pressed yet. An instruction determined in the write or insertion operation (by pressing the [GO] key) can be modified (overwritten) by writing the program.
3) Inputting an application instruction
   An application instruction can be input by inputting the FNC No.
4) Restriction while the PLC is running
   While the FX Series PLC is running, only the read operation is valid.
   Stop the PLC before starting to write, insert or delete a program.
5) Types of memory built in the PLC
   Programs can be edited only when the memory built in the PLC is RAM or EEPROM (whose write-protect switch is OFF).

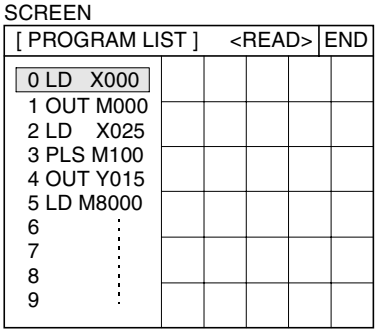
9.3.4 Examples of list program operations

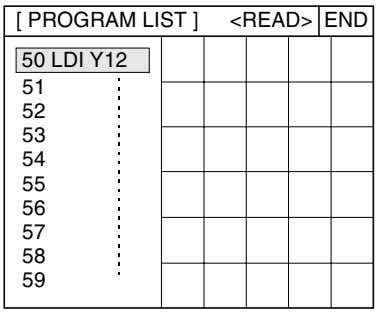
Operation example	MODE	Contents of operation
1	READ	Reading by the step No. : Reading an instruction at the step No. 50
2	READ	Reading an instruction : Reading the OUT Y000 instruction
3	WRITE	All-clearing a program : All-clearing a program
4	WRITE	Writing a program : Writing an instruction to a program
5	INSERT	Inserting a program : Inserting the LD X001 instruction
6	DELETE	Deleting a program : Deleting the step No. 0

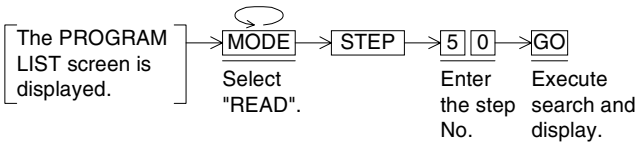
Operation example 1 (reading by the step No.)

Reading an instruction at the step No. 50

SCREEN







Important point

If an instruction occupying two or more steps is present in the input step No., the first line of the instruction is searched and displayed.

Operation example 2 (reading an instruction)

Reading the OUT Y000 instruction

SCREEN

[PROGRAM LIST]	<READ>	END
0 LD X000		
1 OUT M000		
2 LD X025		
3 PLS M100		
4 OUT Y015		
5 LD M8000		
6		
7		
8		
9		

Key operation

The PROGRAM LIST screen is displayed. → MODE → MORE →

Select "READ".

Change the key indication in accordance with a desired read instruction.

OUT Y 0 → GO ⇢

Enter an instruction, a device symbol and a device No.

Execute search from the step 0.

[PROGRAM LIST]	<READ>	END
20 OUT Y000		
21		
22		
23		
24		
25		
26		
27		
28		
29		

GO ⇢ GO →

When the GO key is pressed again after search and display are finished, search and display are started again from the next step.

If the entered instruction is not present, the message "NOT FOUND." is displayed.

Important point

This operation can be executed without regard to the memory type and RUN/STOP status of the PLC.

Operation example 3 (all-clearing a program)

All-clearing a program

SCREEN

[PROGRAM LIST]	<WRITE>	END
0 LD X000		
1 OUT M000		
2 LD X025		
3 PLS M100		
4 OUT Y015		
5 LD M8000		
6		
7		
8		
9		

Key operation

PROGRAM LIST screen is displayed. → MODE → MORE →

Select "WRITE".

Change the key indication to display the NOP key.

NOP A GO → GO

Designate the program all clear operation.

Execute program all clear.

[PROGRAM LIST]	<WRITE>	END
0 NOP		
1 NOP		
2 NOP		
3 NOP		
4 NOP		
5 NOP		
6 NOP		
7 NOP		
8 NOP		
9 NOP		

Important point

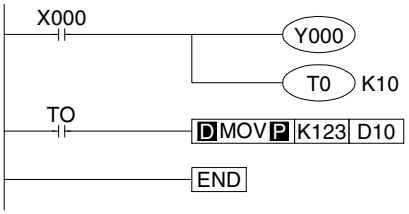
1) Set the PLC to the STOP status before executing the program all clear operation.
2) The program all clear operation is enabled only when the memory of the PLC is RAM or EEPROM (whose write-protect switch is OFF).

Operation example 4 (writing a program)

Writing an instruction to a program

Program example to be input

Circuit program



Program list

```
 0  LD     X000
 1  OUT    Y000
 2  OUT    T0
           K10
 5  LD     T0
 6  DMOVP
           K123
           D10
11  END
```

1)

SCREEN

[PROGRAM LIST]	<WRITE>	END
0 NOP		
1 NOP		
2 NOP		
3 NOP		
4 NOP		
5 NOP		
6 NOP		
7 NOP		
8 NOP		
9 NOP		

[PROGRAM LIST]	<WRITE>	END
0 LD X000		
1 OUT Y000		
2 OUT T 0		
K 0		
5 LD T 0		
6 DMOVP 12		
K 123		
D 10		
15 END		
16 NOP		

Key operation

PROGRAM LIST screen is displayed. → Display step No. 0 of the program. → MODE (Select "WRITE".) → MORE (Change the key indication to display the LD key.)

→ LD X 0 (Enter "LD X000".) → GO (Execute write.) → OUT Y 0 (Enter "OUT Y0000".) → GO (Execute write.)

→ OUT T 0 (Enter "OUT TO".) → SP K I 0 (Enter a set value.) → GO (Execute write.) → LD T 0 (Enter "LD TO".) → GO (Execute write.)

→ FNC D I 2 P (Enter an instruction (DMOVP)) → SP K I 2 3 SP D I 0 (Enter an operand.)

→ GO (Execute write.) → END (Write "END".) → GO (Execute write.)

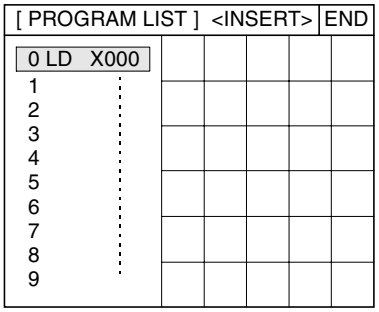
Important point

1) Set the PLC to the STOP status before executing the program write operation.
2) The program write operation is enabled only when the memory of the PLC is RAM or EEPROM (whose write-protect switch is OFF).
3) If there is an existing program in the PLC, it is overwritten.

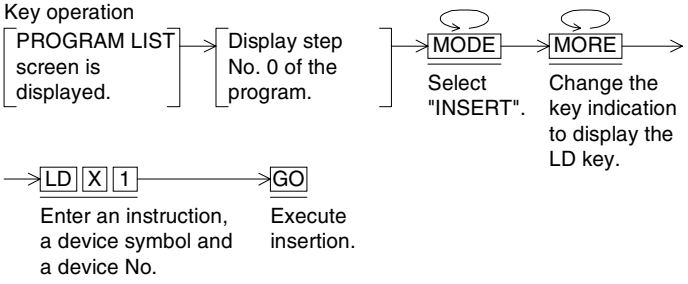
Operation example 5 (inserting a program)

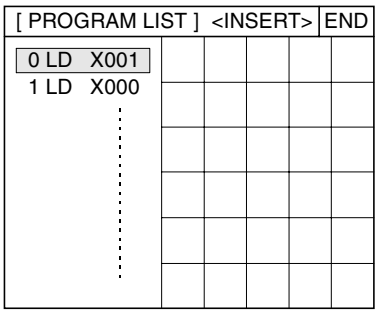
Inserting the LD X001 instruction

SCREEN



Key operation





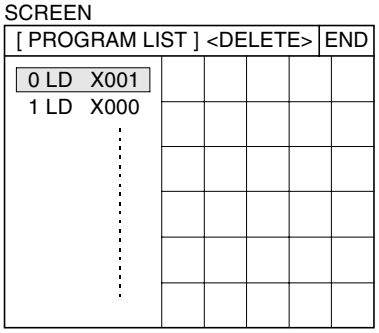
Important point

1) Set the PLC to the STOP status before executing the program insertion operation.
2) The program insertion operation is enabled only when the memory of the PLC is RAM or EEPROM (whose write-protect switch is OFF).
3) The instruction is inserted in the line above the cursor position.

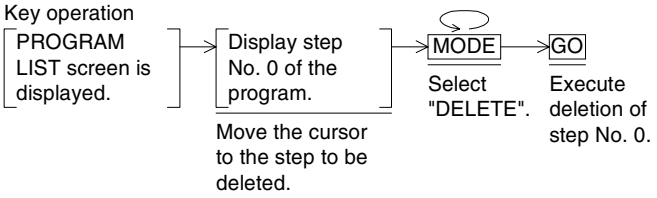
Operation example 6 (deleting a program)

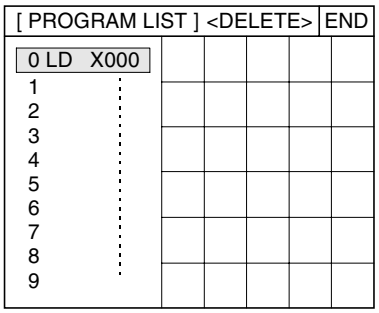
Deleting the step No. 0

SCREEN



Key operation





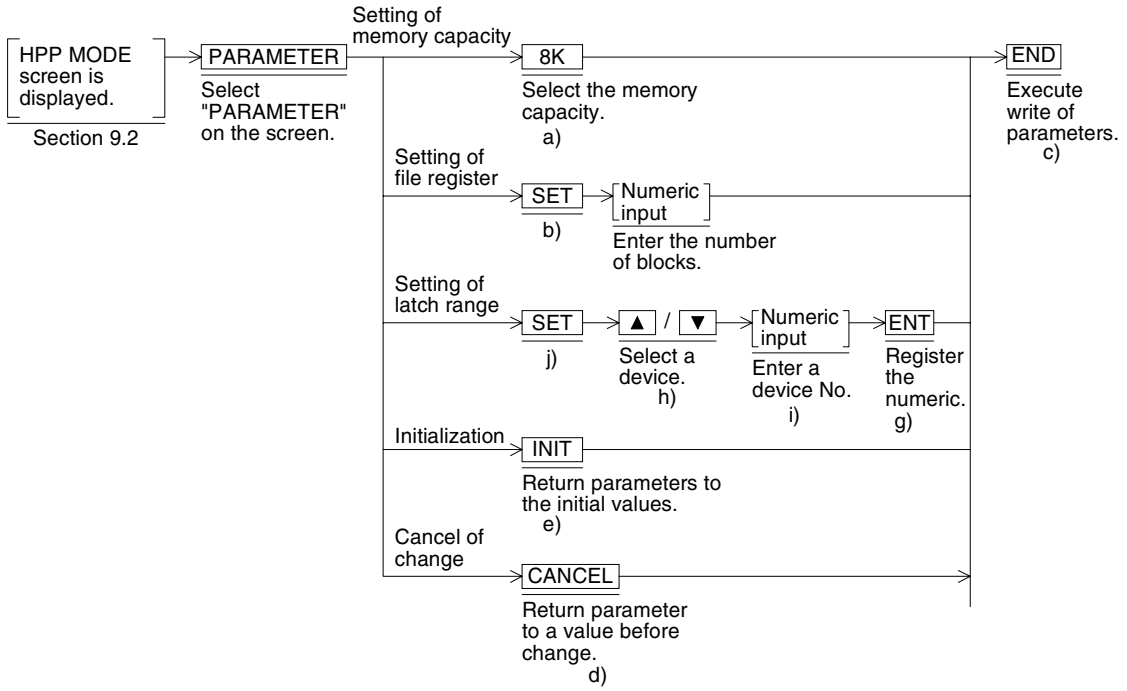
Important point

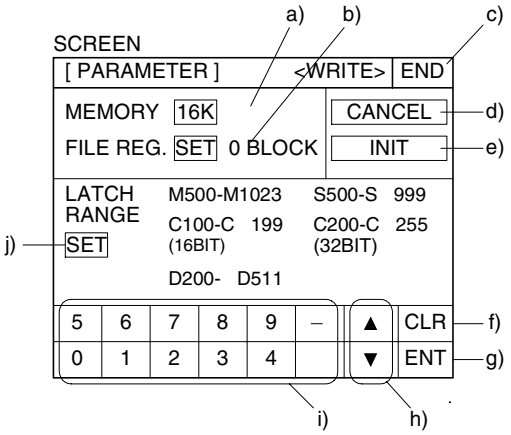
1) Set the PLC to the STOP status before executing the program deletion operation.
2) The program deletion operation is enabled only when the memory of the PLC is RAM or EEPROM (whose write-protect switch is OFF).
3) The instruction in the cursor position is deleted.

9.4 PARAMETER screen (for setting the parameters of the FX Series PLC) - Screen No. 1023

On this screen, the parameters of the connected PLC can be displayed and changed.

Basic operations





9.4.1 Cautions on use

1) Applicable PLC
The PARAMETER function is available only when the GOT is connected to the FX Series PLC.

2) Automatically recognizing the memory capacity
The memory capacity setting range varies depending on the memory of the connected PLC (automatic recognition).

3) Number of blocks of file registers
In the file register setting, the block quantity setting range varies depending on the selected memory capacity.
(One block uses 500 steps. 14 blocks maximum are available when the memory capacity is set to "16 K steps".)

4) Device latch range
In the latch range setting, the device No. setting range varies depending on the connected PLC model.

5) Reflecting the contents of settings
Change of each parameter is completed when the [END] key is pressed.

6) Condition enabling parameter changes
Parameters can be changed only while the PLC is in the STOP status.
Parameters can be changed only when the PLC memory is RAM or EEPROM (whose write-protect switch is OFF).

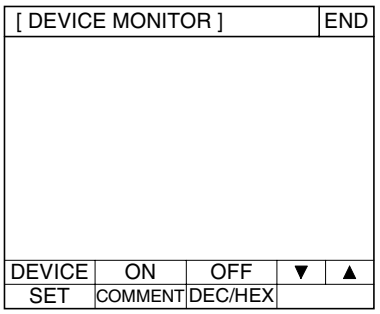
7) Cancel during input
After inputting a numeric value, press the [CLR] key to cancel the input numeric value.

9.5 DEVICE MONITOR screen (for monitoring devices of the PLC) - Screen No. 1001

On this screen, devices of the connected PLC can be monitored, the monitored devices can be forcibly set to ON or OFF, and their set values and current values can be changed.

Select "DEVICE MONITOR" on the HPP MODE screen to display the DEVICE MONITOR screen shown on the left.
(In the F920GOT-K, select the HPP mode to display the DEVICE MONITOR screen.)
Touch type function keys are provided as follows at the bottom area of the screen.

[DEVICE MONITOR]



- Use "DEVICE" to specify a device No. to be monitored.
- Use "ON/OFF" to forcibly set to ON/OFF a specified device.
- Use "SET" to change the current value/set value.
- Use "COMMENT" to switch the monitor indication.
  (This switch is not available in the GT Designer2.)

Reference: Comments input in [View]-[Device Comments] in the screen creation software FX-PCS-DU/WIN-E are displayed. Device comments in a sequence program are not displayed.

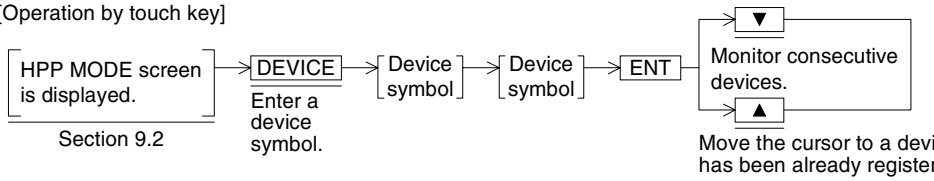
Operations in the F920GOT-K

Use the keypad.

- Press the [DEV] key to start to input a monitor device.
- Use the [◀] and [▶] keys to select a device No.
- Use the [0] to [9] keys to input a device No., current value and set value.
- Press the [ENT] key to determine a monitor device.
- Use the [▲] and [▼] keys to increase or decrease the displayed monitor device No.
- Press the [ESC] key to cancel the device input operation or terminate the monitor mode.
- While an arbitrary word device is displayed, press the [SET] key to start changing the current value/set value.
- While an arbitrary bit device, timer or counter is displayed, press the [0] key to forcibly set it to OFF, or press the [1] key to forcibly set it to ON.

Basic operations

[Operation by touch key]

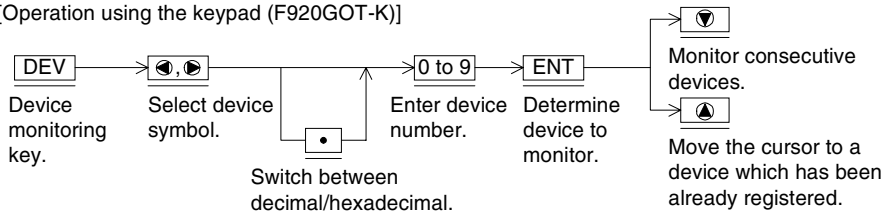


When the DEVICE key is pressed, the device symbol list is displayed.

X	Y	M	S	CLR
T	C	D16	D32	▲
Z	V			▼
				ENT

M 100				
C	D	E	F	CLR
8	9	A	B	▲
4	5	6	7	▼
0	1	2	3	ENT

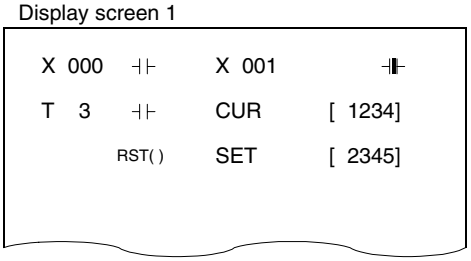
[Operation using the keypad (F920GOT-K)]

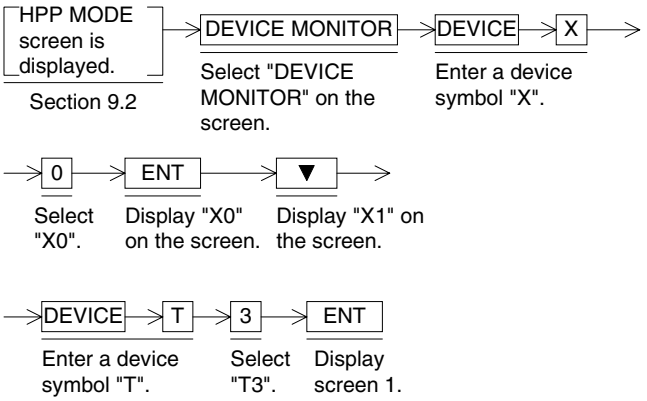


9.5.1 Monitoring devices

1) Operation example
Monitor the ON/OFF status of the inputs X000 and X001, and monitor the current value and set value of the timer T3.

Display screen 1



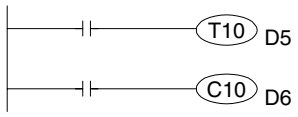


The ON/OFF status of each monitored device is indicated as follows.

ON status

OFF status

2) Cautions on use
- Monitoring a timer or counter by indirect specification
If a data register is used for the set value of a timer or counter as shown in the program below, when the timer or counter is monitored, the contents of the data register are monitored as the set value of the timer or counter.
And when the set value is changed (as described in the next page), the contents of the data register are overwritten.



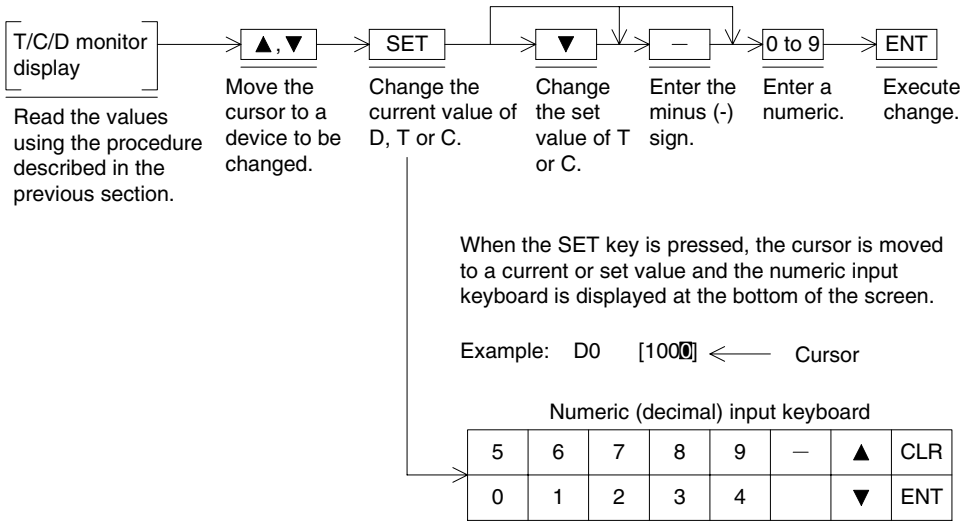
- When "****" is displayed on the HPP MODE screen
If a device No. not existing in the PLC is monitored, the numeric data is displayed as "****".
Solution: Select an existing device No. to be monitored on the screen.

9.5.2 Changing the set value and current value of timer, counter and data register

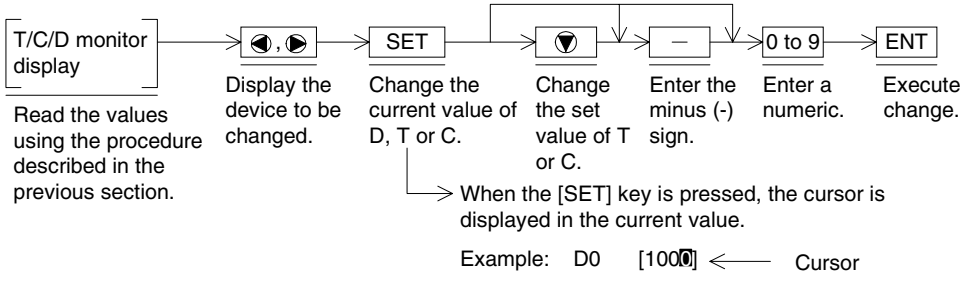
For word devices (T, C, D, V and Z) of the PLC, the set value and current value can be changed.

Basic operations

[Operation by touch key]

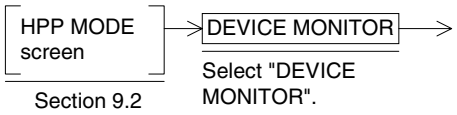


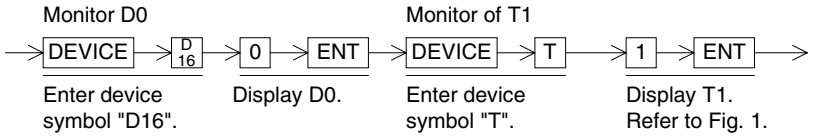
[Operation using the keypad (F920GOT-K)]

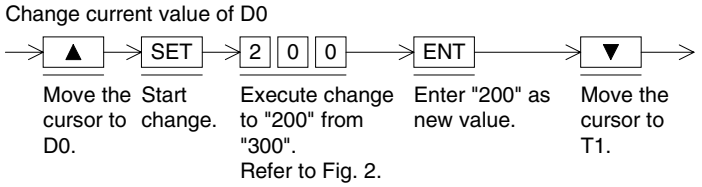


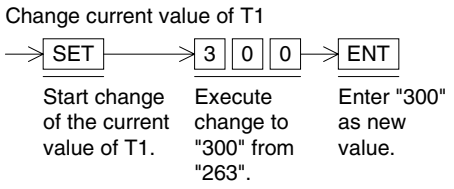
1) Operation example

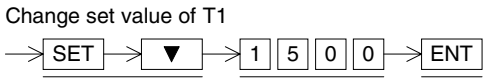
By using the touch switches, change the current value of the data register D0 from "300" to "200", the current value of the timer T1 from "263" to "300", and the set value of the timer T1 from "1000" to "1500" (except in the F920GOT-K).



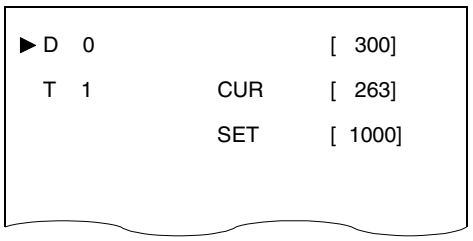




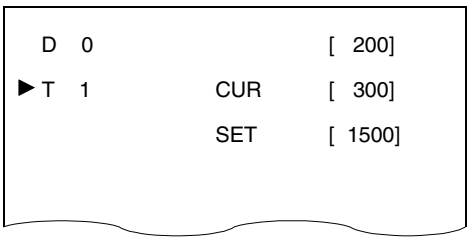




Before change Fig. 1



After change Fig. 2



2) Cautions on use

Changing the set value of timers and counters, and file registers

a) In the case of FX_{2N}/FX_{2NC} Series PLC

Timers, counters and file registers can be changed when the memory of the PLC is RAM.

Changes are disabled when the memory of the PLC is EPROM or EEPROM memory cassette.

b) In the case of FX_0/FX_{0S}/FX_{1S}/FX_{0N}/FX_{1N}/FX_{1NC} Series PLC

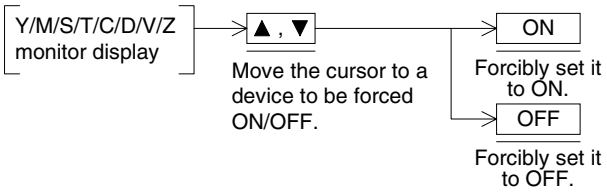
Timers, counters and file registers can be changed when the memory of the PLC is built-in EEPROM.

9.5.3 Setting forcibly to ON/OFF

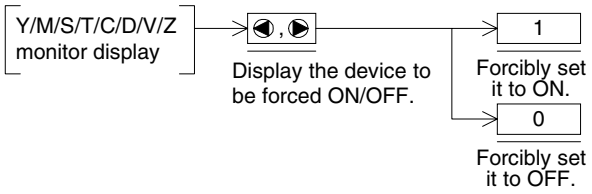
Bit devices (Y, M and S) and word devices (T and C) can be forcibly set to ON/OFF.
If a T, C, D, V or Z is forcibly set to OFF, its current value is reset to "0".

Basic operations

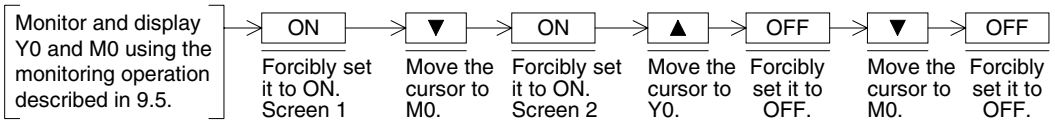
[Operation by touch key]



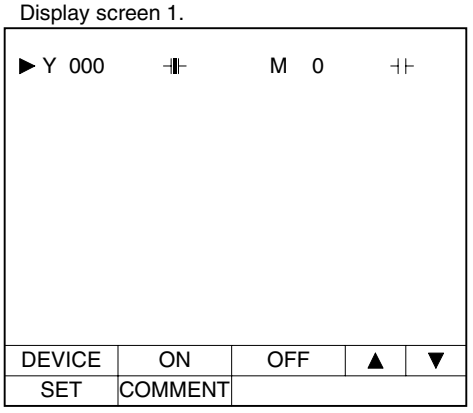
[Operation using the keypad (F920GOT-K-E)]



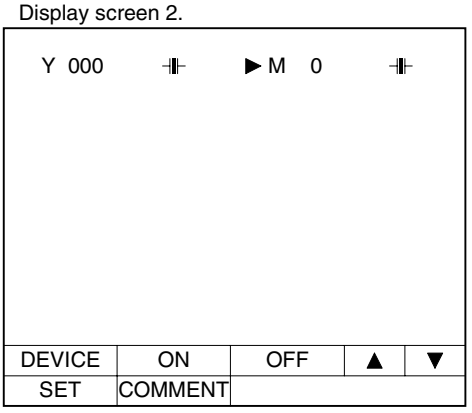
1) Operation example
By using the touch switches, forcibly set to ON/OFF the output Y0 and auxiliary relay M0 (except in the F920GOT-K).



Display screen 1.



Display screen 2.



2) Cautions on use

a) When connecting the SYSMAC C Series PLC manufactured by Omron

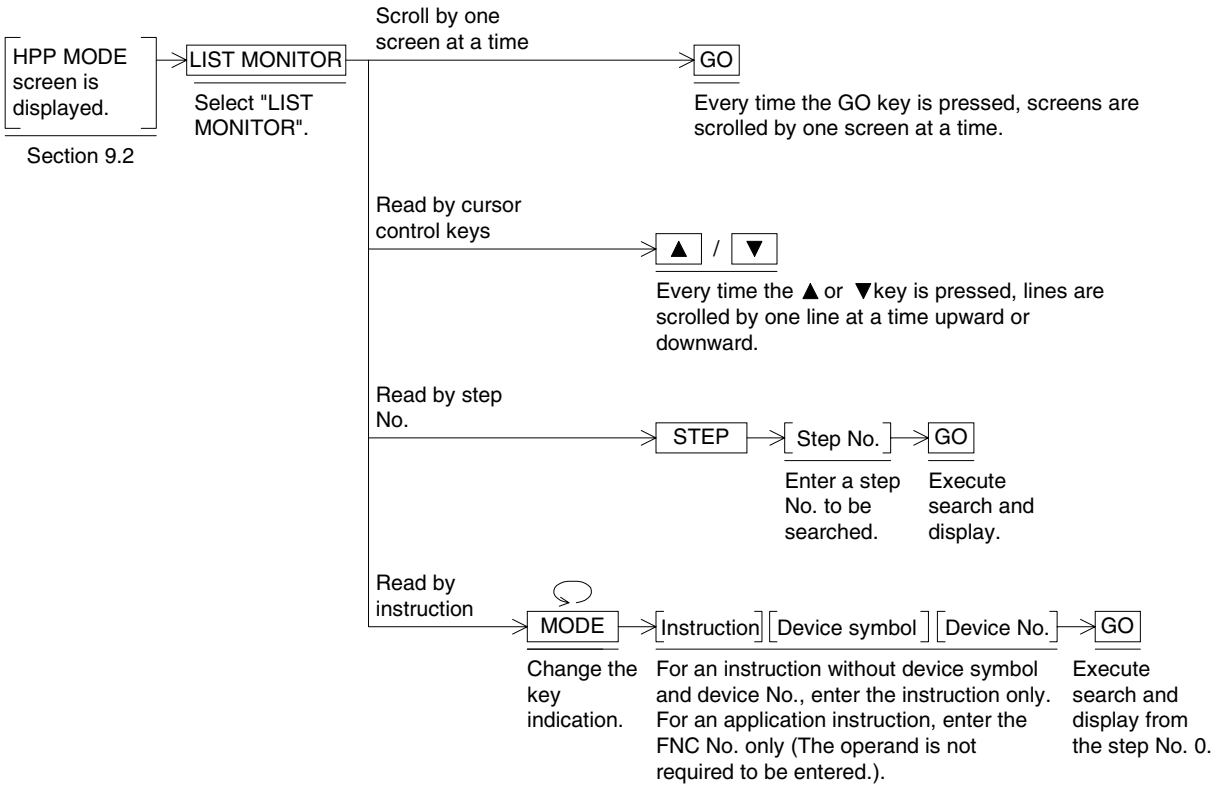
Because forcible setting/resetting from peripheral equipment of the SYSMAC C Series PLC sets a specified device to ON/OFF and locks the status, setting to ON/OFF by a sequence program is invalid. Note that the following operation is executed if the switch function in the user screen mode of the GOT or the forcible ON/OFF function in the HPP mode is used for such bit devices.

Model name	OS version	GOT whose OS version is former than those shown on left	GOT whose OS version is later than those shown on left
F940WGOT	Ver1.40	When a bit device is set to ON/OFF in the GOT, the lock of all bit devices is reset, and the forcible ON/OFF operation in a sequence program becomes valid (using the KC command)..	When a bit device is set to ON/OFF in the GOT, the lock of only the bit device set to ON/OFF is reset, and the forcible ON/OFF operation in a sequence program becomes valid (using the FK command).
F940GOT, F943GOT	Ver6.40		
F930GOT-K	Ver1.00		
F930GOT, F933GOT	Ver4.40		
F920GOT-K	Ver1.00		
F94☐ Handy GOT	Ver6.40		

9.6 LIST MONITOR screen (for monitoring the list of the FX Series PLC) - Screen No. 1024

When the GOT is connected to the FX Series PLC, monitoring in the instruction list program format is available.
Without regard to the memory type of the FX Series PLC, list monitor is available while the PLC is in the RUN or STOP status.

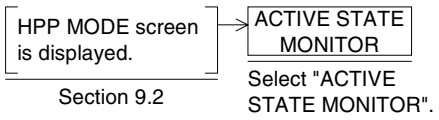
Basic operations

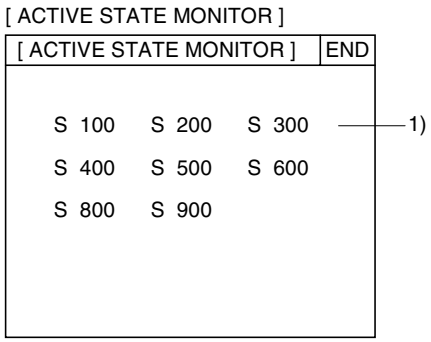


9.7 ACTIVE STATE MONITOR screen (for monitoring the state S) - Screen No. 1002

While a step ladder program is running in the FX Series PLC, up to eight active state Nos. are displayed in the dynamic monitoring format.

Basic operations





1) Active state
The list of state Nos. in the ON status is displayed.

9.7.1 Cautions on use

1) If no state No. is in the ON status
The message "NO ACTIVE STATE" is displayed.
2) The step ladder monitor (M8047) should be ON without exception.
If M8047 is OFF in the sequence program, the message "M8047 IS NOT ON." is displayed.
3) Number of states (S) in the ON status which can be monitored
If more than eight states are in the ON status, eight states are displayed from the smallest state No., and other states are not displayed.

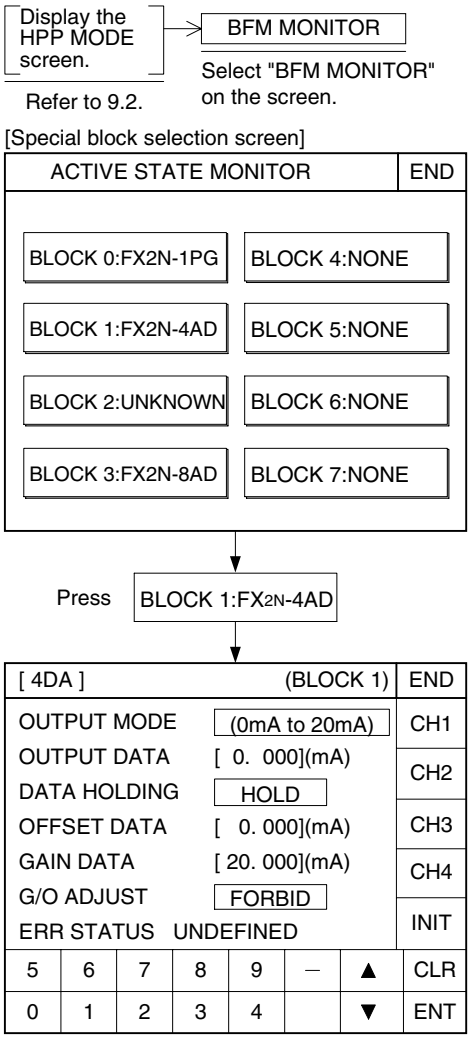
9.8 BFM MONITOR screen (for monitoring BFM in special blocks for the FX Series PLC) - Screen No. 1025

The contents of the buffer memory (BFM) in special blocks connected to the FX2N/FX2NC Series PLC can be read and written.
Because the model of connected special blocks is automatically recognized and the contents of the buffer memory are displayed with the name and unit, the operator can confirm the operations without any manipulation.

9.8.1 Applicable special block

Classification	Special block model name
Analog input	FX2N-4AD, FX2N-4DA, FX2N-4AD-PT, FX2N-4AD-TC, FX2N-8AD, FX2N-2LC
	FX2N-8AD, FX2N-2LC • Available from the OS version 6.30 or later in the F940GOT and Handy GOT. • Available from the OS version 1.30 or later in the F940WGOT.
High-speed counter	FX2N-1HC
Pulse output	FX2N-1PG

Basic operations



A special block connected nearest to the FX2N/FX2NC Series PLC basic unit is regarded as the block No. 0. Up to eight special blocks can be monitored and set.

Contents of display
The model name is displayed for available special blocks.
"UNKNOWN" is displayed for unavailable special units (such as the FX-10GM and FX-20GM).
"NONE" is displayed if nothing is connected.

When a special block to be monitored is selected, the buffer memory list is displayed.

Changing the set value

When pressing a touch switch on the screen and inputting a number for the set value, use the ten-key board provided at the bottom of the screen.

In special blocks such as the FX2N-1PG
Use the [DETAIL] key to monitor the contents of the buffer memory in detail.

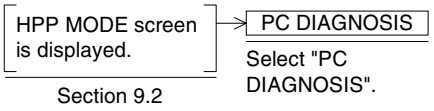
9.8.2 Cautions on use

1) Applicable PLC
   The buffer memory monitoring function is available only when the GOT is connected to the FX2N/FX2NC Series PLC.
2) Buffer memory when the power is set to OFF
   The contents of the buffer memory (BFM) set using the buffer memory monitoring function are initialized except a certain keep area when the power of the special block is set to OFF.
   For the details of the buffer memory, refer to the User's Manual of each special block.
   When a sequence program (TO instruction) is used in the setting, the set value is changed when the TO instruction is executed.
   Use the buffer memory monitoring function for monitoring or adjustment. When operating the machine, make sure to create a program which executes the TO instruction from the PLC.

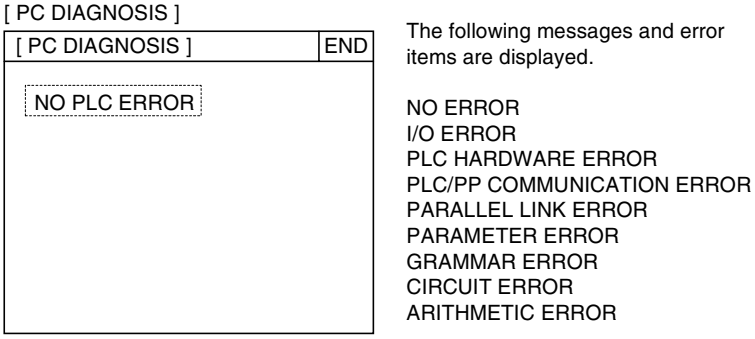
9.9 PLC DIAGNOSIS screen (for monitoring the error status in the FX Series PLC) - Screen No. 1003

Errors in the FX Series PLC are diagnosed, and error codes and contents of errors are displayed.

Basic operations



[PC DIAGNOSIS]

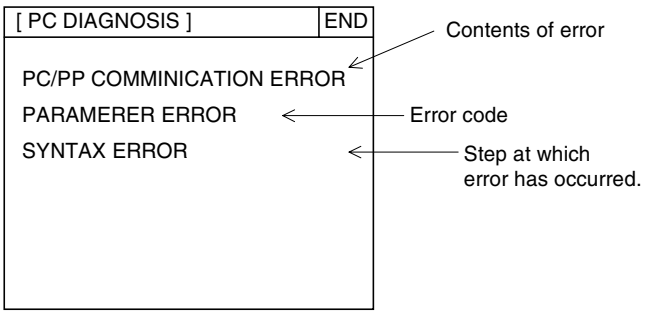


The following messages and error items are displayed.

NO ERROR
I/O ERROR
PLC HARDWARE ERROR
PLC/PP COMMUNICATION ERROR
PARALLEL LINK ERROR
PARAMETER ERROR
GRAMMAR ERROR
CIRCUIT ERROR
ARITHMETIC ERROR

If there are no errors in the PLC, "NO ERROR" is displayed.

If there are errors, the following contents are displayed.



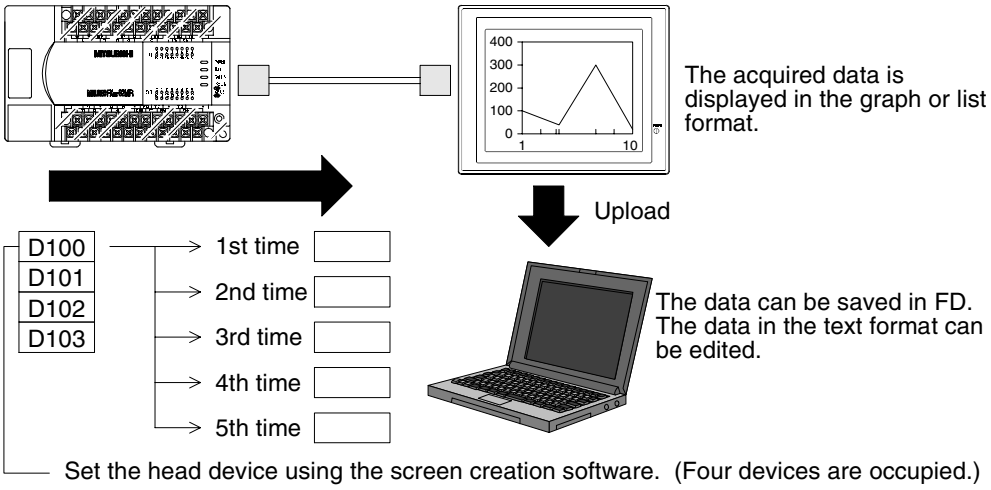
When the contents of errors in the PLC are reset, the message "NO ERROR" is automatically displayed.
For the contents of errors, refer to the "Programming Manual" of the FX Series PLC.

10. Sampling Mode

This chapter explains the sampling function built in the GOT.

10.1 Outline

The sampling function acquires the ever-changing contents of data registers at a constant time interval (in a constant cycle)or by the ON/OFF (trigger) condition of a bit device.
The acquired data can be displayed in the graph or list format, and used for management of data such as the machine operation rate and production status.



10.1.1 Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	×
F940GOT	✓	F920GOT-K	×
F930GOT	×	Handy GOT	✓

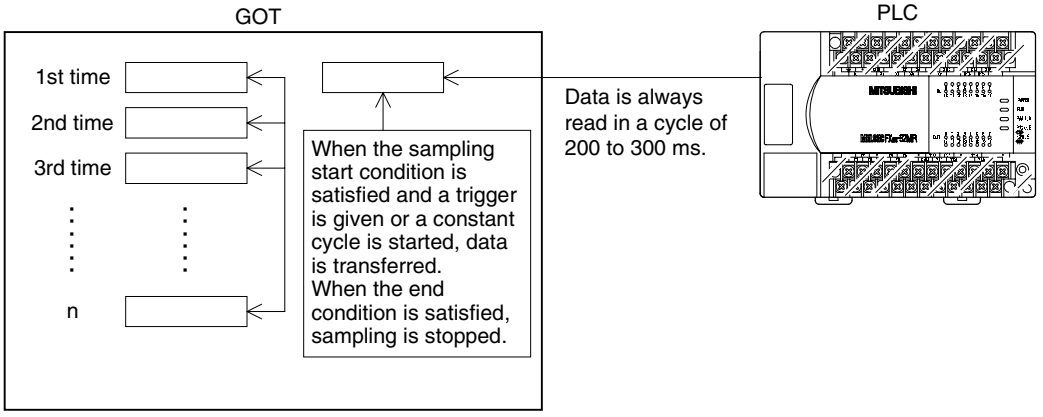
✓: Setting is enabled. ×: Setting is disabled.

10.1.2 Usage of sampling data

1) Printing the sampling data using the printer
   The sampling data can be printed using "PRINT OUT" on the OTHER MODE screen.
   And when the sampling data is read using the screen creation software, it can be printed in the printer of a general-purpose personal computer.
2) Saving the sampling data to files
   The screen creation software can save the sampling data to FDs and HDs.
3) Saving the sampling data in the text format to files
   Because the sampling data saved by the screen creation software can be read and converted into the text (.TXT) format, it can be processed using general commercial software.

10.1.3 Sampling mechanism and responsibility

Sampling is executed in the following operations.



10.2 How to set the sampling condition

The sampling condition can be set using either the screen creation software or the system screen of the GOT.

1) Setting the sampling condition using the system screen of the GOT
(Refer to Section 10.4.)
Manipulate the system screen of the GOT.
When a check mark is given to "Use Sampling" in the screen creation software, the contents of settings in the screen creation software are written to the GOT when the screen data is written.

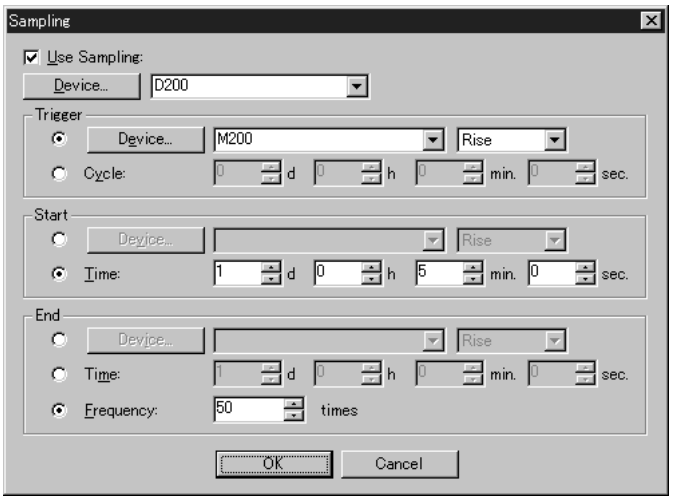
[SET CONDITION]

[SET CONDITION]	END
SAMPLE COND.	DEVICE M 0 OFF→ON
START COND.	DEVICE M 0 OFF→ON
END COND.	NUMBER 0
SAMPLING DEV.	D100

2) Setting the sampling condition using the screen creation software (GT Designer2)

Operating procedure Tool menu

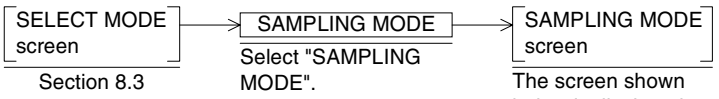
Select [Common]-[Sampling], and click "Use Sampling".

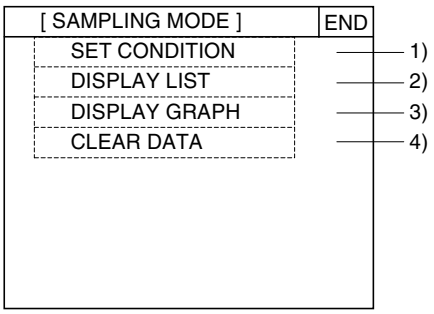


10.3 Sampling mode menu

Execute sampling of four specified data registers (16 bits) in a constant cycle or by a trigger condition.
Data on 2,000 devices can be acquired in data acquisition in either method.

Basic operations





When "SAMPLING MODE" is selected, the screen shown on the left is displayed.
On this screen, the sampling condition can be set, the result can be displayed, and the sampling data can be cleared.

1) SET CONDITION (Refer to Section 10.4.)
   Specify data registers to be sampled, set the sampling timing (trigger or constant cycle), and set the sampling start/end time.
   Execute these settings using either the GOT or screen creation software.

2) DISPLAY LIST
3) DISPLAY GRAPH (Refer to Section 10.5.)

   The sampling result is displayed in the list or graph format.
   List: The sampling time (hour, minute and second) and data are displayed in the list format.
   Graph: The sampling data is displayed in the line graph format.

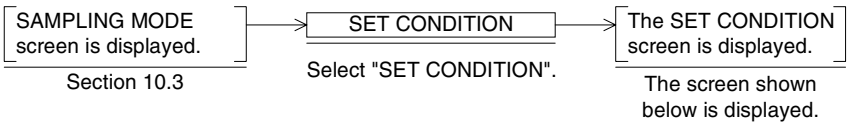
4) CLEAR DATA (Refer to Section 10.6.)
   The entire sampling result is cleared.
   Data clear can be executed from either the GOT or PLC.

10.4 SET CONDITION screen (system screen) - Screen No. 1004

Several condition settings are required to execute sampling.
This section explains the sequence and contents of the settings.

10.4.1 SET CONDITION screen

Basic operations



For sampling, set four items, "SAMPLE COND.", "START COND.", "END COND." and "SAMPLING DEV." on the SET CONDITION screen. Each item functions as a touch switch, and switches to corresponding set item screen when pressed.

[SET CONDITION]

[SET CONDITION]		END
SAMPLE COND.	DEVICE M 0 OFF→ON	1)
START COND.	DEVICE M 0 OFF→ON	2)
END COND.	NUMBER 0	3)
SAMPLING DEV.	D100	4)

3) END COND.

Set the timing to finish sampling.

NUMBER OF TIMES:
Set the number of times of sampling. When the number of times of sampling reaches the value set here, sampling is finished.
When sampling is executed by a trigger: 2,000 times maximum
When sampling is executed in a constant cycle: 2,000 times maximum

DEVICE:
When the specified bit device turns ON or OFF, sampling is finished.

TIME: Set date, hour, minute and second. When the specified date and time are reached, sampling is finished.
If the specified date and time are not reached even after sampling has been executed 2,000 times, existing sampling data is deleted from the oldest one, and the latest data is acquired.

1) SAMPLE COND.

Set the sampling condition.
When the condition set here is satisfied, data of specified data registers is acquired.
The trigger and constant cycle are available.

DEVICE : Data is acquired at ON (rising) or OFF (falling) of a bit device.

CONSTANT CYCLE: Data is acquired at a constant time interval.

2) START COND..

Set the timing to start sampling.

DEVICE : Sampling is started at ON (rising) or OFF (falling) of a bit device.

TIME : Sampling is started at specified date and time (hour, minute and second).
The time set in "SET TIME SWITCH" on the OTHER MODE screen is used as the reference.

If the start condition is not satisfied, sampling is not executed even if the sampling condition is satisfied.

* When there is no start condition, specify M8000 (for the FX Series PLC) or M9036 (for the A Series PLC) which is always ON while the PLC is running.

4) SAMPLING DEV.

Specify a data register (16 bits) to be sampled.
Though only one device is specified, the specified D, D+1, D+2 and D+3 (four devices in all) are sampled.
The settings are stored (backed up by the battery) even if the power of the GOT is set to OFF or if the GOT is switched to another mode.

10.4.2 Operating procedure

1) Setting the sampling condition
Set the timing to execute sampling. When this sampling condition is satisfied, specified data registers are sampled and acquired data is stored.
For the sampling condition, device (trigger) or constant cycle can be selected.

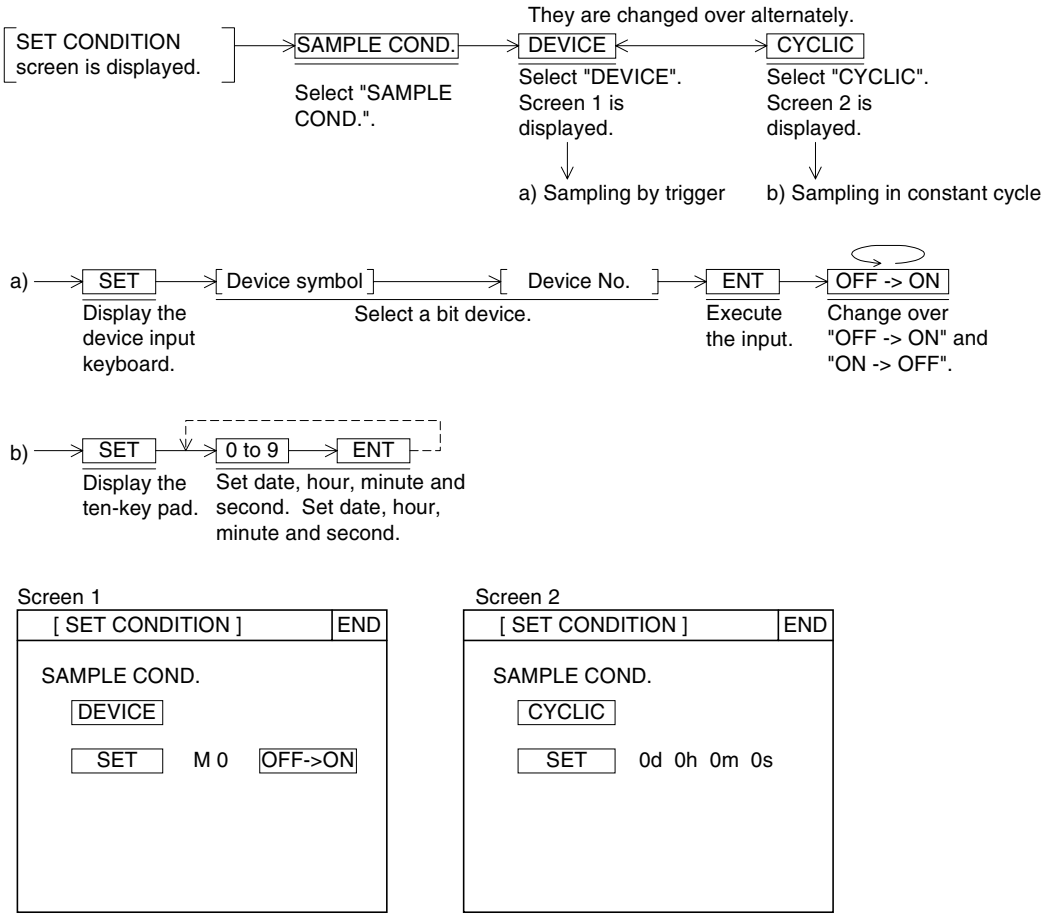
a) Executing sampling by a device (trigger)

Sampling is executed at ON (rising) ⌐↑ or OFF (falling) ↓¬ of a specified bit device.

b) Executing sampling in a constant cycle

The cycle can be set in the range from 0 day 00 hour 00 minute and 00 second to 10 days 23 hours 59 minutes and 59 seconds. Sampling is executed at a specified time interval.

Basic operations



Screen 1

Screen 2

2) Setting the start condition

Set the timing to start sampling. (If this start condition is not satisfied, sampling is not executed even if the sampling condition (trigger or constant cycle) is satisfied.)

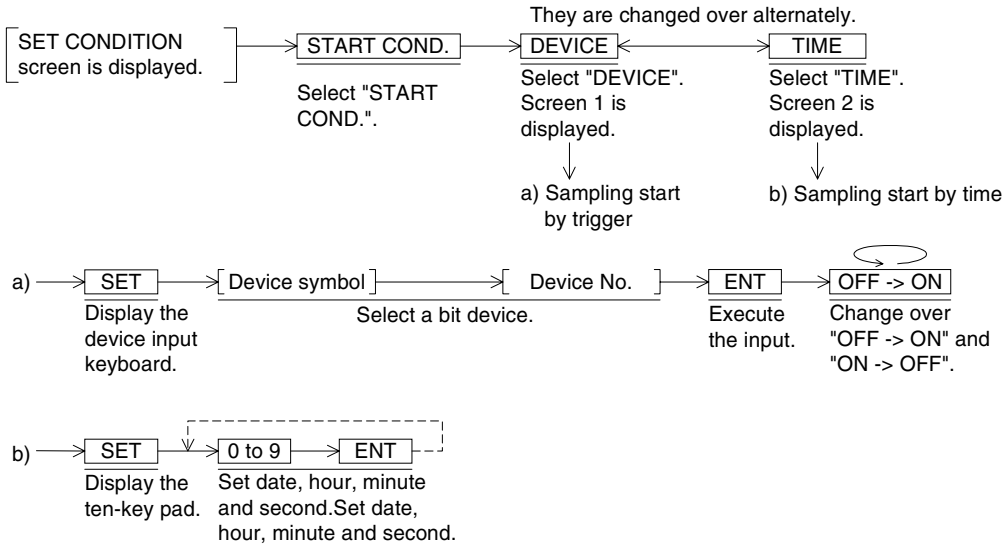
a) Starting sampling by a device (trigger)

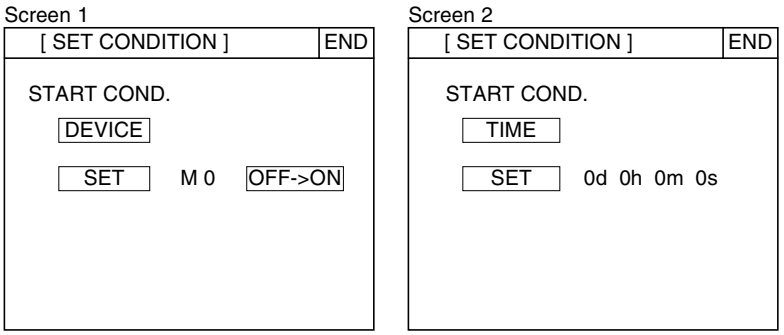
Sampling is started at ON (rising) or OFF (falling) of a specified bit device.

b) Starting sampling at date and time

The cycle can be set in the range from 1 day 0 hour 0 minute 0 second to 31 days 23 hours 59 minutes 59 seconds. Sampling is started when specified date and time are reached.

Basic operations





3) Setting the end condition
Set the timing to finish sampling. When the end condition is satisfied, sampling is finished.

a) Finishing sampling by a set number of times

When the number of times of sampling reaches the set value, sampling is finished.
Up to 2,000 times can be set.

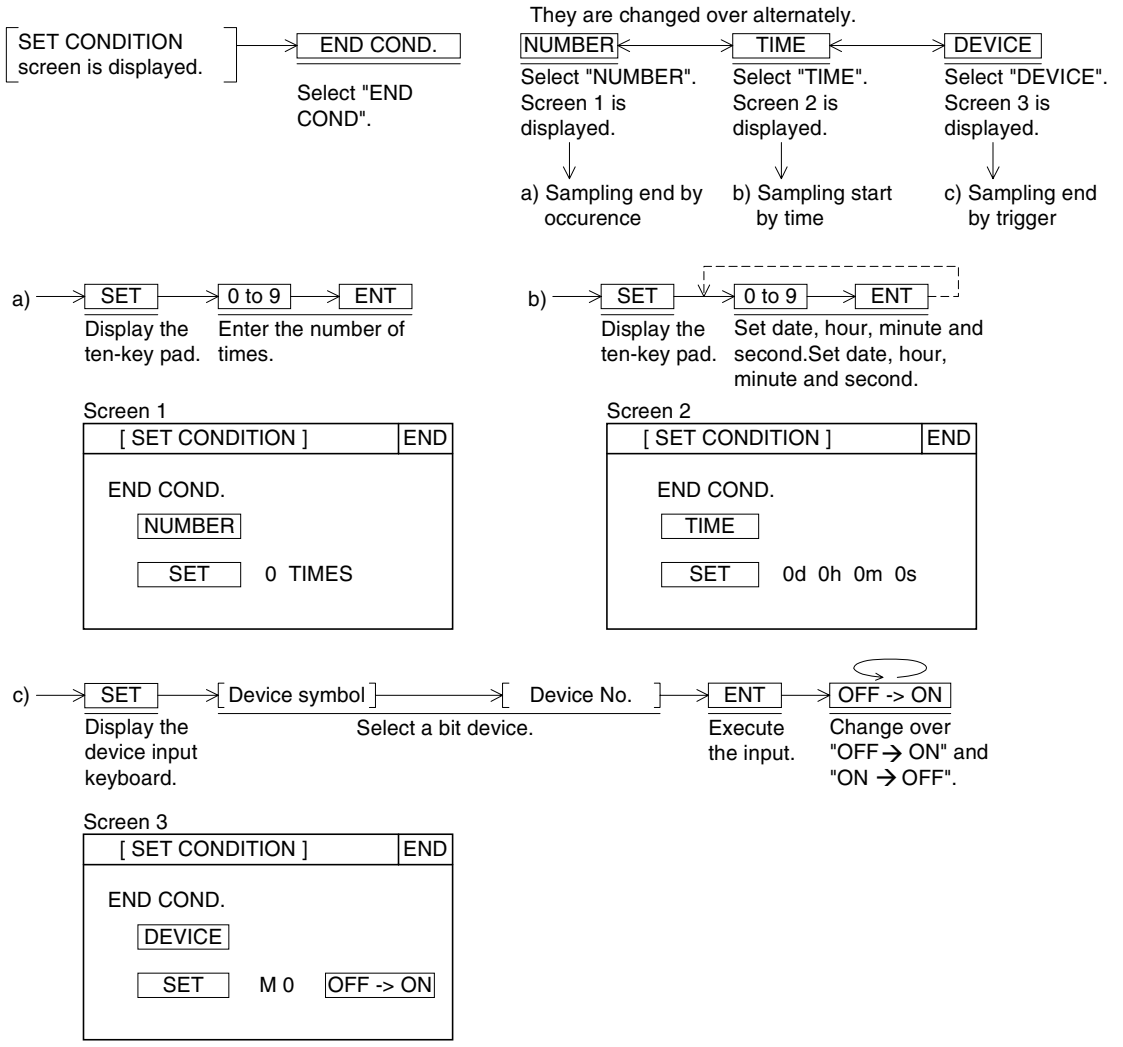
b) Finishing sampling at date and time

The cycle can be set in the range from 1 day 0 hour 0 minute 0 second to 10 days 23 hours 59 minutes 59 seconds. Sampling is started when specified date and time are reached.
Sampling is continued until specified date and time. However, if data is acquired more than 2,000 times, existing data is deleted from the oldest (first) data, and the latest data is saved. (The sampling data is shifted.)

c) Finishing sampling by a device (trigger)

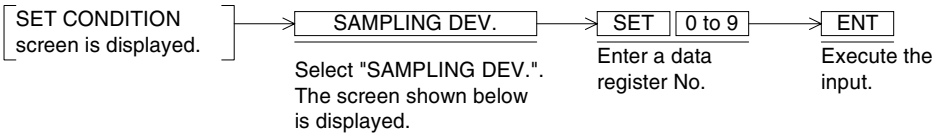
Sampling is finished at ON or OFF of a specified device. However, if data is acquired more than 2,000 times, existing data is deleted from the oldest (first) data, and the latest data is saved.

Basic operations

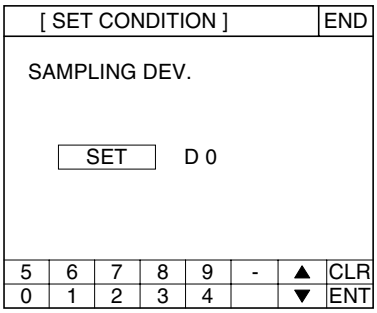


4) Setting a sampling device
Set a word device to be sampled.
From the word device set here, four consecutive word devices are sampled.

Basic operations

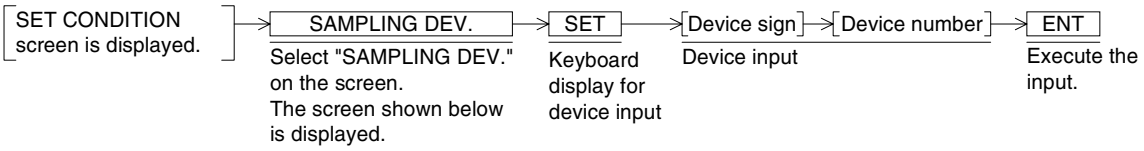


[SAMPLING SET SCREEN]

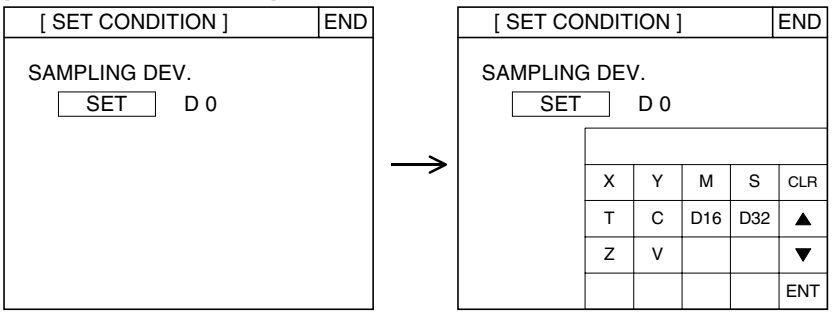


Contents of version upgrade

A 16-bit word device other than data register (that is, timer or counter) can be specified also from Ver. 2.00 in the F940GOT and Handy GOT or from Ver. 1.00 in the F940WGOT. The operation shown below is available.



[SAMPLING SET SCREEN]



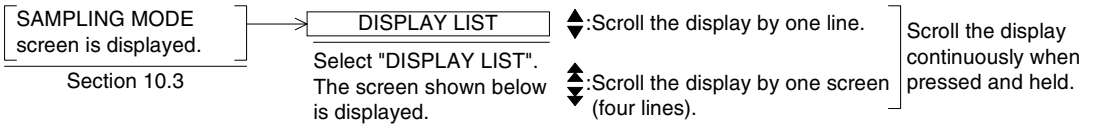
10.5 DISPLAY LIST/DISPLAY GRAPH screen (system screen) - Screen No. 1005/1006

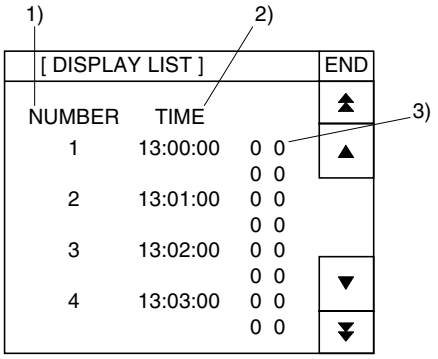
The sampling result is displayed in the list or line graph format.

10.5.1 DISPLAY LIST screen - Screen No. 1005

The sampling result is displayed in the list format. Four data is displayed on one screen.

Basic operations





1) Number of times of sampling
2) Sampling time
3) Sampling result

In the case of F94*GOT and Handy GOT
The result is displayed in the following format:
D□ D□+1
D□+2 D□+3

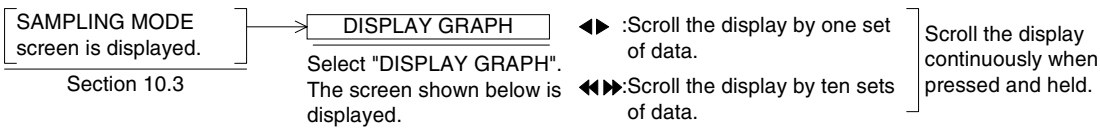
In the case of F940WGOT
The result is displayed in the following format:
D□ D□+1 D□+2 D□+3

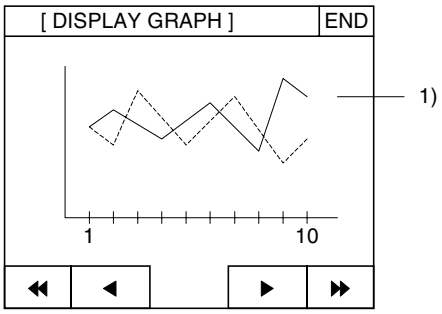
("□" indicates a data register No. specified in "SAMPLING DEV.")

10.5.2 DISPLAY GRAPH screen - Screen No. 1006

The sampling result is displayed in the line graph format.

Basic operations





1) Sampling result

D□
D□+1
D□+2
D□+3
("□" indicates a data register No. specified in "SAMPLING DEV.")

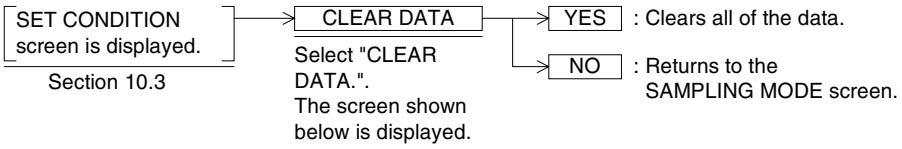
In the line graph format, values in the range from -32,768 to +32,767 are displayed.

10.6 CLEAR DATA screen (system screen) - Screen No. 1007

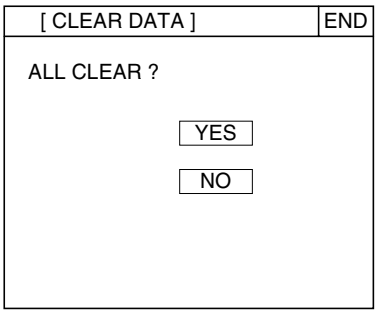
The entire sampling result can be cleared.

10.6.1 Clearing the data from the GOT

Basic operations



[CLEAR DATA]



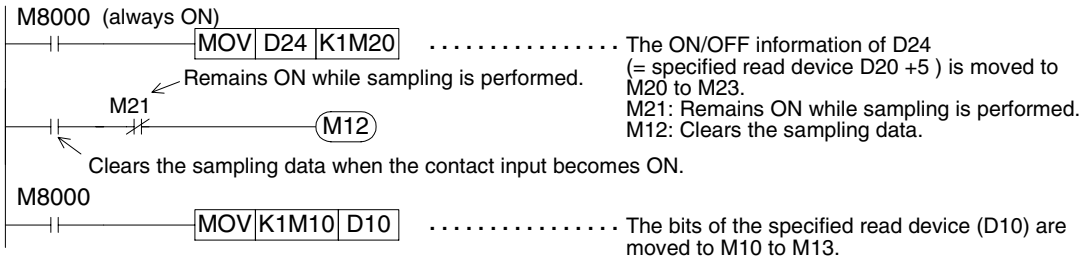
When clear of the entire sampling data is completed, the message "COMPLETED" is displayed.

10.6.2 Clearing the data and monitoring the sampling status from the PLC

From the PLC, the sampling data can be cleared, and the sampling status can be monitored.

1) Setting in the screen creation software
   Use the following devices in the system information.
   Read device:
   The third bit (b2) of the specified word device turns ON, the sampling data is cleared.
   Write device:
   hen the second bit (b1) of the specified head device +4 remains ON while sampling is executed.

2) Sequence program example
   Example: When D10 is assigned as the read device and D20 is assigned as the write device



10.6.3 Cautions on data clear execution

1) Cleared data range
   The data clear function clears only the sampling data, and does not clear the word device set in "SET CONDITION".
2) Execution during sampling
   If the sampling data is cleared while sampling is executed, the acquired data is cleared completely and sampling is stopped.

10.7 Cautions on use

1) Storage of sampling data
   The registered condition settings and acquired sampling data are backed up by the battery, and kept stored even if the power of the GOT is set to OFF.

2) Sampling stop/clear condition
   Note that sampling is stopped or the sampling data is cleared if a function shown below is selected during sampling.
   For clearing the sampling data, set to ON the read device in the system information or execute data clear.

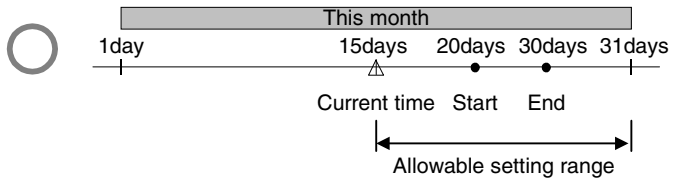
Mode	Function	Sampling	Sampling data
Other mode	Current time (SET TIME)	When the time is set, sampling is suspended.(If the time is only displayed, sampling is continued.)	Data acquired up to suspension is saved, and continued when time setting is finished.
	Data transfer*1 (DATA TRANSFER) Read / collation	Sampling is continued.	Sampling data is saved even during read and collation.
	Data transfer*1 (DATA TRANSFER) Write	Sampling is stopped.	Data acquired up to stop is saved.

*1 The user screen data is transferred from the screen creation software.

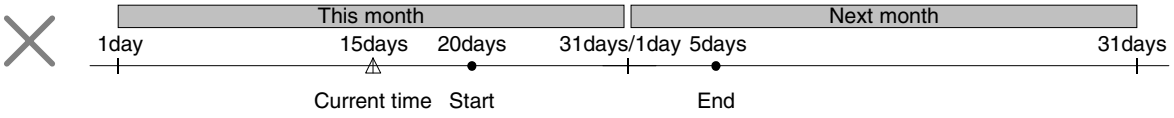
3) Time in the sampling condition
   The sampling start time ("TIME" in "START COND.") and the sampling end time ("TIME" in "END COND.") are compared with the current time of the clock built in the GOT-F900.
   Accordingly, confirm that the clock data is correct before starting sampling.
   Set the clock built in the GOT by selecting [SELECT MODE]→[OTHER MODE]→[SET-UP MODE]→[SET TIME].

4) Time of trigger and constant cycle
   The time up to 500 ms is required until sampling is actually started after a trigger is given or a constant cycle is started. Accordingly, if a trigger is give at high speed or if the constant cycle is short, accurate sampling may not be achieved.
   It is recommended to set the sampling time to 1 second or more for both the trigger and constant cycle.

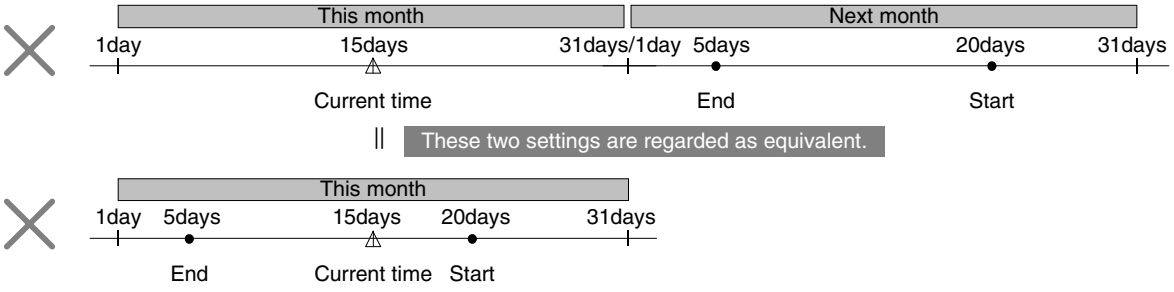
5) Setting range of the sampling start time and the sampling end time
Make sure to set the start/end time in the range from the current time to 31 days 23 hours 59 minutes 59 seconds.
If the start/end time is set to time former than the current time, sampling is regarded as finished.
The date and time of sampling start and the date and time of sampling end are compared with the current time respectively, then the start condition flag and the end condition flag are set to ON.
Setting of the period from the start time to the end time extending over the next month (in which the start time is former than the current time) and setting of the next month (in which the end time is former than the current time) are not allowed. (For such settings, use "DEVICE" in "START COND." or "NUMBER OF TIMES" in "END COND.")



Setting in which the sampling period extends over the next month



Setting of the next month
Setting in which the current time is located between the start time and the end time



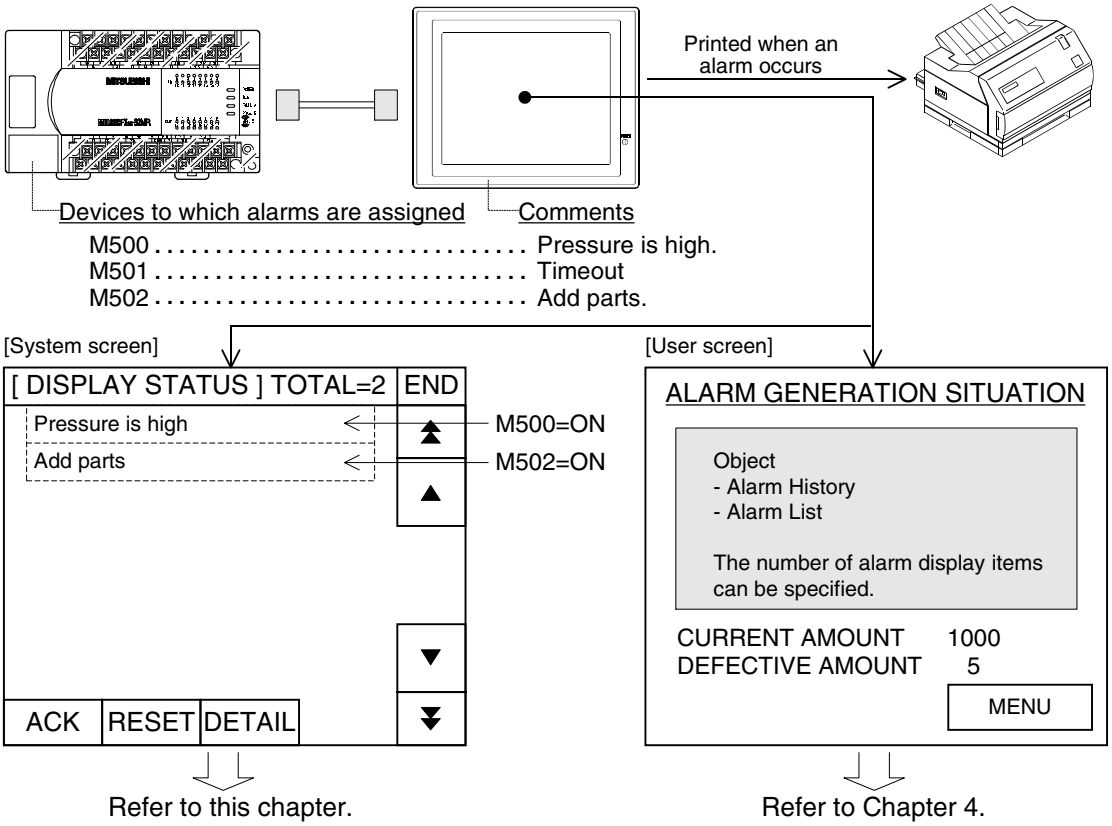
MEMO

11. Alarm Mode

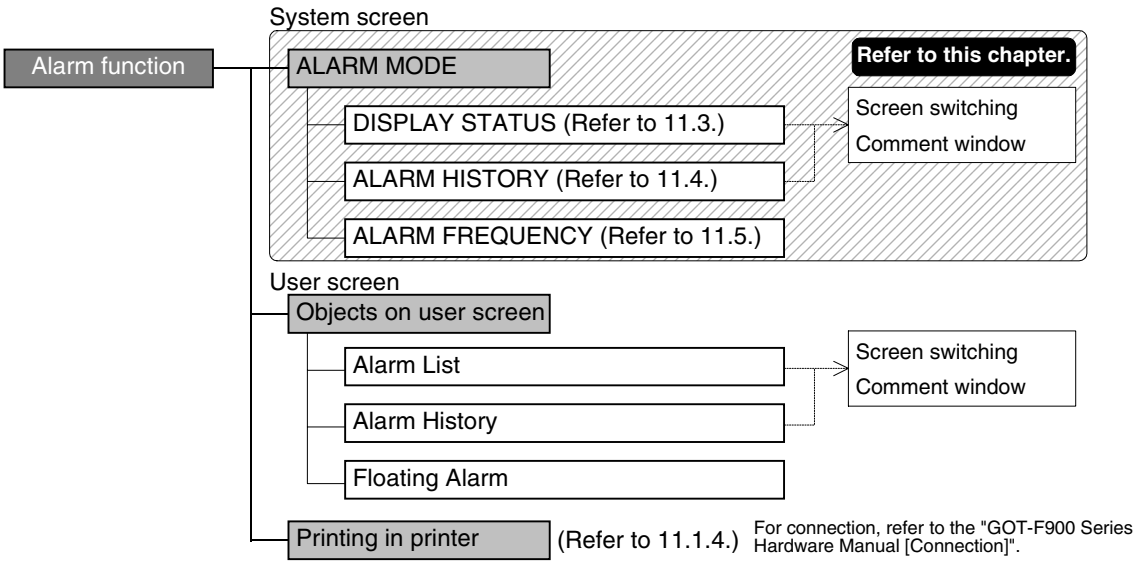
This chapter explains the alarm mode built in the GOT.

11.1 Outline

The alarm function is very useful. It stores the list of currently present alarms and the history of alarms so far, and helps monitoring of the machine status and troubleshooting.
The alarm function of the GOT consists of the "ALARM MODE" of the system screen as well as the "Alarm Display" objects displayed on the user screen.
(In the F920GOT-K, alarms can be displayed only on the user screen.)



Alarm type list



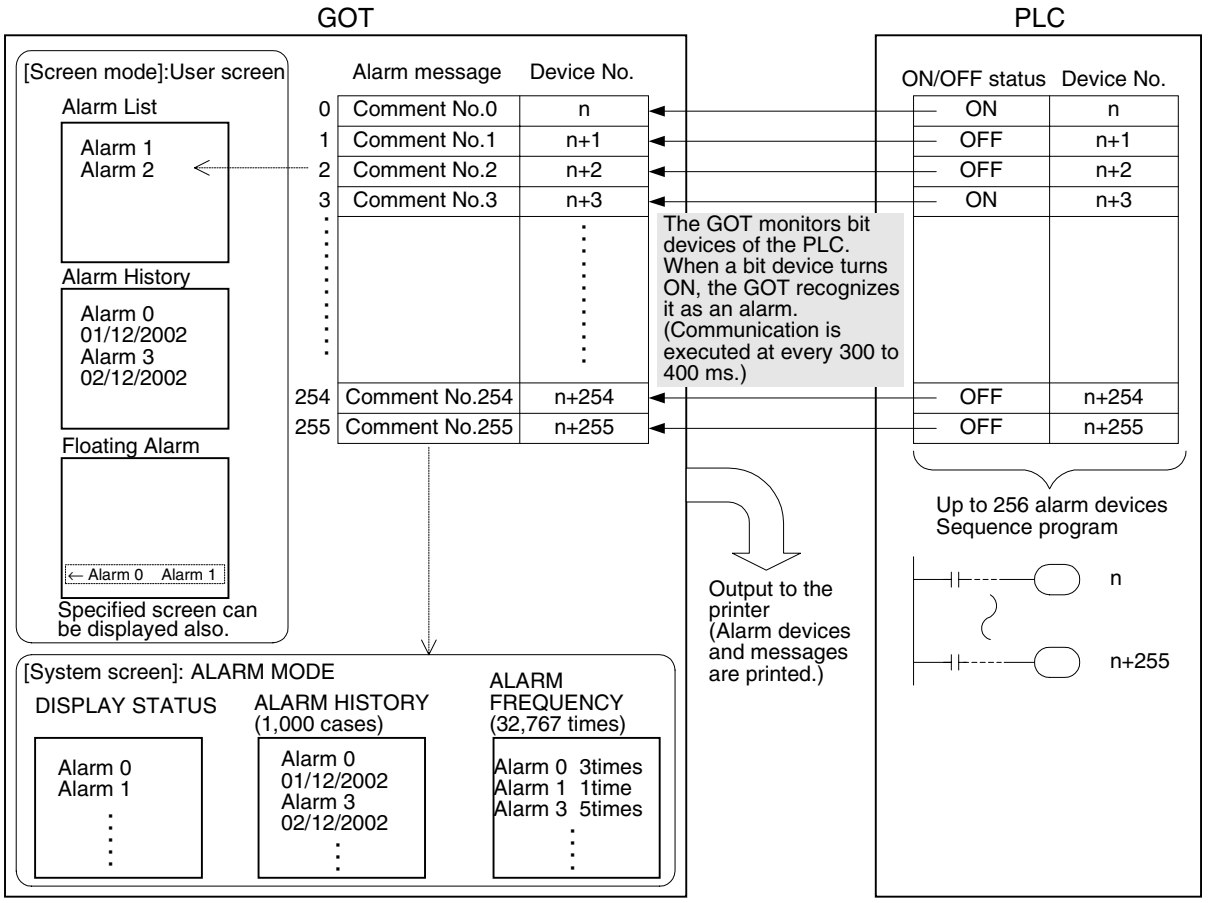
11.1.1 Applicable GOT

Model name	System screen				User screen	
	DISPLAY STATUS	DISPLAY HISTORY	DISPLAY FREQUENCY	CLEAR HISTORY	Alarm List Display	Alarm History Display
F940WGOT	✓	✓	✓	✓	✓	✓
F940GOT	✓	✓	✓	✓	✓	✓
F930GOT	×	×	×	×	✓	✓
F930GOT-K	×	×	×	×	✓	✓
F920GOT-K	×	×	×	×	✓	✓
Handy GOT	✓	✓	✓	✓	✓	✓

✓: Setting is enabled. ×: Setting is disabled.

11.1.2 Operation and number of alarms

The figure below shows the outline of alarm operations.
When one of consecutive bit devices (256 devices maximum generally and 32 devices in the F920GOT-K) of the PLC assigned for alarms turns ON, the GOT recognizes occurrence of alarm (at the rising edge of turning ON). If two or more bit devices turn ON, the GOT recognizes them one by one.



1) Alarm monitoring cycle

At every time (variable within the range from 600 ms in the increment of 100 ms) set in "Monitoring Cycle" available by selecting [Common]-[Alarm History], the GOT reads the ON/OFF status of devices specified for alarms.

In the case of F920GOT-K

In the F920GOT-K, the monitoring interval varies considerably depending on the status of monitoring and steady processing (such as alarm function and status monitoring function). If the load is large and the interval among target bit devices is short, the F920GOT-K may not be able to detect pulse changes (between ON and OFF).
Let the ON/OFF status of bit devices be kept for sufficient period so that the F920GOT-K can securely detect pulse changes.

2) Maximum number of alarms
   The GOT saves the maximum number of cases/times shown below in ALARM HISTORY and ALARM FREQUENCY, and stores them even if the power is set to OFF.
   a) ALARM HISTORY: 1,000 cases
      If the alarm history exceeds 1,000 cases, the data is deleted from the oldest case and recording is continued.
      (Or the data can be deleted from the newest case if it is set so in the screen creation software.)
   b) ALARM FREQUENCY: 32,767 times
      Alarms exceeding 32,767 times cannot be totaled.
3) Two or more alarms
   If two or more alarms have occurred, the alarm list is sorted so that bit devices specified for alarms are indicated in the ascending order of the device No. The alarm history stores alarms in the order of occurrence.
4) Handling of alarms occurred while the system screen is displayed
   If an alarm has occurred in any mode other than the user screen mode, its occurrence history and frequency are recorded.
   And switching to a specified screen and output to the printer are executed.
   (Overlap display is not executed.)

11.1.3 Setting in the screen creation software (GT Designer2)

The alarm settings are different between the unit of project (common) and the unit of screen (individual).

1) Screen creation setting points in the alarm function

Classification	Screen name/object	Setting procedure in screen creation software (outline)	Unit of setting
System screen (ALARM MODE)	DISPLAY STATUS	[Common]-[Alarm History]	Project
	DISPLAY HISTORY		
	DISPLAY FREQUENCY		
User Screen Mode (Alarm Display)	Alarm List	[Object]-[Alarm List]	Screen
	Alarm History	[Object]-[Alarm History] Device setting and option setting are common with the settings on the system screen.	Screen
	Floating Alarm	[Common]-[Floating Alarm]	Project

2) ALARM MODE screen (system screen) (common)
Assign devices used on the ALARM MODE screen (system screen) and create alarm messages (comments) used on the ALARM MODE screen using the screen creation software.

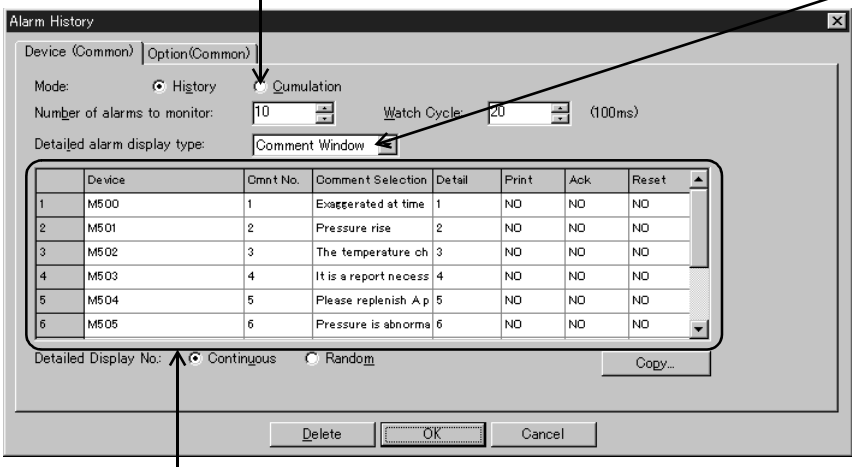
Operating procedure: Tool menu
Select [Common]-[Alarm History].

a) "Device (Common)" tab

The settings on the "Device (Common)" tab are common with the settings in the "Alarm History" object on the user screen.

In order to display the number of times of turning ON of devices specified for alarms, select "Cumulation Mode".
(In addition, "Number of Times" should be set on the "Option" tab.)

Set the detailed alarm display type.

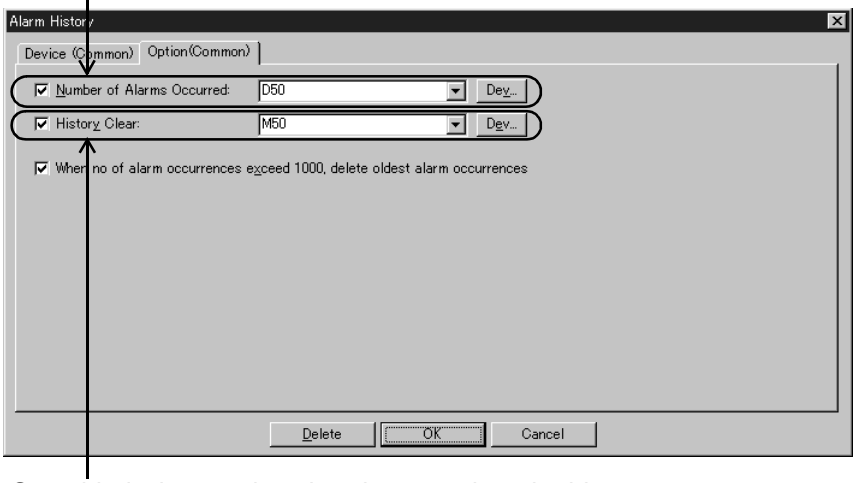


Set devices and comments displayed in the Alarm History, comment or screen No. used in the detailed display, and validness/invalidness of each operation.

b) "Option (Common)" tab

The settings on the "Option (Common)" tab are common with the settings in the "Alarm History" object on the user screen.

Specify a word device in which the number of alarms occurred is stored.
The word device set here stores the total number of times of turning ON of all devices specified for alarms.



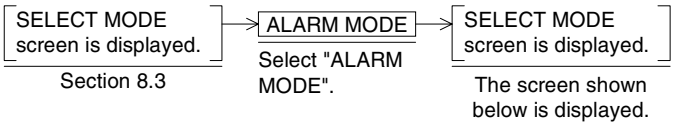
Set a bit device used as the trigger to clear the history.
When the bit device set here turns ON, the entire history is cleared.
(The alarm history data on the user screen is cleared also.)

11.1.4 Setting the printer

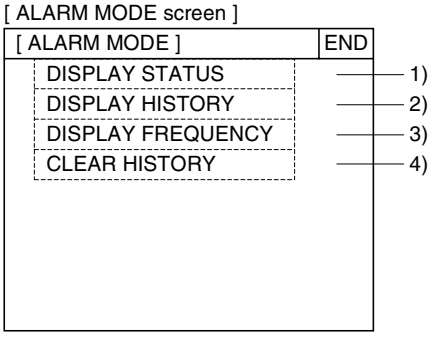
When a device specified for alarm turns ON (that is, when an alarm occurs), a corresponding alarm message can be output to the printer.
For the communication settings and wiring method, refer to the "GOT-F900 Series Hardware Manual [Connection]".

11.2 ALARM MODE screen (system screen)

Basic operations



[ALARM MODE screen]



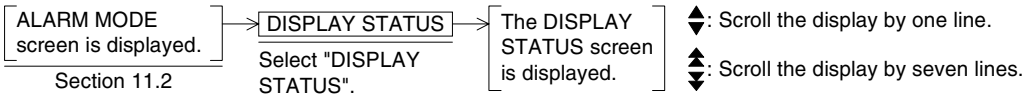
1) DISPLAY STATUS
   The list of comments corresponding to alarm devices currently in the ON status is displayed.
   An alarm device currently in the ON status can be reset from the GOT.
2) DISPLAY HISTORY (ALARM HISTORY)
   The date and time of occurrence and comment of alarms are stored and displayed in the order of occurrence. Up to 1,000 cases can be saved.
3) DISPLAY FREQUENCY (ALARM FREQUENCY)
   The number of times of turning ON is stored for each alarm device, and displayed in the order of alarm device No. Up to 32,767 cases can be totaled.
4) CLEAR HISTORY
   The entire alarm history and alarm frequency are cleared.

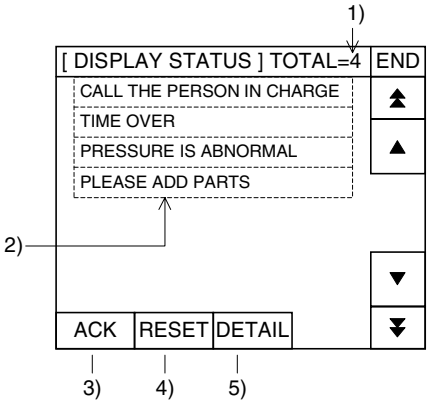
The system screens 1) to 4) (screen Nos. 1008 to 1011) can be displayed by screen switching in the user screen mode.

11.3 DISPLAY STATUS screen (system screen) - Screen No. 1008

This section explains the DISPLAY STATUS screen display operation.
On this screen, alarm messages (comments) corresponding to alarm devices currently in the ON status are displayed.

Basic operations



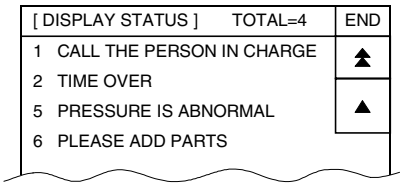


1)Number of alarms currently in the ON status
2) Alarm messages
Comments created in the screen creation software are displayed.
3) ACK] (confirmation) key
4) [RESET] key
5) [DETAIL] (detailed message display) key

In the list, devices specified for alarms are displayed in the ascending order of the device No.
The alarm confirmation (ACK) operation and alarm device reset operation are available.

11.3.1 "ACK" operation

The [ACK] key is provided to confirm occurrence of alarms.
Put the cursor on a comment to be confirmed using the cursor control keys, then press the [ACK] key.



If the specified device is OFF when the [ACK] key is pressed, the corresponding message is deleted from the list and messages below it are shifted upward.
If the specified device is ON, the corresponding message remains displayed.

Alarms can be reset (that is, specified devices can be set to OFF) using the reset operation described in the next page.

11.3.2 "RESET" operation

Existing alarms (devices currently in the ON status) can be reset (set to OFF).
Put the cursor on a comment to be reset using the cursor control keys, then press the [RESET] key to delete the comment (alarm message) from the screen.

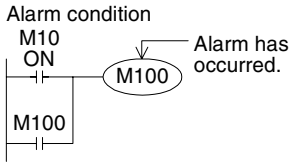
1) Setting in the screen creation software (GT Designer2)
   In order to make valid the reset operation, make sure to make valid the reset function in the alarm settings in the screen creation software.

   Operating procedure | Tool menu

   Select [Common]-[Alarm History].

2) Confirmation operation + Reset operation
   If the GOT is set so that the "confirmation" operation and reset operation are used together, the reset operation is executed. Even if a device specified for alarm is set to OFF, a corresponding alarm message is not deleted from the list. In such a case, execute the "ACK" operation described in the previous page.

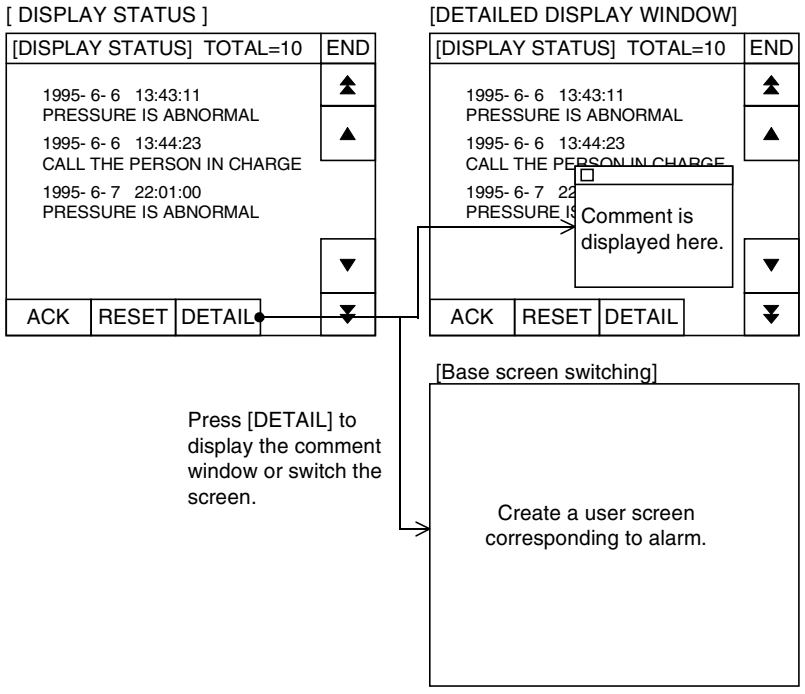
3) Caution on sequence program
   In a sequence program in which an auxiliary relay turns ON again even after it is set to OFF by the reset operation as shown below, devices specified for alarms are not reset (set to OFF).



   For example, even if M100 is reset, it turns ON again if the contact M10 is ON.
   Set to OFF the contact M10 which causes the alarm (M100) to ON.

11.3.3 "DETAIL" operation

The alarm message (comment window) is displayed or the base screen is switched, and details are displayed.



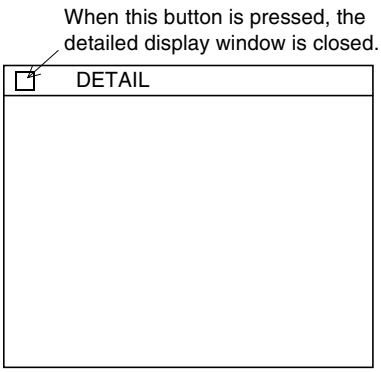
1) Setting in the screen creation software (GT Designer2)
   To enable detailed display, make sure to set "Detailed Alarm Display Type" available by selecting [Common]-[Alarm History] in the screen creation software to "Comment Window" or "Base Screen".

   Operating procedure | Tool menu

   Select [Common]-[Alarm History].

2) Example of detailed display

   a) When "Comment Window" is specified



Put the cursor on an alarm message whose details are to be displayed, then press the [DETAIL] key to open the detailed display window shown on the left.

A comment having the "No." specified in the screen creation software is displayed.

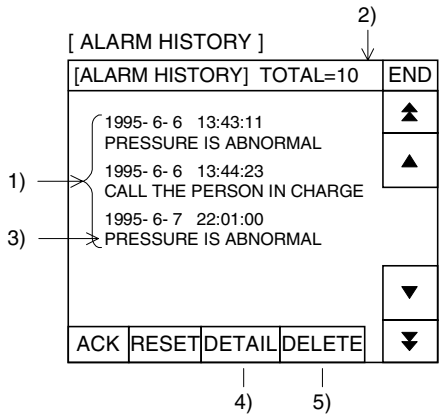
   b) When "Base Screen" is specified

      The screen having the screen No. specified in the screen creation software is displayed.

11.4 ALARM HISTORY screen (system screen) - Screen No. 1009

This section explains the ALARM HISTORY screen (ALARM MODE) display operation.
On this screen, with regard to alarm devices turned ON so far, the date and time of occurrence and alarm messages are displayed in the order of occurrence.
Up to 1,000 cases are stored. If more than 1,000 alarms have occurred, the stored history is deleted from the oldest one, and the latest data is saved. (The oldest alarm is displayed at first in the alarm history.)
Alarms can be displayed from the oldest one or from the newest one according to the specification.

Basic operations



1) Five alarms are displayed in the order of occurrence.
2) The total number of alarms occurred so far is indicated.
3) The date and time of occurrence and alarm message of each alarm are displayed.
4) This key displays detailed message.
5) This key deletes an alarm in the cursor position.

[ACK] (For the details, refer to Section 11.3.1.)
Use this key to confirm occurrence of alarm.

[RESET] (For the details, refer to Section 11.3.2.)
Use this key to reset (set to OFF) an existing alarm (auxiliary relay currently in the ON status). Even if this key is pressed, the "reset" alarm is not deleted from the history.

[DETAIL] (For the details, refer to Section 11.3.3.)
Use this key to display the alarm message (commend window) or switch the base screen for detail display.

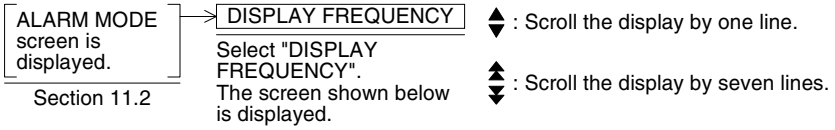
11.4.1 Clearing the history data

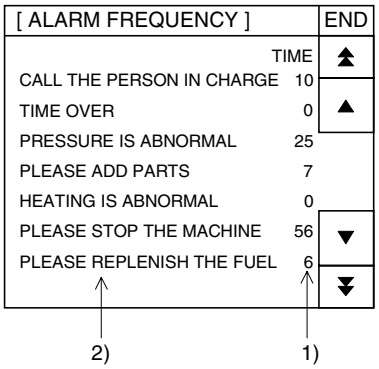
The history data can be cleared by the "CLEAR HISTORY" operation described later.

11.5 ALARM FREQUENCY screen (system screen) - Screen No. 1010

This section explains the ALARM FREQUENCY screen (ALARM MODE) display operation.
On this screen, the number of times of turning ON of each alarm device is displayed in the ascending order of alarm device No.
Up to 32,767 cases of alarm occurrence can be totaled.

Basic operations





1) Number of times of turning ON
2) Alarm message

11.5.1 Deleting the frequency data

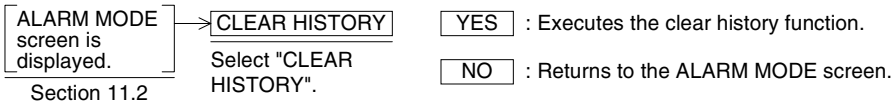
The frequency data can be cleared by the "CLEAR HISTORY" operation described later.

11.6 CLEAR HISTORY screen (system screen) - Screen No. 1011

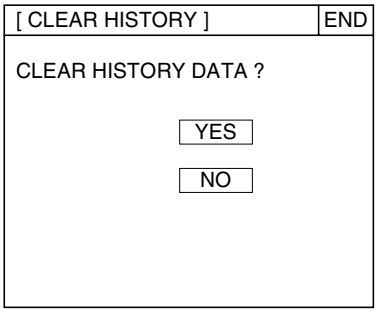
The "CLEAR HISTORY" function deletes the alarm history and alarm frequency.
This section explains the alarm history clear operations and methods.

11.6.1 Clearing the alarm history from the GOT

Basic operations



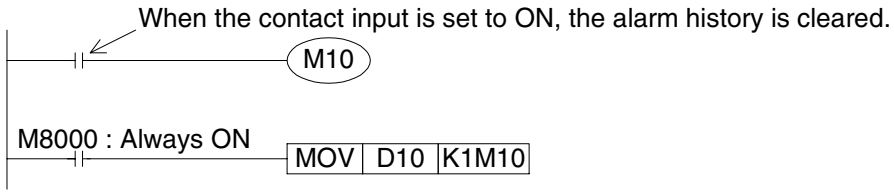
[CLEAR HISTORY]



When the history is cleared, the message "COMPLETED." is displayed.

11.6.2 Clearing the alarm history from the PLC

1) When executing the clear operation from the PLC
When the first bit (b0) of the head word device specified in "Read Device" in the system information is set to ON, the alarm history is cleared.
Example: When "Read Device" is set to D10



2) When setting the alarm history function
The history can be cleared also using a device specified in "HISTORY CLEAR" available by selecting [Common]-[Alarm History] in the screen creation software.

MEMO

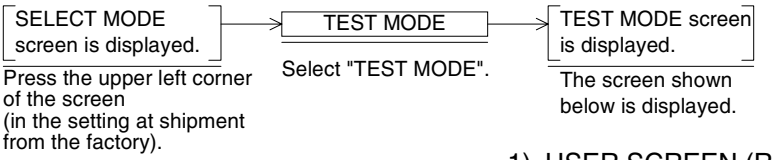
12. Test Mode

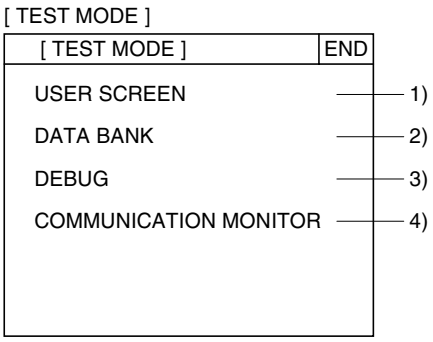
This chapter explains the test function built in the GOT.

12.1 Outline

In the test mode, user screens can be displayed in the list, data files can be edited, and key operations can be confirmed (debug operation).

Basic operations





1) USER SCREEN (Refer to Section 12.2.)
   User screens displayed in the user screen mode are displayed in the list.
2) DATA BANK (Refer to Section 12.3.)
   Data in data files created using the screen creation software can be modified.
3) DEBUG (Refer to Section 12.4.)
   Touch switch operations and screen switching operations can be confirmed.
4) COMMUNICATION MONITOR
   (Refer to Section 12.5.)
   The status of communication with connected equipment can be confirmed.

12.1.1 Applicable GOT and OS version

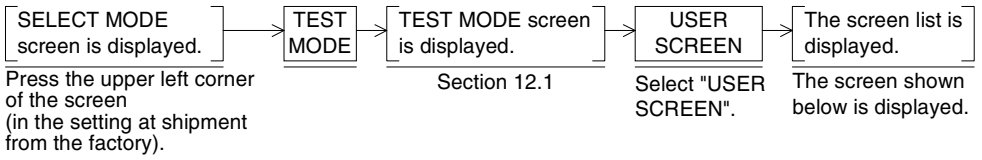
Model name	Availability (OS version)			
	USER SCREEN	DATA BANK	DEBUG	COMMUNICATION MONITOR
F940WGOT	✓	✓	✓	✓
F940GOT	✓	✓	✓	✓(Ver6.00~)
F930GOT	✓	×	×	×
F930GOT-K	✓	×	×	×
F920GOT-K	✓	×	×	×
Handy GOT	✓	✓	✓	✓(Ver6.00~)

✓: Setting is enabled. If applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

12.2 USER SCREEN screen (for checking for abnormalities on user screens) - Screen No. 1026

When "USER SCREEN" is selected on the TEST MODE screen, user screens displayed in the user screen mode can be displayed in the list.
Whether or not transferred screen data can be displayed normally in the GOT can be confirmed, and display images can be previewed.

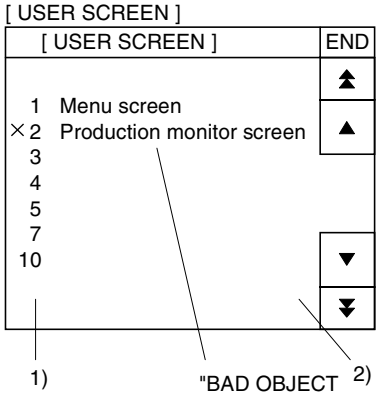
Basic operations



< Common screen > : The screen created as the common screen is displayed (only when the screen data created using the DU/WIN is read).

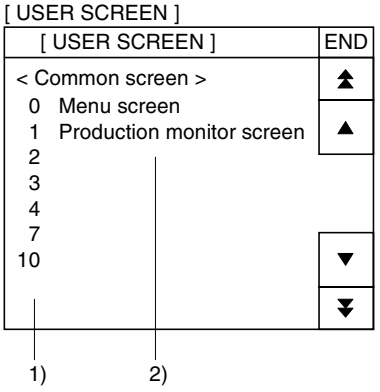
Individual screen : When an area indicating a screen No. and a screen name is pressed, the corresponding screen is displayed.
When a screen contains incorrect data and cannot be displayed, "×" is displayed on the side of the screen.

When screens are created newly using the GT Designer2
[USER SCREEN]



When "×" is displayed on the left side of screen No.

When the existing screen data created using the DU/WIN is read
[USER SCREEN]



1) Screen No.
2) Screen name

: Scroll the display by one line.

: Scrolls the display by five lines.

The preview display is not offered on the screen, but the message window showing "BAD OBJECT EXISTS" is displayed. In such a case, modify the screen using the screen creation software.
If a wrong object cannot be detected on the screen, deletes half objects at a time, then transfer the half screen data.

12.3 DATA BANK screen (for editing the recipe data) - Screen No. 1012

On this screen, edit the recipe data created using the screen creation software.
The number of data and the number of files should be set in advance for recipes using the screen creation software.

This screen is offered to change recipe data values in the GOT.
(In the F920GOT-K, F930GOT-K and F930GOT, data files can be used in objects, but cannot be edited on the GOT screen.)

Basic operations

SELECT MODE screen is displayed. → TEST MODE → TEST MODE screen is displayed. → DATA BANK → DATA BANK screen is displayed.

Press the upper left corner of the screen (in the setting at shipment from the factory).

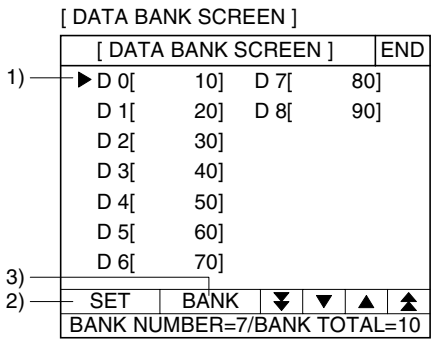
Section 12.1

Select "DATA BANK".

The screen shown below is displayed.

BANK : Allows to specify a file No. The screen No. currently edited is displayed on the screen.

SET : Displays the keyboard and allows to change the data indicated by the cursor.



1) Data
2) SET
Determines the data to be edited.
3) BANK
Selects the file to be edited.

: Move the cursor.

: Scroll the display by 14 files.

Setting in the screen creation software (GT Designer2)

Operating procedure: Tool menu

Select [Common]-[Recipe].

Handling of the data transferred from the personal computer

When the entire screen data is read from the personal computer, data files are read also.
At this time, read data files vary depending on the OS version of the GOT.

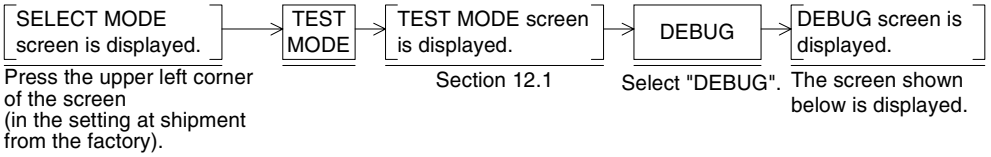
Model name	OS version	GOT whose OS version is former than those shown on left	GOT whose OS version is later than those shown on left
F940WGOT	Ver1.30	Even if data files are written from the personal computer and changed in the GOT, the contents of data files written at first by the personal computer are read.	When data files are written from the personal computer and changed in the GOT, the contents of changed data files are read.
F940GOT, F943GOT	Ver6.30		
F930GOT-K	Ver1.00*1		
F930GOT, F933GOT	Ver4.30*1		
F920GOT-K	Ver1.00*1		
F94☐ Handy GOT	Ver6.30		

*1 Though data files can be used in objects, they cannot be edited on the GOT screen.

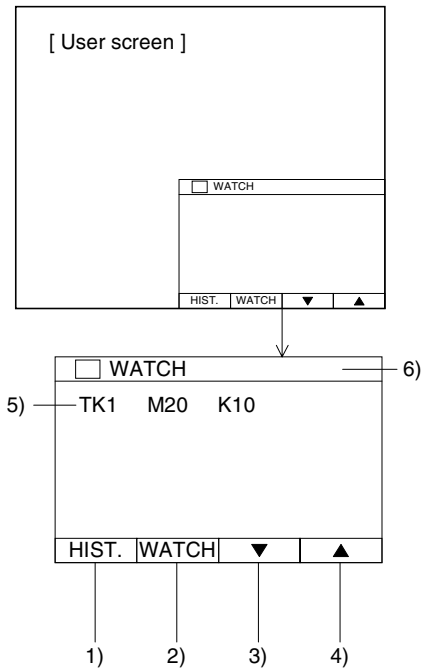
12.4 Debug operation (checking the switch function and the screen switching operation)

By using the debug operation, it can be confirmed whether or not the switch function and the screen switching operation were correctly executed on the user screen according to manipulation by the operator.
The debug window screen is displayed on the user screen.

Basic operations



[DEBUG screen]



1) HISTORY
Switches to the history list display.

2) MONITOR
Switches to the monitor list display.

3) 4) Cursor control keys

5) History list
Displays the history list indicating operations executed so far for the switch function and screen switching.
Monitor list
Displays the list indicating effective settings of screen switching.

6) Window movement
Press the area bar 6), then touch an arbitrary position to move the window to the position.

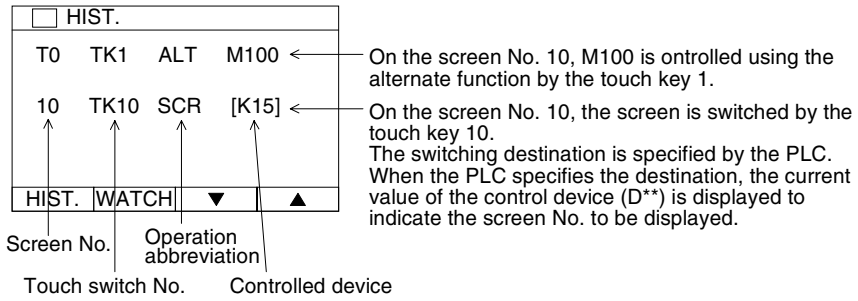
1) HISTORY

When the switch function (turning ON/OFF of a specified bit device) is executed using a touch switch or when the screen is switched, up to 20 records are left in the history in the order of execution.
When the number of records exceeds 20, they are deleted from the oldest one.
In the history, the screen No. in which a touch switch is pressed, touch switch No., operation and target device are displayed in this order.
Operations are displayed in the abbreviated format as shown below.

Operation abbreviation	Contents of operation	Displayed target device
SWT	Bit switch (momentary)	Controlled bit device
ALT	Bit switch (alternate)	Controlled bit device
SET	Bit switch (set)	Controlled bit device
RST	Bit switch (reset)	Controlled bit device
WRT	Data write switch (fixed value)	Written word device
SCR	Screen switching switch	Switching destination In the case of screen No.: K*** In the case of memory: BACK In the case of PLC:[K***]

"*" indicates a numeric value.

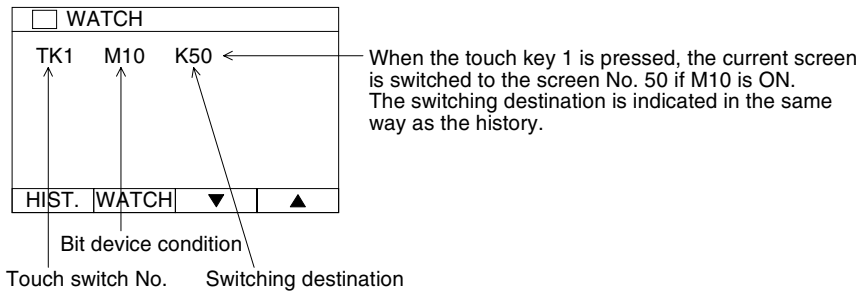
[History window]



2) MONITOR

The setting for screen switching valid on the currently displayed user screen is displayed.
The touch switch No., bit device condition and switching destination are displayed in this order.

[Monitor list window]



12.5 COMMUNICATION MONITOR screen (for checking the communication status of the COM ports)

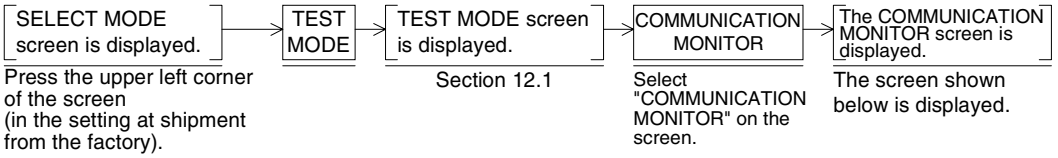
On this screen, the communication status of each COM port built in the GOT is displayed.

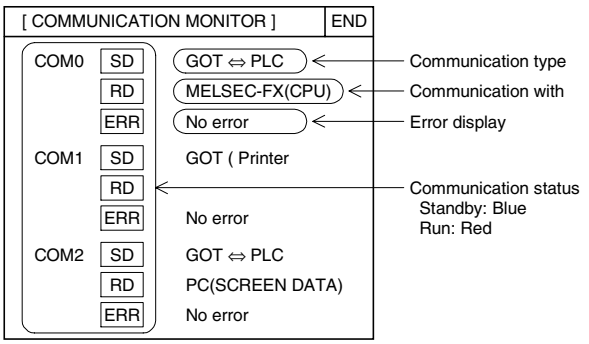
12.5.1 Applicable GOT and OS version

Model name	Availability (OS version)	Model name	Availability (OS version)
F940WGOT	✓	F930GOT-K	×
F940GOT	✓ (Ver6.00~)	F920GOT-K	×
F930GOT	×	Handy GOT	✓ (Ver6.00~)

✓: Setting is enabled. If applicable versions are limited, they are written inside ( ).
×: Setting is disabled.

Basic operations





In the case of F940GOT or F943GOT, only COM0 and COM1 are displayed.

1) Communication status
The communication status of each communication connector is displayed.
In the F940GOT and Handy GOT, only the COM0 and COM1 are displayed.
SD: Sending status
RD: Receiving status
ERR: Communication error status
In the case of color type GOT
In each of SR, RD and ERR, "red" indicates that communication is being executed, and "blue" indicates the standby status.
In ERR, "blue" indicates normal operation, and "red" indicates error.
In the case of black-and-white type GOT
In each of SR, RD and ERR, "white" indicates that communication is being executed, and "black" indicates the standby status.

2) Communication type
The equipment name executing communication is displayed.

Display item		Connection target
Japanese	English	
GOT<=>PLC	GOT<=>PLC	When the GOT is connected to the PLC
パソコン<=>PLC	PC<=>PLC	When the GOT is connected to the personal computer (PC) The contents shown on the left are displayed only when the FX/A/QnA/Q Series PLC is connected to the CPU. The type of application software (screen creation software or ladder software) in the PC is not distinguished.
GOT<=>パソコン	GOT<=>PC	When the GOT is connected to the PC When the PLC manufactured by another company or equipment not equipped with the 2PIF function is connected Only the screen creation software is available in the PC.
バーコード<=>PLC	BARCODE<=>PLC	When the bar code reader is connected
GOT<=>プリンタ	GOT<=>PRINTER	When the printer is connected If the hard copy function is set, the display shown on the left will be provided when the start trigger turns ON.
GOT<=>汎用機器	GOT<=>GENERAL-PUPOSE UNITS	When the GOT is connected to micro computer board (general-purpose equipment)
GOT<=>GOT	GOT<=>GOT	When two or more GOT units are connected
機能なし	NO FUNCTION	When there is no target equipment

3) Communication counterpart
The model name executing communication is displayed.

Display item		Connection target
Japanese	English	
MELSEC-FX(CPU)	MELSEC-FX(CPU)	When the GOT is connected to the FX Series PLC (CPU connection)
MELSEC-A(CPU)	MELSEC-A(CPU)	When the GOT is connected to the A Series PLC (CPU connection)
MELSEC-A,QnA(CPU)	MELSEC-A,QnA(CPU)	When the GOT is connected to the A/QnA Series PLC (CPU connection)
MELSEC-Q,QnA(CPU)	MELSEC-Q,QnA(CPU)	When the GOT is connected to the QnA/Q Series PLC (CPU connection)
MELSEC-A(LINK)	MELSEC-A(LINK)	When the GOT is connected to the A Series PLC (computer link connection)
SYSMAC C(LINK)	SYSMAC C(LINK)	When the GOT is connected to the C Series PLC by Omron (computer link connection)
FLEX-PC N(CPU)	FLEX-PC N(CPU)	When the GOT is connected to the FLEX-PC N Series PLC by Fuji Electric (CPU connection)
FLEX-PC N(LINK)	FLEX-PC N(LINK)	When the GOT is connected to the FLEX-PC N Series PLC by Fuji Electric (computer link connection)
AB SLC500(CPU)	AB SLC500(CPU)	When the GOT is connected to the SLC500 Series PLC by Allen-Bradley (CPU connection)
AB MicroLogix(CPU)	AB MicroLogix(CPU)	When the GOT is connected to the MicroLogix Series PLC by Allen-Bradley (CPU connection)
YASKAWA CP9200SH(CPU)	YASKAWA CP9200SH(CPU)	When the GOT is connected to the machine controller by Yasukawa Electric (CPU connection)
SIEMENS S7-200(CPU)	SIEMENS S7-200(CPU)	When the GOT is connected to the S7-200 Series PLC by Siemens AG (CPU connection)
SIEMENS S7-300(CPU)	SIEMENS S7-300(CPU)	When the GOT is connected to the S7-300/400 Series PLC by Siemens AG (CPU connection)
MELSEC-FX(2PIF)	MELSEC-FX(2PIF)	When the GOT is connected to the personal computer, or when two or more GOT units are connected (The contents shown on the left are displayed only when the GOT is connected to the FX Series PLC via CPU connection. The screen creation software and ladder software are not distinguished.)
MELSEC-A(2PIF)	MELSEC-A(2PIF)	When the GOT is connected to the personal computer, or when two or more GOT units are connected (The contents shown on the left are displayed only when the GOT is connected to the A Series PLC via CPU connection. The screen creation software and ladder software are not distinguished.)
MELSEC-A,QnA(2PIF)	MELSEC-A,QnA(2PIF)	When the GOT is connected to the personal computer, or when two or more GOT units are connected (The contents shown on the left are displayed only when the GOT is connected to the A/QnA Series PLC via CPU connection. The screen creation software and ladder software are not distinguished.)

Display item		Connection target
Japanese	English	
MELSEC-Q,QnA(2PIF)	MELSEC-Q,QnA(2PIF)	When the GOT is connected to the personal computer, or when two or more GOT units are connected (The contents shown on the left are displayed only when the GOT is connected to the QnA/Q Series PLC via CPU connection. The screen creation software and ladder software are not distinguished.)
PC(SCREEN DATA)	PC(SCREEN DATA)	When the GOT is connected to the personal computer (The contents shown on the left are displayed when the GOT is connected to another company's PLC or when the GOT is connected to the equipment not equipped with the 2PIF function. Only the screen creation software is available in the personal computer.)
FX-GM	FX-GM	When the GOT is connected to the FX-10/20GM, FX2N-10/20GM or E-20GM (CPU connection)
FREQROL	FREQROL	When the GOT is connected to the A500/E500/S500 Series inverter (CPU connection)
MEW FP(CPU)	MEW FP(CPU)	When the GOT is connected to the FP0/FP2SH Series PLC by Matsushita Electric Works (CPU connection)

4) Error display
When an error occurs, the contents are displayed.

Display item		Connection target
Japanese	**English**	
オーバーランエラー	OVERRUNERR	The receive data is sent continuously with a short interval. (Let the baud rate (communication speed) be equivalent between the GOT and counterpart equipment.
フレーミングエラー	FRAMINGERR	The communication frame is inconsistent. Confirm the communication settings such as data length, stop bit and baud rate.
パリティエラー	PARITYERR	The parity check condition is inconsistent. Let the parity check condition (odd or even) be consistent.
伝文エラー	TEXTERR	The sum data is inconsistent. Or the contents of the receive data are not consistent with the send command from the GOT. Let the communication settings and contents of data be consistent between the GOT and counterpart equipment. (If NAK is received while the GOT is connected to the micro computer board, a text error occurs.)
タイムアウトエラー	TIMEERR	Though receiving is started, receive data is not sent. When the GOT is connected to the micro computer board, confirm the terminator, CR, wiring, etc.
制御ラインエラー	LINEERR	The control line is not operating correctly. Confirm the operation and wiring of the control line.
コマンドエラー	COMMANDERR	A command contained in the receive data is not consistent with the send command from the GOT.
エラーなし	NO ERROR	Communication is executed normally.

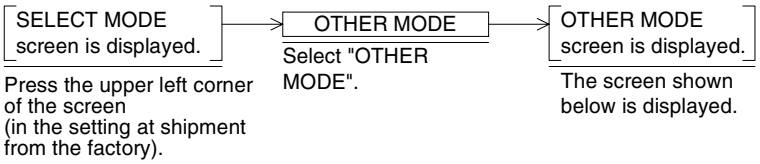
13. Other Mode

This chapter explains the other mode offering the time switch (time action), printer output, entry code registration, etc.
For "SET-UP MODE", refer to Section 8.4.

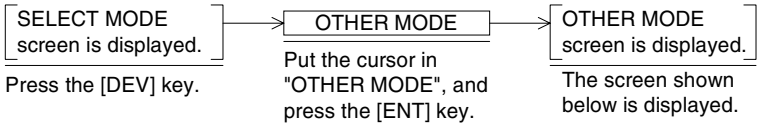
13.1 Outline

Basic operations

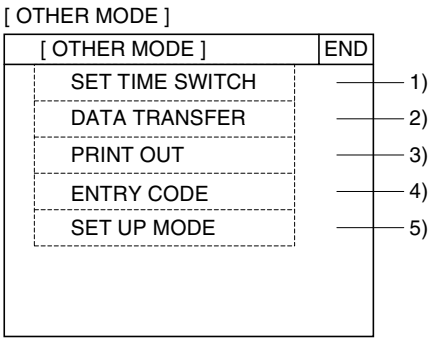
[Operation using touch switches]



[Operation using the keypad (only in the F920GOT-K)]



The other mode offers the following functions.

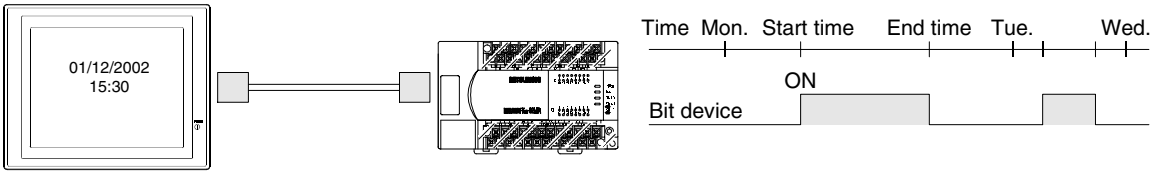


1) SET TIME SWITCH (Time Action)
(Refer to Section 13.2.)
Keeps a specified bit device ON during the specified period of time.
2) DATA TRANSFER
(Refer to Section 13.3.)
Transfers data such as user screens, alarm history and sampling data between the screen creation software.
3) PRINT OUT (Refer to Section 13.4.)
Prints out the sampling data and alarm history.
4) ENTRY CODE (Refer to Section 13.5.)
Allows to register the entry code for protecting sequence programs of the PLC.
5) SET-UP MODE (Refer to Section 8.4.)
Allows to set the environment required to operate the GOT such as system language and connected PLC.

13.2 SET TIME SWITCH screen (Time Action) - Screen No. 1014

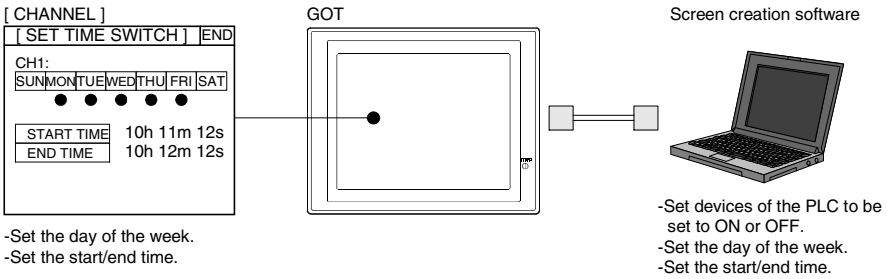
This section explains the function of the time switch (displayed as "Time Action" in the GT Designer2) built in the GOT.

13.2.1 Outline



When specified day of the week and time have come, up to 8 consecutive bit devices are set to ON, and remain ON for specified period of time.

13.2.2 Setting the time switch



1) Setting in the screen creation software (GT Designer2)
   Bit devices, the day of the week and time to set the bit devices to ON, and the day of the week and time to set the bit devices to OFF can be set.

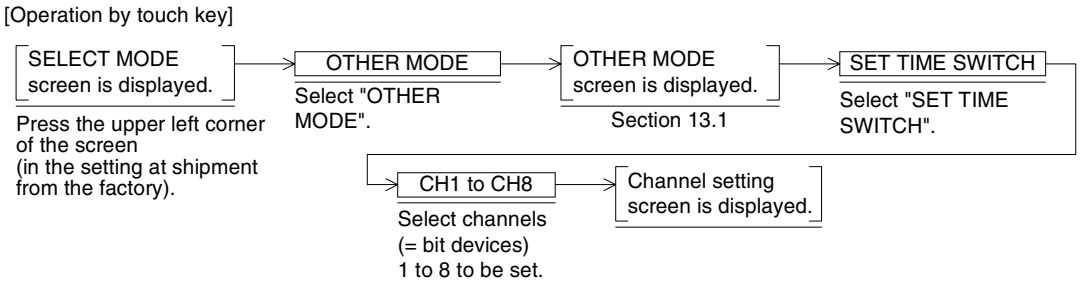
   Operating procedure: Tool menu

   Select [Common]-[Time Action].

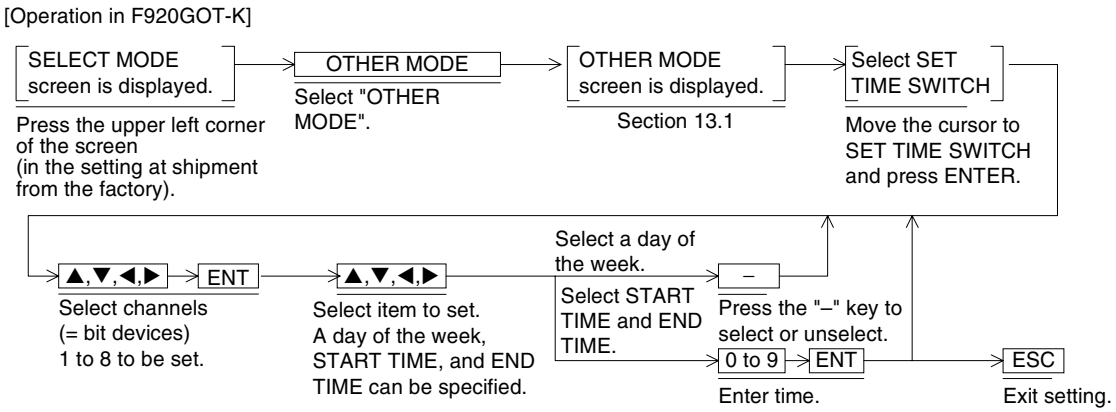
2) Setting on the system screen of the GOT
   By manipulating the screen of the GOT, the day of the week and time to set the bit devices to ON, and the day of the week and time to set the bit devices to OFF can be set.
   For assignment of bit devices to be set to ON/OFF, the setting is required in the screen creation software.

Basic operations

[Operation using touch switches]



[Operation using the keypad (only in the F920GOT-K)]

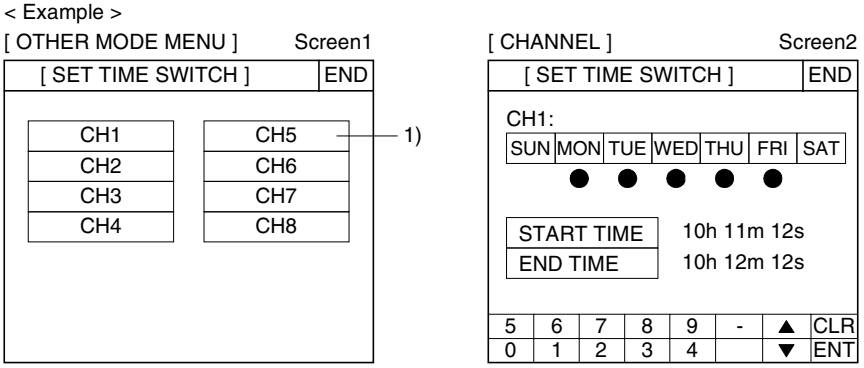


SUN/MON/TUE/WED/THU/FRI/SAT:
Press a desired character string indicating a day of the week to select it. When selected, "●" is added. Press a selected character string to cancel the selection.

START TIME:
Set the time at which bit devices are set to ON.
During the period from "START TIME" to "END TIME", selected bit devices remain ON on selected days of the week.

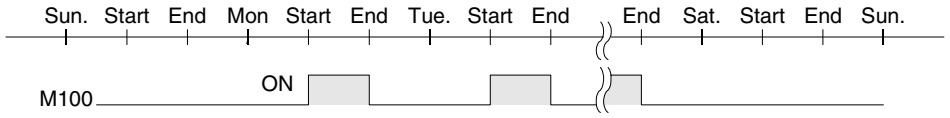
END TIME:
Set the time at which bit devices are set to OFF. If the time set here is earlier than the time set in "START TIME", selected bit devices remain ON until "END TIME" of the next day.
(Even if the day of the week corresponding to the next day is not selected, selected bit devices remain ON until "END TIME".)

< Example >



1) Specifying channels
   Set the time switch in the unit of 8 channels.

In the setting on the screen 2, the CH1 (M100) remains ON from 15:12:10 to 15:15:12 on Monday through Friday.

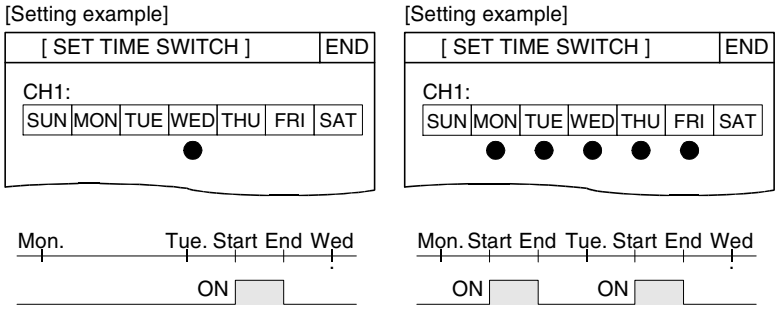


13.2.3 Cautions on use

1) Time range enabling ON/OFF

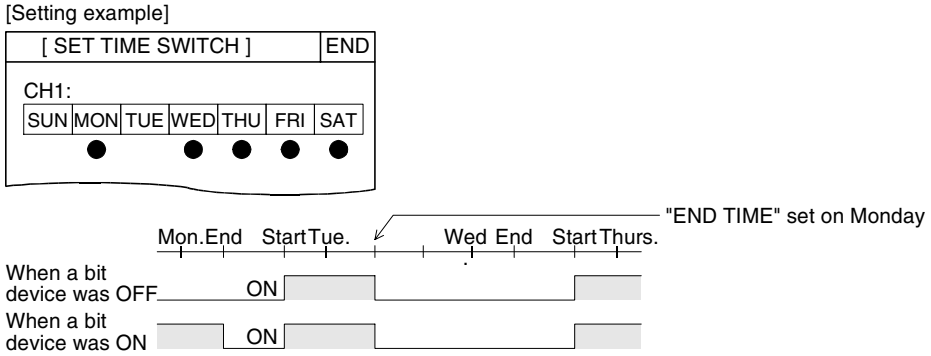
a) In the case of "START TIME < END TIME" (23:59:50 or earlier)

The ON/OFF control is enabled from "START TIME" (00:00:00 to 23:59:59) to "END TIME" (after "START TIME" to 23:59:59) in the unit of day (day of the week). The setting cannot be extended to the next day.



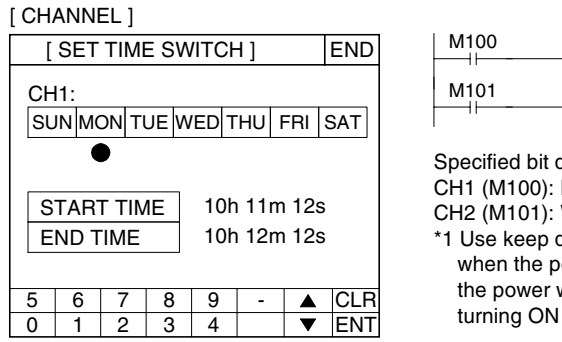
b) In the case of "START TIME > END TIME"

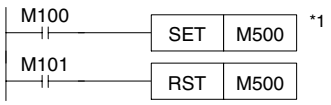
When "END TIME" is earlier (smaller) than "START TIME" in the unit of day (day of the week), specified bit devices are set to ON from OFF at "START TIME", but remains ON also on the next day.



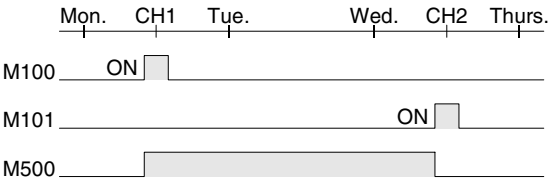
c) When controlling the ON/OFF status of bit devices extending to the next day (beyond 24:00:00)

Use two channels as one pair for the time action function, and control the ON/OFF status using a sequence program.





Specified bit device: M100
CH1 (M100): Monday, 12:00 ~ 12:01
CH2 (M101): Wednesday, 12:00 ~ 12:01
*1 Use keep devices so that the flag can be set to ON again when the power of the GOT is turned on again even after the power was turned off during the period of time from turning ON of the CH1 to turning ON of the CH2.



2) Specifying bit devices

Bit devices of the PLC to be set to ON/OFF using the time switch function can be set only using the screen creation software.

Make sure to transfer the screen data using the screen creation software, then set "START TIME" and "END TIME" in the GOT.

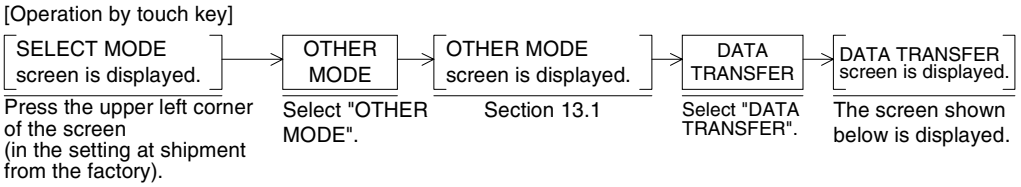
13.3 DATA TRANSFER screen (for transferring the screen data between the GOT and the personal computer)

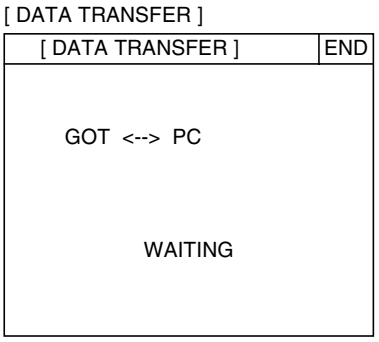
On this screen, transfer (read and write) the screen data, sampling data and alarm history between the GOT and the personal computer for creating screens.

Basic operations

When the screen data is transferred from the personal computer to the GOT, the screen in the GOT is switched as shown below without regard to the screen displayed at that time. When transfer is finished, the screen which was displayed before start of transfer is displayed again. However, if the RS-232C port to be used for transfer of the screen data from the personal computer is set for connection of PLC, printer or bar code reader, the screen data can be transferred only when the DATA TRANSFER screen is displayed by the operation shown below.

[Operation using touch switches]



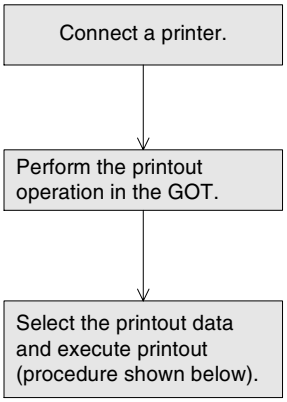


13.3.1 Caution on use

1) Data transfer during sampling
   When executing data transfer during sampling, pay attention to the following:
   PC → GOT
   Sampling under execution is aborted.
   However, the data acquired so far by sampling is saved.
   PC ← GOT
   Sampling is continued, and the data acquired by sampling is saved.

13.4 PRINT OUT screen

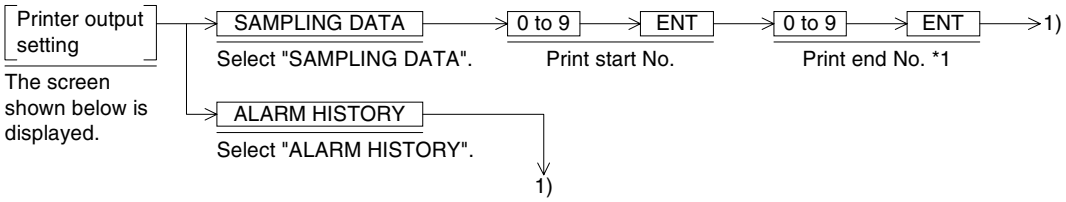
On this screen, print out the sampling data and alarm history.
Because the communication settings can be executed for the printer, various printers equipped with the RS-232C interface are available.
Execute the communication settings for the printer using the system screen "SET-UP MODE" in the GOT or using the screen creation software.



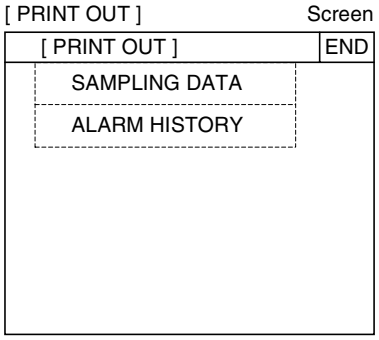
Connect the GOT to the printer, and turn on the power of them.

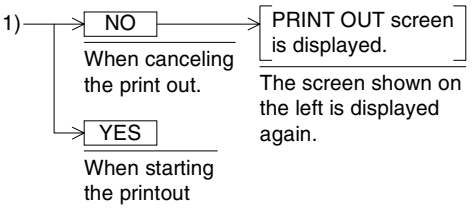
Manipulate the GOT, and select "OTHER MODE"-"PRINT OUT".
Select the data to be printed.
Sampling data and alarm history data can be printed.
For the sampling data, the print range can be set.

Basic operations



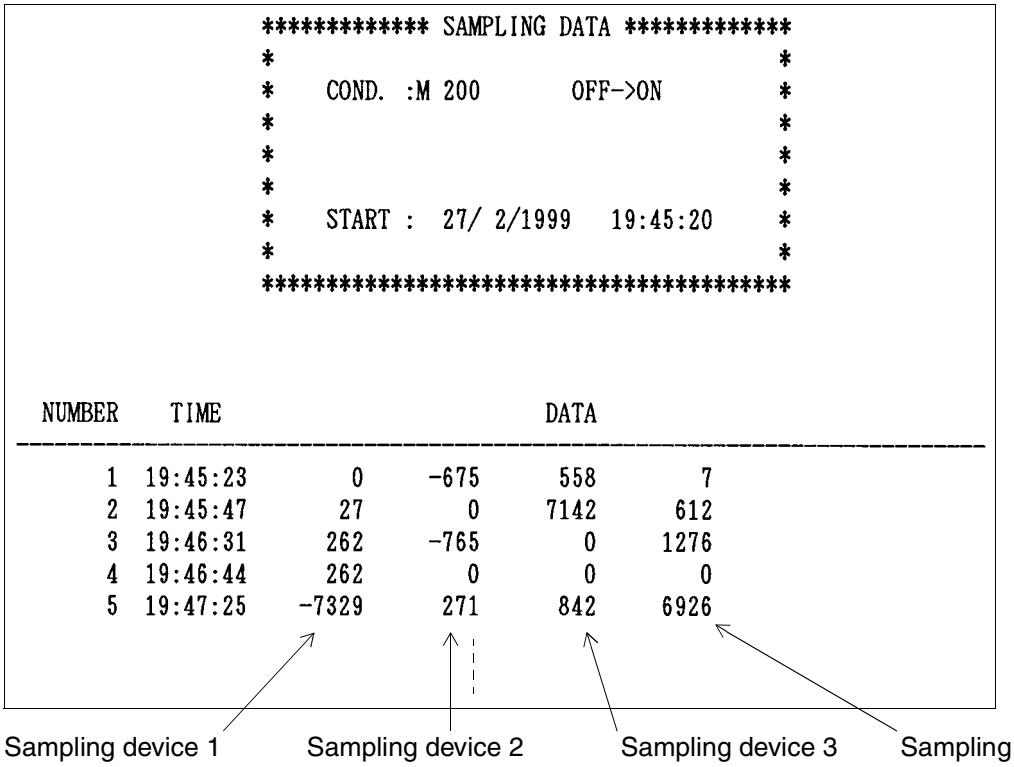
*1 To the number of times of end, do not input a value larger than the numeric value shown on the screen.
(The numeric value displayed on the screen indicates the total number of sampling data.)



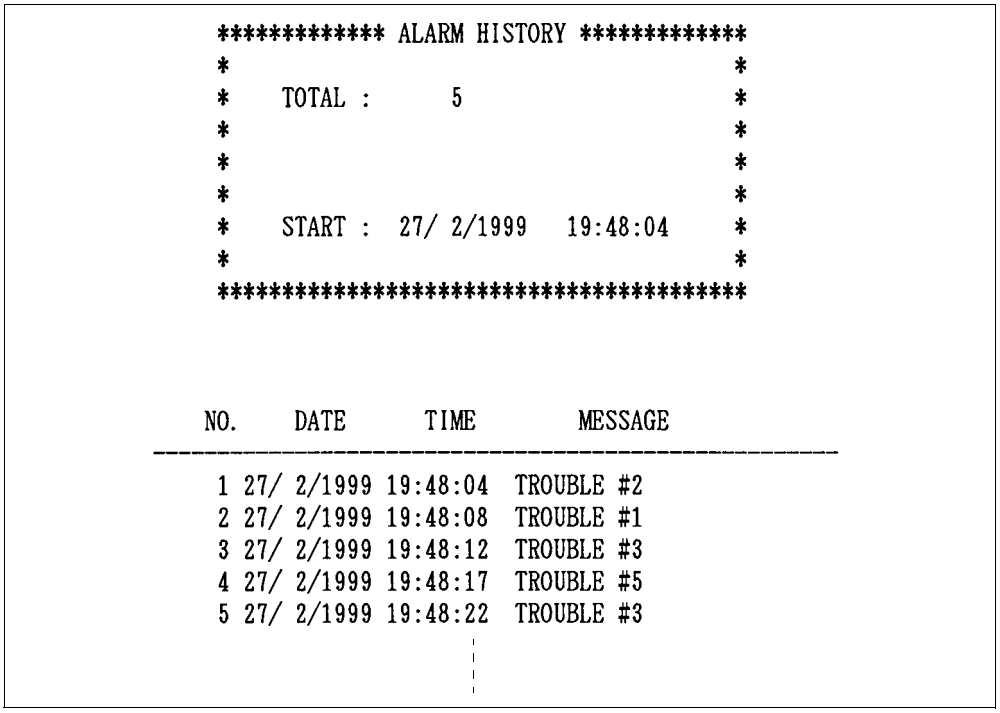


13.4.1 Examples of printout

Sampling data



Alarm history



13.5 ENTRY CODE screen

Register the entry code (password) to the PLC to inhibit changes to the set value of times and counters in the user screen mode and monitor mode. However, current values can be changed. (In the F920GOT-K, only "UNLOCK" is enabled.)

ENTER

Register the entry code to the PLC. The entry code set here is shared in other peripheral equipment.
Input a hexadecimal entry code in 8 digits (in the FX Series PLC) or 6 digits (in the A Series PLC).
Entry code: ********
Registered entry code becomes valid when the power of the GOT is set to OFF once, then set to ON again.

DELETE

Delete the existing entry code. For deletion, however, the existing entry code should be input correctly. If a wrong entry code is input, deletion is disabled.

UNLOCK

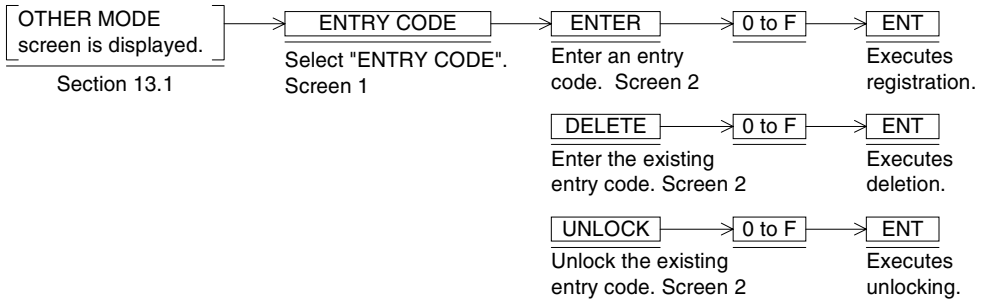
Temporarily unlock the entry code. (The entry code remains saved in the PLC.)

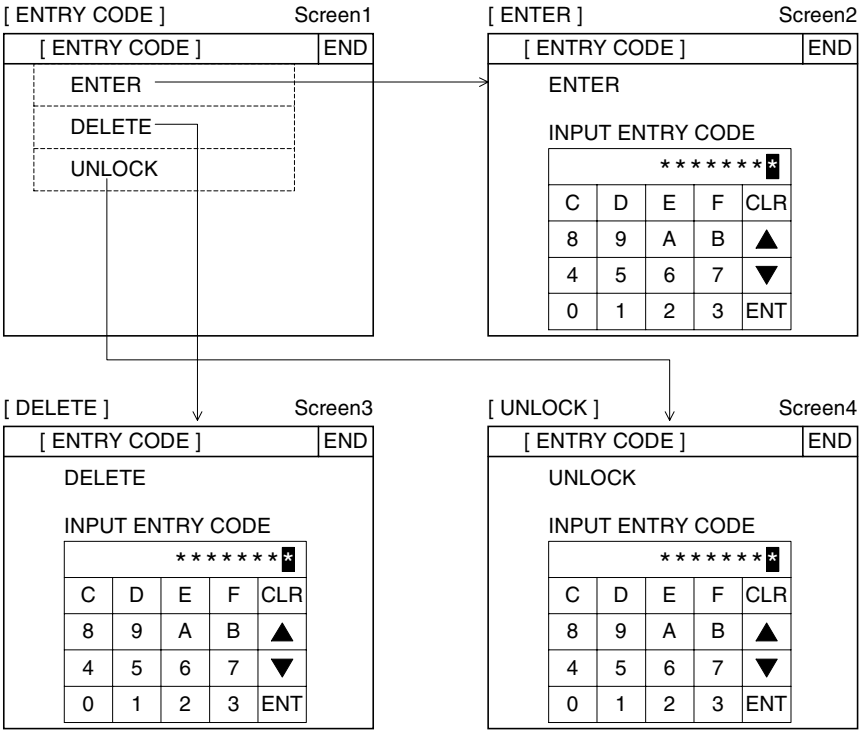
The unlocked status continues until the power of the GOT is set to OFF.

Caution

If the entry code is unknown, all-clear the memory of the PLC from a peripheral equipment of the PLC. By this operation, however, all data including programs in the PLC are cleared completely. It is recommended not to forget the entry code.

Basic operations




[ENTRY CODE]
Screen1
[ENTRY CODE]
END
ENTER
DELETE
UNLOCK
[ENTER]
Screen2
[ENTRY CODE]
END
ENTER
INPUT ENTRY CODE
****
C D E F CLR
8 9 A B ▲
4 5 6 7 ▼
0 1 2 3 ENT
[DELETE]
Screen3
[ENTRY CODE]
END
DELETE
INPUT ENTRY CODE
****
C D E F CLR
8 9 A B ▲
4 5 6 7 ▼
0 1 2 3 ENT
[UNLOCK]
Screen4
[ENTRY CODE]
END
UNLOCK
INPUT ENTRY CODE
****
C D E F CLR
8 9 A B ▲
4 5 6 7 ▼
0 1 2 3 ENT

13.5.1 Caution on use

1) When using the entry code
   - When registering the entry code, leave a memo to prevent forgetting the entry code.
   - If the entry code is forgot or unknown, all-clear the memory of the PLC from a peripheral equipment of the PLC.
     By this operation, however, all data including programs in the PLC are cleared completely. It is recommended not to forget the entry code.

2) When F920GOT-K is used
   Only the protection release can be done.

3) Condition of key word change
   The key word is written in the memory as a parameter of the PLC.
   Only when the memory cassette can be written, it is possible to change.

   1. When FX PLC is used

PLC status		While PLC is stopped				While PLC is running			
Memory cassette attached to PLC	Memory type	RAM	EEPROM		EPROM	RAM	EEPROM		EPROM
	Write-protect switch status	–	OFF	ON	–	–	OFF	ON	–
Entry code	Present	✓	✓	×*1	×*1	✓	×*3	×*1	×*1
	Not present	×*2				×*2			

*2 The error message "WRITE IS PROHIBITED" is displayed.
*3 The error message "PLC IS RUNNING." is displayed.

   2. When A PLC is used

PLC status		While PLC is stopped		While PLC is running	
Memory type		RAM	ROM	RAM	ROM
Entry code	Present	✓	×*1	✓	×*1
	Not present	×*2		×*2	

*1 The error message "WRITE IS PROHIBITED" is displayed.

MEMO

14. FAQ (Frequently Asked Questions)

When suspecting malfunction while a user screen is displayed in the GOT, refer to the following FAQ items for troubleshooting.

Q1. The ten-key board cannot be displayed in the Touch Switch, Numeric Input or ASCII Input object.

Q2. The alarm history or alarm list cannot be displayed.

Q3. The display order of ASCII Display or ASCII Input is reversed.

Q4. The key window is not displayed.

Q5. The key window cannot be deleted.

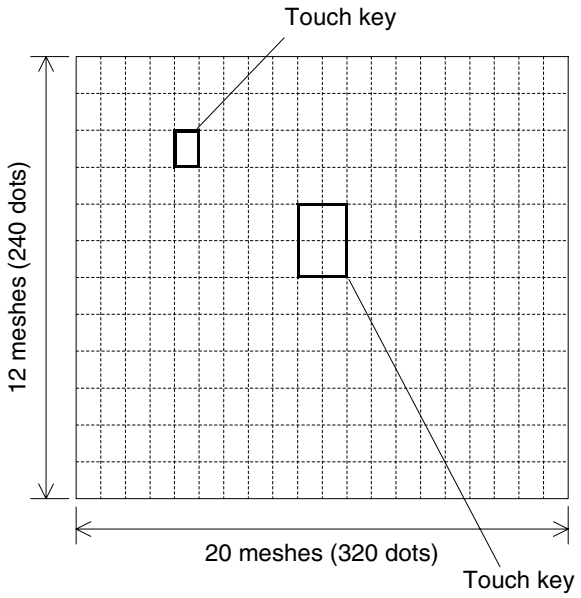
Q1.

The ten-key board cannot be displayed in the Touch Switch, Numeric Input or ASCII Input object.

A

When the display size of the Touch Switch, Numeric Input or ASCII Input object is small, such an object may not function even if it is pressed.
If an object does not function, change its display position or display size.

Display size (example in the F940GOT)

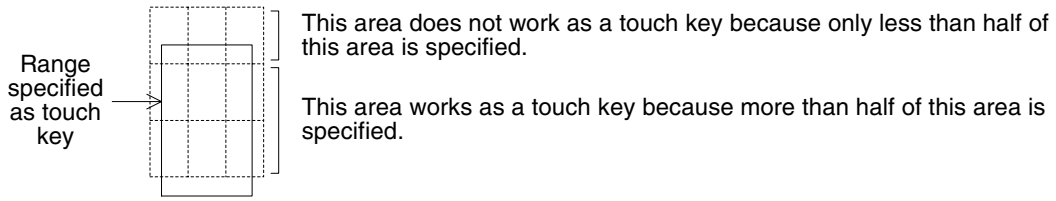


The entire screen is divided into frames as shown in the figure above, and each frame is called "mesh". Specify the touch key area by specifying meshes.

Each GOT has the following matrix configuration. (One mesh corresponds to 16 × 20 dots.)
F930GOT and F930GOT-K: 15 horizontal × 4 vertical
F940GOT: 20 horizontal × 12 vertical
F940WGOT: 30 horizontal × 12 vertical (14 vertical only in the bottom line.)

Broken lines are not displayed on the screen.

The touch key size can be set in the unit of dot. When a half or more area of a mesh is specified as a touch key, the mesh is recognized as the touch key.



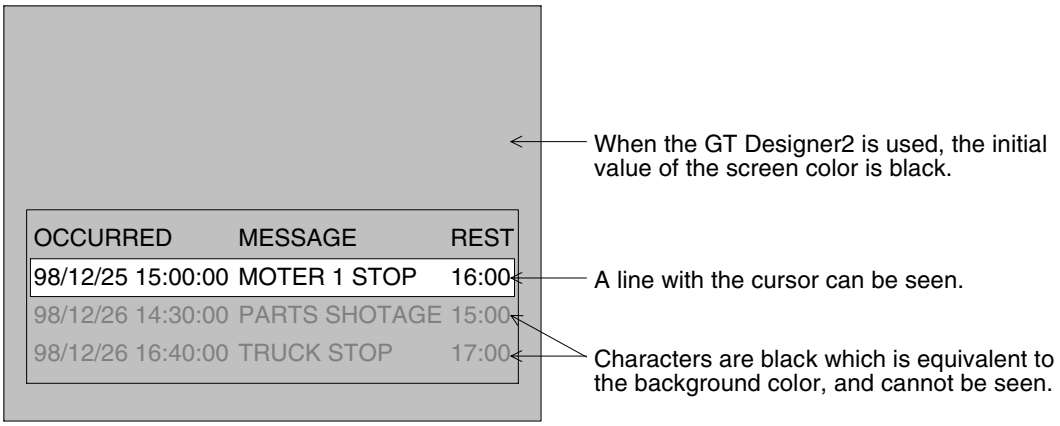
Q2.

The alarm history or alarm list cannot be displayed.

A

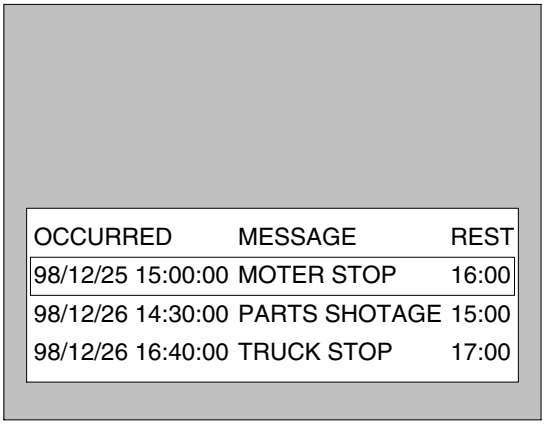
In the two-color (black-and-white) type GOT such as the F940GOT, when each of the "Alarm History" and "Alarm List" objects is drawn, characters are displayed in black (white in a line with the cursor).
And because the initial value of the screen color is black in the GT Designer2, only one line with the cursor can be seen actually on the screen.

[Display example in the F940GOT-LWD]



When using these objects, set the background to white by setting the plate color.

[When the plate color is set to white]



In the case of F920GOT-K

When displaying "date + time" in the F920GOT-K, select the combination of "month/day" and "hour:minute". In the F920GOT-K, the date and time display is valid only when it is connected to a FXPLC having the calendar function.

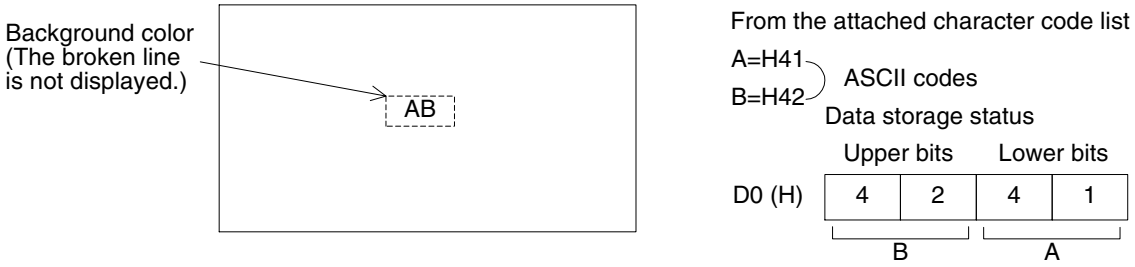
Q3.

The display order of ASCII Display or ASCII Input is reversed.

A

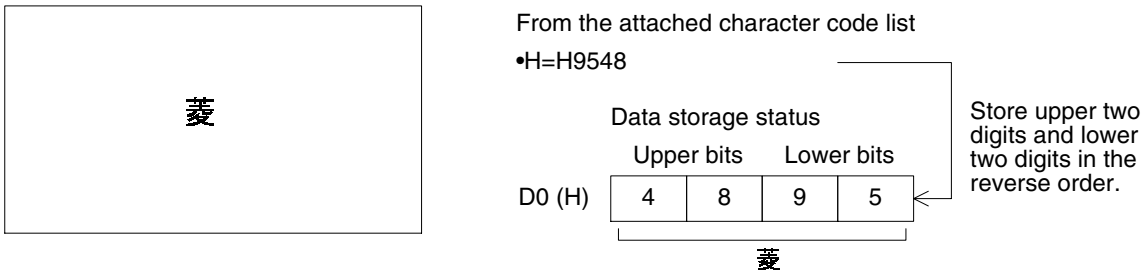
ASCII codes are stored in word devices of the PLC. The stored data is displayed from the lower 8 bits as shown below.

Example 1: When displaying two half-width (ASCII code) characters ... Specify D0 (one word).

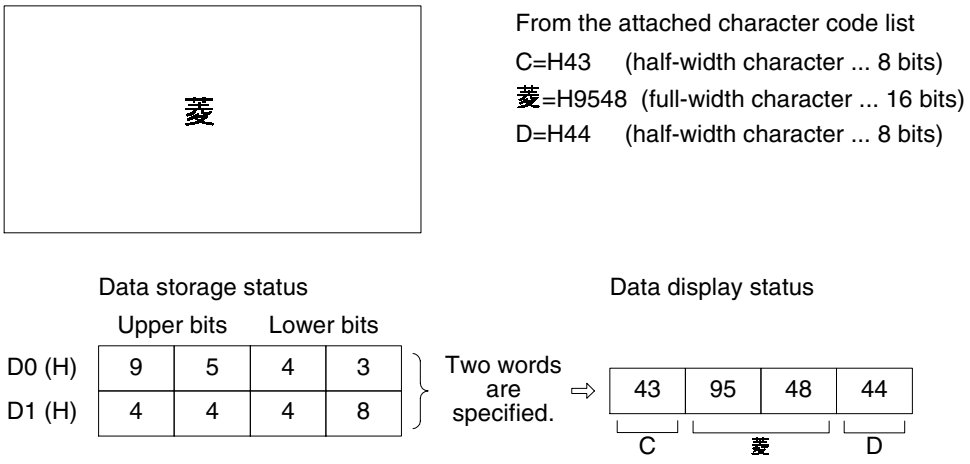


Specify the head of the display from the lower digits.

Example 2: When displaying one full-width character (shift JIS code) ... Specify D0 (one word).



Example 3: When displaying one full-width character and two half-width characters
Specify D0 and D1 (two words).



When the character code is set to H0 (for both a full-width character and half-width character), a following character is not displayed on the screen.
When inputting space in a character string, store "H8140" for full-width space or "H20" for half-width space to a specified word device.

When the GOT is connected to the PLC via computer link connection
Characters are displayed in the order of upper 8 bits and lower 8 bits from the left of the screen.
By adding "16" to the actual station No., characters can be displayed in the order of lower 8 bits and upper 8 bits from the left of the screen.

When the GOT is connected to the S7-200/300/400 Series by Siemens AG
Characters are displayed in the order of upper 8 bits and lower 8 bits from the left of the screen.

Q4.

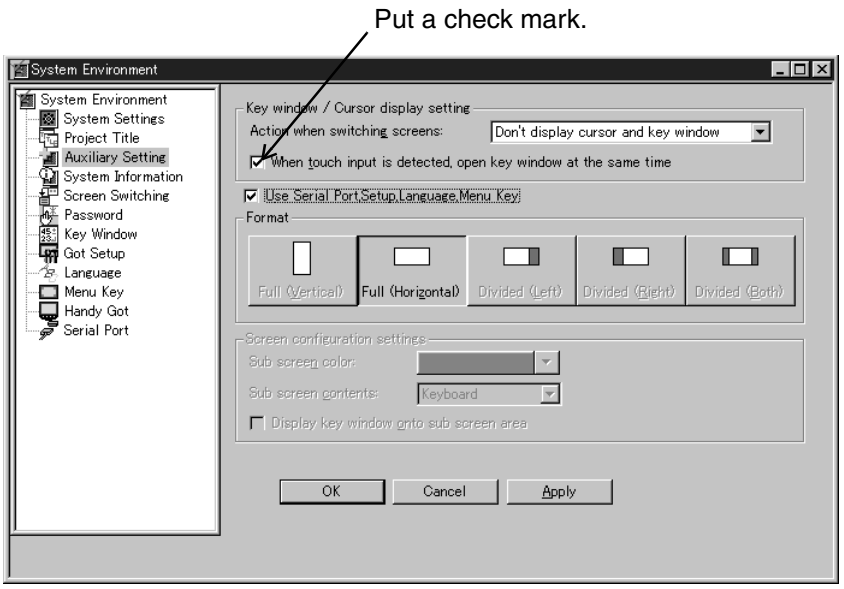
The key window is not displayed.

A

When the numeric value input key window is not displayed even when a data change switch, Numeric Input object or ASCII Input object is pressed, the following causes are estimated. Confirm the contents of each setting.

1) The touch switch does not function due to the display size or display position of the object.
   → Refer to Q1.
2) The Numerical Display or ASCII Display object is used.
   → Use the Numerical Input or ASCII Input object.
3) The GOT is not set so that the key window is opened as soon as the touch input is given.
   → Select [System Environment]-[Auxiliary Setting]-[Key Window/Cursor Display Setting] in the GT Designer2, then put a check mark to "When touch input is detected, open key window at the same time."

Display in the GT Designer2



Q5.

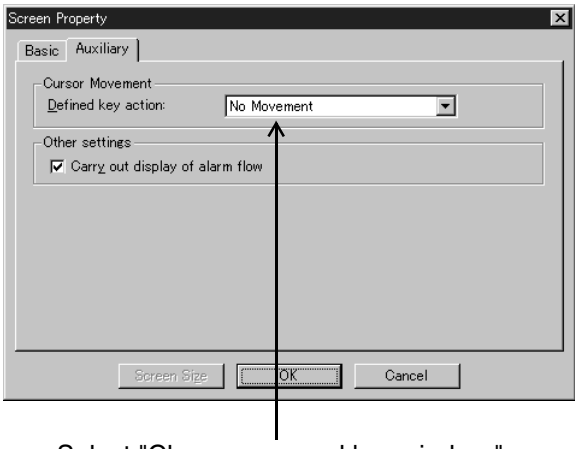
The key window cannot be deleted.

A

When deleting the key window displayed by a data change switch, Numeric Input object or ASCII Input object, the setting to delete the key window by the ENTER key operation is required.

→ Select [Screen]-[Properties]-[Auxiliary]-[Cursor Movement] in the GT Designer2, then select "Clear cursor and key window."

Display in the GT Designer2



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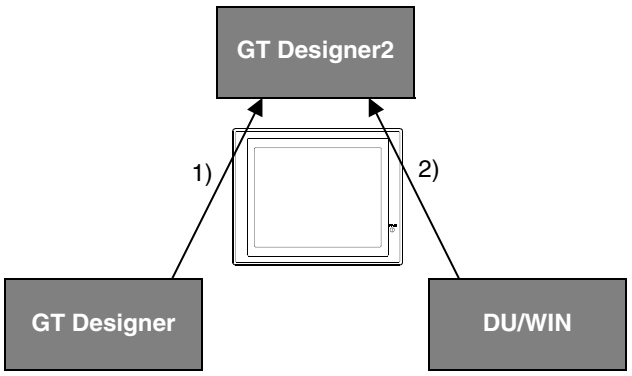
15. Diversion of Screen Data

This chapter explains the compatibility of the existing screen data created using the GT Designer or DU/WIN when it is read by the GT Designer2.

15.1 Outline

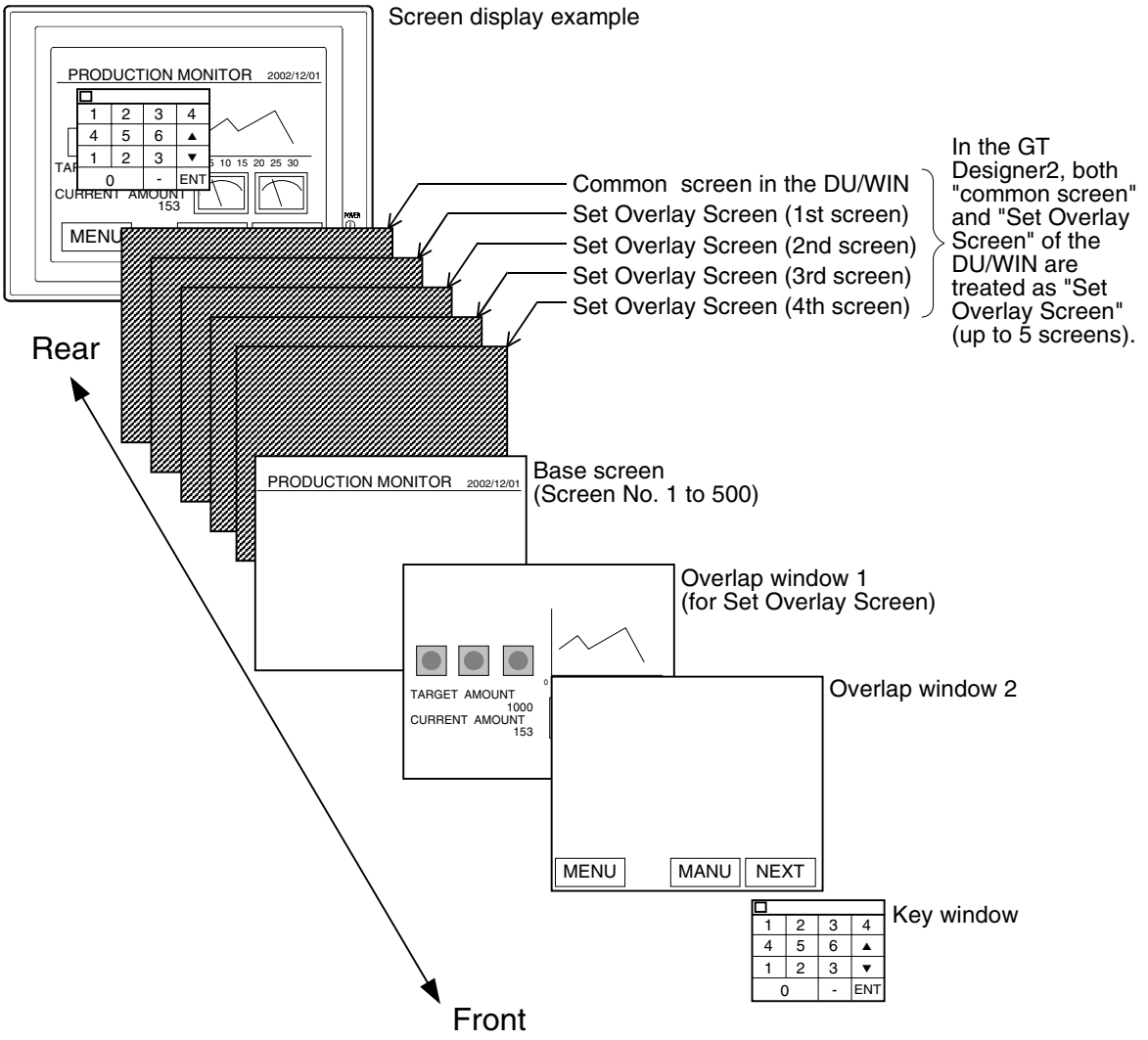
The GT Designer2 is equipped with objects of both the GT Designer and DU/WIN. Accordingly, the GT Designer2 can read both the screen data created using the GT Designer and the screen data created using the DU/WIN.
At this time, the following differences are generated in any data other than objects.



1) GT Designer R GT Designer2
   - "Detailed Explanation" in "Screen Title Setting" is not read.
   - "Detailed Explanation" in "Project Title Setting" is not read.
   - "Creator" in "Project Title Setting" is not read.
2) DU/WIN R GT Designer2
   - "COMMENT" displayed on the SET TIME SWITCH screen (system screen) of the GOT is not read.
   - The common screen of the DU/WIN is read as the screen No. 500, and treated as if it is under the "Set Overlay Screen" function on another screen.

When the screen data created using the GT Designer2 is read by the GT Designer or DU/WIN, only objects and set items provided in the GT Designer or DU/WIN are read. For transfer to the GOT, the screen data may have to be edited.

15.2 Each screen display order



Display screen No.

Screen creation software		Screen No. range
Data created using GT Designer2		Nos. 1 to 500
Data created using GT Designer		Nos. 1 to 500
Data created using DU/WIN	Data read and edited by GT Designer	Nos. 1 to 500 Common screen (No. 501)
	Data read and edited by GT Designer	Nos. 0 to 499 Common screen (No. 500)

15.3 Comparison of names

15.3.1 Display functions

GT Designer2	Name in GT Designer	Name in FX-PCS-DU/WIN-E
Numerical Display	Numerical Display	Number
Numerical Input	Numerical Input	
ASCII Display	ASCII Display	Ascii
ASCII Input	ASCII Input	
Comment Display (word comment)	Comment Display (case word)	Library Text
Comment Display (bit comment)	Comment Display (case bit)	Text Lamp
Parts Display (Bit Parts)	Part Display	Library Image
Parts Display (Word Parts)		Image Lamp
Bit Lamp	Lamp	Label Lamp
Date Display	Clock	Date
Time Display		Time
Panel meter	Panel meter	Panel Meter
Circle Graph	--	Circle Graph
Trend Graph	Trend Graph	Trend Graph
Line Graph	Line Graph	Line Graph
Statistics Bar Graph	Statistics Chart	Proportional Bar Graph
Statistics Pie Graph		Proportional Pie Graph
Bar Graph	Bar Graph	Bar Graph
Line	Line	Line
Rectangle	Rectangle	Box
Circle	Circle	Circle
Import Image	Bit map Data	Image
Text	Text	Text

In the DU/WIN, the setting of transparent/non-transparent is available for "Number", "Text" and a part of the drawing display functions.
In the GT Designer2, the background color is fixed to "transparent".

15.3.2 Key operations

GT Designer2		Name in GT Designer		Name in FX-PCS-DU/WIN-E
Bit Switch (Momentary)		Operation (Momentary)		Switch (Momentary)
Bit Switch (Alternate)		Operation (Alternate)		Switch (Alternate)
Bit Switch (Set)		Operation (Set)		Switch (Set)
Bit Switch (Reset)		Operation (Reset)		Switch (Reset)
Screen Switching		Base Switching		Change Screen
Data set switch	Indirect + Fixed value	Word	Indirect + Fixed value	Data +1
	Indirect + Fixed value		Indirect + Fixed value	Data -1
	Fixed value		Fixed value	Write constant

15.3.3 Others

GT Designer2	Name or item in GT Designer	Name or item in FX-PCS-DU/WIN-E
Compatible with F940WGOT (with division display)	Compatible with F940WGOT (with division display)	Compatible with F940WGOT (without division display)
Compatible with multi-CPU system	Compatible with multi-CPU system	--
Connection to N Series by Fuji Electric	--	Connection to N Series by Fuji Electric
--	--	Device Comment
External character registration	--	External character registration
Buzzer	--	Buzzer
Data change	--	Data setting
Recipe (One trigger and two or more data transfer devices can be set.)	Recipe (One trigger and two or more data transfer devices can be set.)	Data file transfer (Two or more triggers and one data transfer device can be set.)
Screen Switching	Base Switching	Screen Switching
Part	Part	Image Library
Comment	Comment	Text Library
System Information	System Information	Control Device
Password	Password	Entry Code

16. Appendix

16.1 System screen list and screen No.

When displaying the system screen by switching from the user screen, specify the screen No. shown below to the switching destination in the screen switching setting or to the device for screen switching.

✓: There is a screen --: Screen none

Screen No.	Item on SELECT MODE	System screen name (function name) [ ] F920GOT-K display		F920GOT-K	F930GOT F930GOT-K	F940GOT F940WGOT Handy GOT	Reference chapter
1001	HPP MODE	DEVICE MONITOR		✓	✓	✓	9
1002		ACTIVE STATE MONITOR		--	✓	✓	
1003		PLC DIAGNOSIS		--	✓	✓	
1004	SAMPLING MODE	SET CONDITION		--	--	✓	10
1005		DISPLAY LIST		--	--	✓	
1006		DISPLAY GRAPH		--	--	✓	
1007		CLEAR DATA		--	--	✓	
1008	ALARM MODE	DISPLAY STATUS		--	--	✓	11
1009		ALARM HISTORY		--	--	✓	
1010		ALARM FREQUENCY		--	--	✓	
1011		CLEAR HISTORY		--	--	✓	
1012	TEST MODE	DATA BANK		--	--	✓	12
1013	OTHER MODE	SET-UP MODE	SET CLOCK	✓	✓	✓	8
1014			SET BACKLIGHT	✓	✓	✓	13
1015		SET TIME SWITCH		✓	✓	✓	8
1016		ENTRY CODE		✓	✓	✓	13
1017		PRINT OUT	SAMPLING DATA	--	--	✓	
1018			ALARM HISTORY	--	✓	✓	
1019		SET-UP MODE	BUZZER	✓	✓	✓	8
1020			SERIAL PORT	✓*1	✓	✓	
1021			LCD CONTRAST	✓	✓	✓	
1022	HPP MODE	PROGRAM LIST		--	--	✓	9
1023		PARAMETER		--	--	✓	
1024		LIST MONITOR		--	--	✓	
1025		BFM MONITOR		--	--	✓	
1026	TEST MODE	USER SCREEN		✓	✓	✓	12
1027	OTHER MODE	SET-UP MODE	LANGUAGE	✓	✓	✓	8
1028			PLC TYPE	✓	✓	✓	
1029			OPENING SCREEN	✓	✓	✓	
1030			MAIN MENU CALL	✓	✓	✓	
1031	--	Reserved by manufacturer		--	--	--	--
1032	--			--	--	--	--

Screen No.	Item on SELECT MODE	System screen name (function name) [ ] F920GOT-K display		F920GOT-K	F930GOT F930GOT-K	F940GOT F940WGOT Handy GOT	Reference chapter
--	OTHER MODE	SET-UP MODE	CLEAR USER DATA*2	✓	✓	✓	8
--			AUXILIARY SET-TING*2	--	✓	✓	
--		DATA TRANSFER*2		✓	✓	✓	13
--	TEST MODE	COMMUNICATION MONITOR*2		--	--	✓	12

*1 Only the F920GOT-K (24V type)

*2 Screen switching from user screen by specifying the screen No. is disabled.

16.2 Key Code List

Key code list used in each object (Unavailable in the F920GOT-K.)

a) Key codes used in the numeric input function

Key code (H)	Application
0008*1	Deletes the numeric value entered by one digit from the bottom (BS).
000D	Writes a numeric value to the write destination device or moves the cursor.
002D	"–"
002E	"•"
0030 to 0046	Enters a numeric value 0 to 9, A to F.
0082	Moves the cursor upward.
0083	Moves the cursor downward.
0088	Deletes a numeric value being input.

*1 Applicable to F930GOT or F933GOT: Ver. 4.00 or later; F930GOT-K-E: from the first product; F940GOT: Ver. 6.00 or later; F940WGOT: Ver. 1.00 or later
It is valid only when "002E (decimal point input key)" exists on the display screen.

b) Key codes used in the ASCII code input function

Key code (H)	Application
0008	Deletes the numeric value entered by one digit from the bottom (BS).
000D	Writes a numeric value to the write destination device or moves the cursor.
ASCII code, shift JIS Chinese character code	Inputs a character.
0082	Moves the cursor upward.
0083	Moves the cursor downward.
0088	Deletes a character being input.

*1 Applicable to F930GOT or F933GOT: Ver. 4.00 or later; F930GOT-K: from the first product; F940GOT: Ver. 6.00 or later; F940WGOT: Ver. 1.00 or later

c) Key codes used in the alarm list display function

Key code (H)	Application
FFB0	Displays the cursor.
FFB1	Hides the cursor.
FFB2	Moves the cursor upward.
FFB3	Moves the cursor downward.
FFB8	Displays the detailed information.

d) Key codes used in the alarm history display function

Key code (H)	Application
FFB0	Displays the cursor.
FFB1	Hides the cursor.
FFB2	Moves the cursor upward.
FFB3	Moves the cursor downward.
FFB6	Deletes the displayed contents of selected alarms.
FFB7	Deletes the displayed contents of all alarms.
FFB8	Displays the detailed information.
FFBB	Resets a specified device.

e) Key codes used in the entry code input function

Key code (H)	Application
FF68	Displays the entry code input screen.
FF69	Resets the entry code.

f) Key code used in the buzzer sound setting function

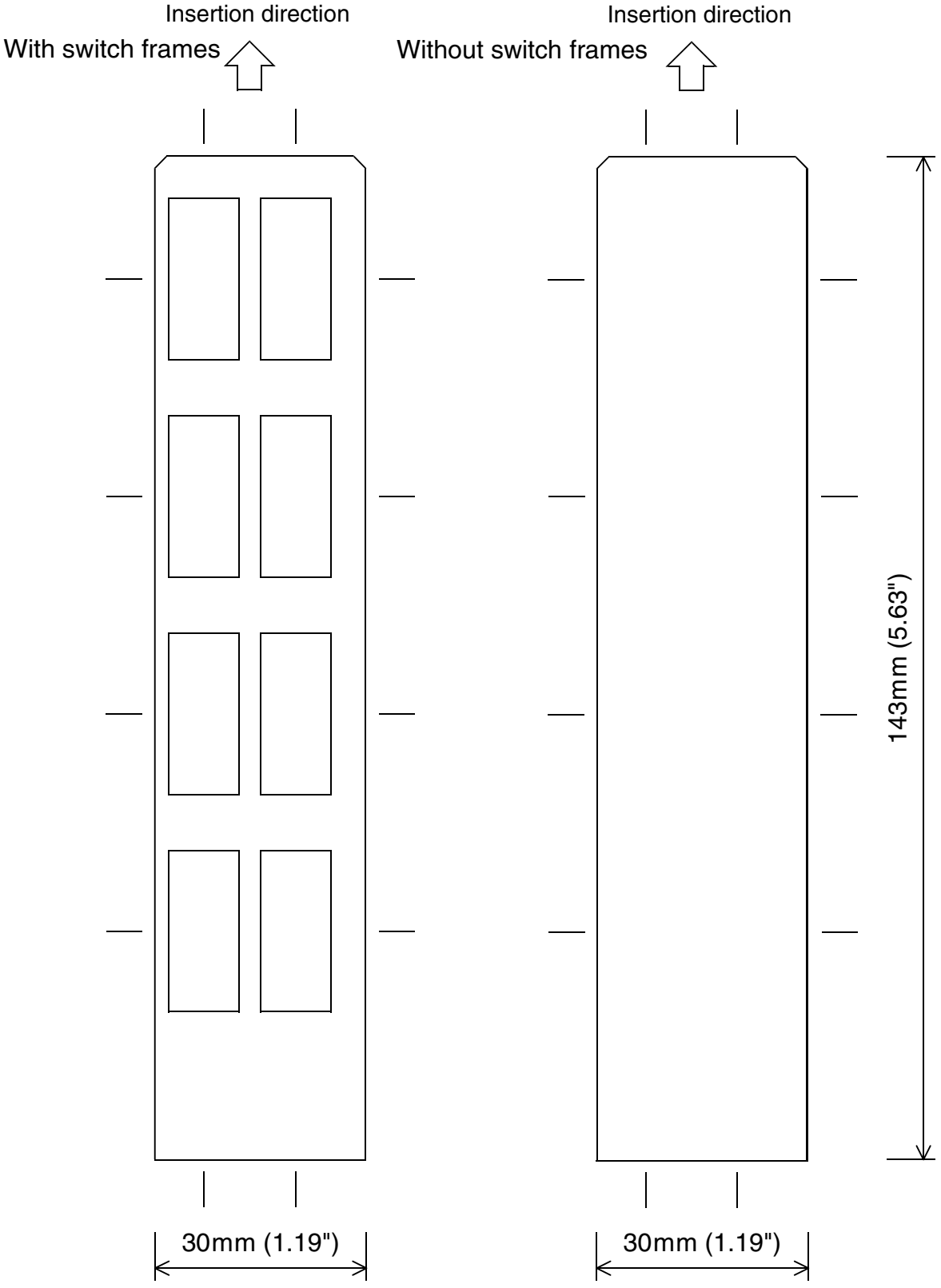
Key code (H)	Application
FFFE	Does not issue the buzzer sound of touch keys.

g) Key codes used in the hard copy function

Key code (H)	Application
FF17	Starts hard copy.
FF18	Finishes hard copy.

16.3 Key sheet cardboard (F930GOT-K)

Copy the following cardboard to an OHP sheet offered as accessory.



B5 size paper (actual dimensions)

For the details of each dimension, refer to the installation manual delivered together with the product.

16.4 GOT-F900 function (version) upgrade history

This paragraph describes the contents of OS version upgrade in the GOT-F900 Series.
The line under the OS version indicates the time of version upgrade in the format [year, month].

F920GOT-K (5 V power type)

OS version	Description
Ver. 1.00	• Initial version
Ver. 1.20 [2003.Mar]	• The key pressing information function for the keypad is added.

F920GOT-K (24 V power type)

OS version	Description
Ver. 1.20	• Initial version

F930GOT-K

OS version	Description
Ver. 4.60	• Initial version
Ver. 4.62 [2003. Jun]	[Connectable equipment are added] • The function to connect the SYSMACα, CPM and CJ1 Series by Omron is added. • The function to connect the FPΣ Series by Matsushita Electric Works is added.
Ver. 4.90 [2003. Aug]	• The memory board F9GT-40FMB is supported. • The key pressing information function for the keypad is added. • The function to set to ON the backlight by pressing a key on the keypad is added.

F930GOT

OS version	Description
Ver. 1.00	• Initial version
Ver2.00	• The function to connect the QnA Series PLC is added. • The function to connect the bar code reader is added.@The status monitoring function is added. • Touch switches and lamp images are extended. • The compatibility with the SLC500 Series by Allen-Bradley Co., Inc. is added. • Rectangle and circle paint-over patterns are added. • The Alarm History key code is added.
Ver2.10	• The function to connect two or more GOT units is added when the micro computer board is connected.
Ver2.20	• The function to connect the Q Series PLC is added.
Ver3.00	• The function to connect the S7-300/400 Series PLC by Siemens AG is added. • The function to connect the machine controller by Yasukawa Electric is added.
Ver4.00	• The function to connect the MicroLogix 1000/1200/1500 Series PLC by Allen-Bradley Co., Inc. is added. • The function to connect the CS1 Series PLC (CS1G/H-CPU□□-V1) by Omron is added (connection type: link connection). • The function to input numeric values including the decimal point is added. • The security (screen protection) function is enhanced.
Ver4.10	• The function to connect the MELSEC positioning unit FX-10/20GM, FX2N-10/20GM and E-20GM is added. • The function to connect the FREQROL-A500/E500/S500 Series inverter is added. • The function to connect the FP0/FP2SH Series PLC by Matsushita Electric Works is added. • In the Alarm List, the function to display alarms in the order of occurrence is added. • The high-quality font display function is added. • The 6 x 8 dot size font display function is added. • The key window customizing function is supported.
Ver4.30	• The function to connect the Q00JCPU, Q00CPU and Q01CPU is added. • The function to connect the Q multi-CPU system (Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU and Q25HCPU) is added. • The function to connect the S7-200 Series PLC by Siemens AG is added. • The recipe data upload function by the screen creation software is added. • The vertical display is supported.
Ver4.40	• The buzzer function by GB is added. • The ON/OFF processing to bit devices when the PLC by Omron is connected are changed.
Ver4.50	• The key code (FFFE) to mute the buzzer sound of touch switches is added. • Communication commands available when the micro computer board is connected are added. Command to write many points in the unit of bit Command to fill the internal data (D, M)
Ver. 4.62 [2003. Jun]	[Connectable equipment are added] • The function to connect the SYSMACα, CPM and CJ1 Series by Omron is added. • The function to connect the FPΣ Series by Matsushita Electric Works is added.

F940GOT and Handy GOT

OS version	Description
Ver1.00	• Initial version
Ver1.10	• The QnA Series PLC (A Series mode) is supported. • The GT Designer is supported.
Ver2.00	• The SLC500 Series PLC by Allen-Bradley Co., Inc. is supported. • The function to connect the bar code reader is added.
Ver3.00	• The function to connect the QnA Series PLC is added. • The hard copy function is added. • The setting of the key window initial display position is added. • The alarm history key code is added.
Ver3.10	• The status monitoring function is added. • The key window customizing function is supported. • Touch switches and lamp images are extended. • Rectangle and circle paint-over patterns are added.
Ver4.00	• The function to connect the FX1S/1N Series PLC is added.
Ver4.10	• The function to connect the Q Series PLC is added.
Ver5.00	• The function to connect the S7-300/400 Series PLC by Siemens AG is added. • The function to connect the machine controller by Yasukawa Electric is added.
Ver6.00	• The function to connect the MicroLogix 1000/1200/1500 Series PLC by Allen-Bradley Co., Inc. is added. • The function to connect the CS1 Series PLC (CS1G/H-CPU((-V1) by Omron is added (connection type: link connection). • The function to input numeric values including the decimal point is added. • The security (screen protection) function is enhanced.
Ver6.10	• The function to connect the MELSEC positioning unit FX10/20GM, FX2N-10/20GM and E-20GM is added. • The function to connect the FREQROL-A500/E500/S500 Series inverter is added. • The function to connect the FP0/FP2SH Series PLC by Matsushita Electric Works is added. • In the Alarm List, the function to display alarms in the order of occurrence is added. • The high-quality font display function is added. • The 6 x 8 dot size font display function is added.
Ver6.30	• The function to connect the Q00JCPU, Q00CPU and Q01CPU is added. • The function to connect the Q multi-CPU system (Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU and Q25HCPU) is added. • The function to connect the S7-200 Series PLC by Siemens AG is added. • The recipe data upload function by the screen creation software is added. • Instructions in the HPP mode are added. (FNC156 ABS, FNC169 HOUR, FNC176 RD3A, FNC177 WR3A and FNC180 EXTR) • In the buffer memory monitoring function, target models are added (FX2N-8AD and FX2N-2LC).
Ver6.40	• The memory cassette F9GT-40FMB is supported (except in the Handy GOT). • The buzzer function by GB is added. • The ON/OFF processing to bit devices when the PLC by Omron is connected are changed.

OS version	Description
Ver6.50	• The key code (FFFE) to mute the buzzer sound of touch switches is added. • Communication commands available when the micro computer board is connected are added. Command to write many points in the unit of bit Command to fill the internal data (D, M)
Ver. 6.62 [2003. Jun]	[Connectable equipment are added] • The function to connect the SYSMACα, CPM and CJ1 Series by Omron is added. • The function to connect the FPΣ Series by Matsushita Electric Works is added.

F940WGOT

OS version	Description
Ver. 1.00	• Initial version
Ver1.10	• The function to connect the MELSEC positioning unit FX10/20GM, FX2N-10/20GM and E-20GM is added. • The function to connect the FREQROL-A500/E500/S500 Series inverter is added. • The function to connect the FP0/FP2SH Series PLC by Matsushita Electric Works is added. • In the Alarm List, the function to display alarms in the order of occurrence is added. • The high-quality font display function is added. • The 6 x 8 dot size font display function is added.
Ver1.30	• The function to connect the Q00JCPU, Q00CPU and Q01CPU is added. • The function to connect the Q multi-CPU system (Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU and Q25HCPU) is added. • The function to connect the S7-200 Series PLC by Siemens AG is added. • The recipe data upload function by the screen creation software is added. • Instructions in the HPP mode are added. (FNC156 ABS, FNC169 HOUR, FNC176 RD3A, FNC177 WR3A and FNC180 EXTR) • In the buffer memory monitoring function, target models are added (FX2N-8AD and FX2N-2LC).
Ver1.40	• The memory cassette F9GT-40FMB is supported. • The buzzer function by GB is added. • The ON/OFF processing to bit devices when the PLC by Omron is connected are changed.
Ver1.50	• The key code (FFFE) to mute the buzzer sound of touch switches is added. • Communication commands available when the micro computer board is connected are added. Command to write many points in the unit of bit Command to fill the internal data (D, M)
Ver. 1.62 [2003. Jun]	[Connectable equipment are added] • The function to connect the SYSMACα, CPM and CJ1 Series by Omron is added. • The function to connect the FPΣ Series by Matsushita Electric Works is added.

16.5 Screen Creation Software Version Corresponding to GOT-F900 Series

Japanese version

GOT-F900 Series	SW□D5C-GTD2-J Version	SW□D5C-GOTR-PACK Version	FX-PCS-DU/WIN Version
F940WGOT	SW1-A (1.00A)	SW5-F (5.05F)	2.50
F940GOT	SW1-A (1.00A)	SW1-A	2.00
F943GOT	SW1-A (1.00A)	SW1-A	2.00
F930GOT-K	SW1-A (1.00A)	SW5-26C (5.26C)	–
F930GOT	SW1-A (1.00A)	SW1-H	2.20
F933GOT	SW1-A (1.00A)	SW1-H	2.20
F920GOT-K (5V)	SW1-A (1.00A)	SW5-26C (5.26C)	2.70
F920GOT-K (24V)	SW1-C (1.02C)	–	–
F940 Handy GOT	SW1-A (1.00A)	SW1-D	2.10
F940 Handy GOT (RH model)	SW1-A (1.00A)	SW5-F (5.05F)	2.50
F943 Handy GOT	SW1-A (1.00A)	SW1-D	2.10
F943 Handy GOT (RH model)	SW1-A (1.00A)	SW5-F (5.05F)	2.50
ET-900	SW1-A (1.00A)	SW1-D	2.00

- "□" of the "SW□D5C-GOTRE-PACKE" and "SW□DC-GTD2-E" indicates a number.

English version

GOT-F900 Series	SW□D5C-GTD2-E	SW□D5C-GOTRE-PACK Version	FX-PCS-DU/WIN-E Version
F940WGOT	SW1-C (1.02C)	SW5-F (5.05F)	2.50
F940GOT	SW1-C (1.02C)	SW1-E	2.00
F930GOT-K	SW1-C (1.02C)	SW5-26C (5.26C)	2.70
F930GOT	SW1-C (1.02C)	SW1-H	2.30
F920GOT-K (5V)	SW1-C (1.02C)	SW5-26C (5.26C)	2.70
F920GOT-K (24V)	SW1-C (1.02C)	–	–
F940 Handy GOT	SW1-C (1.02C)	SW1-D	2.10
F940 Handy GOT (RH model)	SW1-C (1.02C)	SW5-F (5.05F)	2.50
F943 Handy GOT	SW1-C (1.02C)	SW1-D	2.10
F943 Handy GOT (RH model)	SW1-C (1.02C)	SW5-F (5.05F)	2.50

- "□" of the "SW□D5C-GOTRE-PACKE" and "SW□DC-GTD2-E" indicates a number.

16.6 Screen Creation Software Corresponding to Each Connected Equipment

Products in Japanese

Connected equipment (abbreviation)	SW□D5C-GTD2-J Version	SW□D5C-GOTR-PACK Version	FX-PCS-DU/WIN Version
Mitsubishi			
FXCPU direct connection	SW1-A (1.00A)	SW1-A	2.00
ACPU direct connection			
A computer link			
QnACPU direct connection	SW1-A (1.00A)	SW2-A	2.30
QnA computer link			
QCPU direct connection	SW1-A (1.00A)	SW4-F	2.40
Q computer link			
QCPU direct connection (multi CPU system)	SW1-A (1.00A)	SW5-P (5.13P)	–
Q computer link (multi CPU system)			
GM direct connection (FX positioning unit)	SW1-A (1.00A)	SW5-K (5.09K)	2.50
INV direct connection (inverter)			
Other companies			
Microcomputer connection (general-purpose communication)	SW1-A (1.00A)	SW1-A	2.00
SYSMAC C by Omron	SW1-A (1.00A)	SW1-A	
FLEX-PC N by Fuji Electric	SW1-A (1.00A)	--(Not applicable)	
CP9200SH by Yasukawa Electric	SW1-A (1.00A)	SW4-F	--(Not applicable)
FP by Matsushita Electric Works	SW1-A (1.00A)	SW5-K (5.09K)	2.60
SLC500 by Allen-Bradley	SW1-A (1.00A)	SW1-H	2.30
MicroLogix by Allen-Bradley	SW1-A (1.00A)	SW5-F (5.05F)	2.50
SIMATIC S7-300 by Siemens AG	SW1-A (1.00A)	SW5-F (5.05F)	2.40
SIMATIC S7-200 by Siemens AG	SW1-A (1.00A)	SW5-P (5.13P)	2.60
Others			
Printer (with built-in RS-232C)	SW1-A (1.00A)	SW1-A	2.00
Bar code reader	SW1-A (1.00A)	SW1-H	2.20*1
CC-Link	SW1-A (1.00A)	SW5-P (5.13P)	2.40

- "□" of the "SW□D5C-GOTRE-PACKE" and "SW□DC-GTD2-E" indicates a number.

*1 The F930GOT is applicable in Version 2.30 and later.

Products in English

Connected equipment (abbreviation)	SW□D5C-GTD2-E	SW□D5C-GOTR-PACKE Version	FX-PCS-DU/WIN-E Version
Mitsubishi			
FXCPU direct connection	SW1-C (1.02C)	SW1-E	2.00
ACPU direct connection	SW1-C (1.02C)		
A computer link	SW1-C (1.02C)		
QnACPU direct connection	SW1-C (1.02C)	SW2-A	2.30
QnA computer link	SW1-C (1.02C)		
QCPU direct connection	SW1-C (1.02C)	SW4-F	2.40
Q computer link	SW1-C (1.02C)		
QCPU direct connection (multi CPU system)	SW1-C (1.02C)	SW5-P (5.13P)	–
Q computer link (multi CPU system)	SW1-C (1.02C)		
GM direct connection (FX positioning unit)	SW1-C (1.02C)	SW5-K (5.09K)	2.50
INV direct connection (inverter)	SW1-C (1.02C)		
Other companies			
Microcomputer connection (general-purpose communication)	SW1-C (1.02C)	SW1-E	2.00
SYSMAC C by Omron	SW1-C (1.02C)		
FLEX-PC N by Fuji Electric	SW1-C (1.02C)	Not applicable	
CP9200SH by Yasukawa Electric	SW1-C (1.02C)	SW4-F	–
FP by Matsushita Electric Works	SW1-C (1.02C)	SW5-K (5.09K)	2.60
SLC500 by Allen-Bradley	SW1-C (1.02C)	SW1-H	2.30
MicroLogix by Allen-Bradley	SW1-C (1.02C)	SW5-F (5.05F)	2.50
SIMATIC S7-300 by Siemens AG	SW1-C (1.02C)	SW5-F (5.05F)	2.40
SIMATIC S7-200 by Siemens AG	SW1-C (1.02C)	SW5-P (5.13P)	2.52
Others			
Printer (with built-in RS-232C)	SW1-C (1.02C)	SW1-E	2.00
Bar code reader	SW1-C (1.02C)	SW1-H	2.30

- "□" of the "SW□D5C-GOTRE-PACKE" and "SW□DC-GTD2-E" indicates a number.

16.7 Device names which can be monitored

This section explains the device range of the PLC which can be used in the GOT-F900.
The device range indicated in this section is the maximum value which can be set in the screen creation software.
Even in the same Series PLC units, the device specifications may be different in each model. In such a case, during reading, convert the device range indicated here into a device range actually available in the connected PLC. (For example, even in the same FX Series, the FX1N PLC has less devices compared with the FX2N PLC.)
The available device range and device names are different in each screen creation software.

16.7.1 Devices built in the GOT-F900

The devices shown below are those which are built in the GOT-F900.
Because these devices have nothing to do with the devices of the connected PLC or the memory of the connected micro computer board, they can be used without regard to the connected equipment.
In the status monitoring function, switch function and numeric value input function, these devices built in the GOT-F900 can be changed, and used for lamp display, time setting and switch condition.

Available screen creation software

GT Designer2 and GT Designer from the first version
DU/WIN from Version 2.50 and later

Allocation of devices for internal processing

Device name		Available range		Device number representation
Bit device	GB (GOT internal device)	GB0 to GB131	Not available except devices in table below	Decimal
		GB132 to GB255	Available	
		GB256 to GB1023	Available (excluding the F920GOT-K)	
Word device	GD (GOT internal device)	GD0 to GD99	Not available except devices in table below	Decimal
		GD100 to GD127	Available	
		GD128 to GD1023	Available (excluding the F920GOT-K)	

- GB 0 to GB 131 and GD 0 to GD 99 are used for the processing inside the GOT-F900.
  Note, however, that the devices with functions shown below are available for user use.

Device	Function
GD0	Display of current time (second)*2
GD1	Display of current time (minute)*2
GD2	Display of current time (hour)*2
GD3	Display of current time (day)*2
GD4	Display of current time (month)*2
GD5	Display of current time (year)*2
GD6	Display of current time (day of week)*2
GD7	Not to be used
GD8,GD9	Upper limit of input numerical value (32 bit)
GD10,GD11	Lower limit of input numerical value (32 bit)
GD12	Numerical value, Ascii input
GD13 to GD99	Not to be used
GD100 to GD1023	For user's use

*2 Which cannot be input or changed

Device	Function
GB0 to GB12	Not to be used
GB13	Communication error
GB14,GB15	Not to be used
GB16	Buzzer (Issued once) *1
GB17	Buzzer (Issued three times) *1
GB18	Buzzer (Issued continuously) *1
GB19 to 131	Not to be used
GB132 to GB1023	For user's use

*1 Buzzer is available in the following OS.
F940WGOT Ver. 1.40 or later
F940GOT Ver. 6.40 or later
F930GOT Ver. 4.40 or later
F930GOT-K Ver. 4.60 or later (From first product)
F920GOT-K Ver. 1.00 or later (From first product)
Handy GOT Ver. 6.40 or later

16.7.2 PLC by Mitsubishi

1) MELSEC-F FX Series

Device name				Setting range		Device number representation
				GT Designer (2)	DU/WIN	
Bit device	Input (X)			X000~X377	X000~X377	Octal
	Output (Y)			Y000~Y377	X000~X377	
	Auxiliary relay (M)			M0000~M3071	M0000~M3071	Decimal
	Special auxiliary relay (M)			M8000~M8255	M8000~M8255	
	State (S)			S0~S999	S0~S999	
	Timer contact (T)			T0~T255	T0~T255	
	Counter contact (C)			C000~C255	C0~C255	
	GOT internal bit register (GB) *1			GB132~GB1023	GB132~GB1023	
Word device	Timer (T)		Present value	T0~T255	T0~T255	
			Set value *2	TS0~TS255	–	
	Counter (C)	16 bits	Present value	C0~C199	C0~C199	
			Set value *2	CS0~CS199		
		32 bits	Present value	C200~C255	C200~C255	
			Set value *2	CS200~CS255		
	Data register (D) (Including file register*2)			D0~D7999	D0~D7999	
	File register (D)			D1000~D7999	D1000~D7999	
	Special data register (D)			D8000~D8255	D8000~D8255	
	Index register			Z *3	Z	
				V *3	V	
	GOT internal data register (GD) *1			GD100~GD1023	GD100~GD1023	

- In specifying word devices for the bar code reader, C200 to C255 and CS200 to CS255 are not available.

*1 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

*2 In data changes, the condition shown below is present.

Condition enabling data changes

While the GOT is connected to the FX Series PLC, 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	EEPROM		EPROM	RAM	EEPROM		EPROM
	Write-protect switch status	–	OFF	ON	–	–	OFF	ON	–
Entry code	Present	✓	✓	×*1	×*1	✓	×*3	×*1	×*1
	Not 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.

*2 When data of a set value (specified directly) of a timer or counter is tried to be changed, the error message "WRITE IS PROHIBITED." 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 "WRITE IS PROHIBITED." is displayed.

*3 The error message "THE OPERATION IS DISABLED BY ENTRY CODE." is displayed.

*4 The error message "PLC IS RUNNING." is displayed.

*3 Available only in the GT Designer2.

2) MELSEC-A Series (including motion controller)

Device name			Setting range		Device number representation
			GT Designer (2)	DU/WIN	
Bit device	Input (X)		X0~X1FFF	X0~X0FFF	Hexadecimal
	Output (Y)		Y0~Y1FFF	Y0~Y0FFF	
	Internal relay (M) *1		M0~M8191	M0~M8191	Decimal
	Latch relay (L) *1		L0~L8191	L0~L8191	
	Annunciator (F)		F0~F2047	F0~F2047	
	Link relay (B)		B0~B1FFF	B0~B1FFF	Hexadecimal
	Special internal relay (M)		M9000~M9255	M9000~M9255	Decimal
	Timer (T)	Contact	TT0~TT2047	T0~T2047	
		Coil	TC0~TC2047	–	
	Counter (C)	Contact	CT0~CT1023	C0~C1023	
		Coil	CC0~CC1023	–	
	GOT internal bit register (GB) *2		GB132~1023	GB132~1023	
Word device	Data register (D)		D0~D8191	D0~D8191	
	Special data register (D)		D9000~D9255	D9000~D9255	
	Link register (W)		W0~W1FFF	W0~W1FFF	Hexadecimal
	Timer (T)	Present value	TN0~TN2047	T0~T2047	Decimal
		Set value *3	TS0~TS2047	T0~T2047	
	Counter (C)	Present value	CN0~CN1023	C0~C1023	
		Set value *3	CS0~CS1023	C0~C1023	
	File register (R) *3		R0~R8191	R0~R8191	
	Accumulator (A)		A0~A1	–	
	Index register (Z, V) *4		Z0~Z6(Z0=Z)	Z	
			V0~V6(V0=V)	V	
	GOT internal data register (GD) *2		GD100~1023	GD100~1023	

*1 Latch relays (L) are treated as internal relays (M) in the GOT-F900.

*2 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

*3 In data changes, the condition shown below is present.

Condition enabling data changes

While the GOT is connected to the A Series PLC 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 type		RAM	ROM	RAM	ROM
Entry code	Present	✓	×*1	✓	×*1
	Not 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 "WRITE IS PROHIBITED." 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 "WRITE IS PROHIBITED." is displayed.

*2 The error message "THE OPERATION IS DISABLED BY ENTRY CODE." is displayed.

*4 In computer link connection, index registers (Z, V) cannot be monitored or written.

3) MELSEC-QnA/Q (Q mode) Series

Device name			Setting range		Device number representation
			GT Designer (2)	DU/WIN	
Bit device	Input (X)		X0~X1FFF	X0~X1FFF	Hexadecimal
	Output (Y)		Y0~Y1FFF	Y0~Y1FFF	
	Internal relay (M)		M0~M32767	M0~M32767	Decimal
	Latch relay (L)		L0~L32767	L0~L32767	
	Annunciator (F)		F0~F32767	F0~F32767	
	Link relay (B)		B0~B7FFF	B0~B7FFF	Hexadecimal
	Special link relay (SB)		SB0~SB7FF	SB0~SB7FF	
	Timer (T)	Contact	TT0~TT32767	T0~T32767	Decimal
		Coil	TC0~TC32767	–	
	Counter (C)	Contact	CT0~CT32767	C0~C32767	
		Coil	CC0~CC32767	–	
	Special relay (SM)		SM0~SM2047	SM0~SM2047	
	Retentive timer (ST)	Contact	SS0~SS32767	SS0~SS32767	
		Coil	SC0~SC32767	SC0~SC32767	
	Step relay (S)		S0~S32767	S0~S32767	
	GOT internal bit register (GB) *1		GB132~GB1023	GB132~GB1023	
Word device	Data register (D)		D0~D32767	D0~D32767	
	Special register (SD)		SD0~SD2047	SD0~SD2047	
	Link register (W)		W0~W7FFF	W0~W7FFF	Hexadecimal
	Special link register (SW)		SW0~SW7FF	SW0~SW7FF	
	Timer (T)	Present value	TN0~TN32767	T0~T32767	Decimal
		Set value	–	–	
	Counter (C)	Present value	CN0~CN32367	C0~C32367	
		Set value	–	–	
	Retentive timer (present value) (SN)		SN0~SN32767	SN0~SN32767	
	File register (R)		R0~R32767 *2	R0~R32767 *2	
	Index register (Z)		Z0~Z15	Z	
	GOT internal data register (GD) *1		GD100~GD1023	GD100~GD1023	

*1 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

*2 File registers in a block changed over by the RSET instruction are regarded as targets.

Restriction in set monitor in computer link for A Series

When a computer link unit for the A Series is attached to the QnA CPU and the GOT-F900 is connected to the unit, the set monitor range is equivalent to that in the AnA CPU, and the restriction shown in the table below is applied (by the restriction in computer link).

Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Word device	Timer (Present value)	TN0 to TN255	T0 to T255	Decimal
	Timer (Set value)	–	–	
	Counter (Present value)	CN0 to C255	CN0 to C255	
	Counter (Set value)	–	–	
	File register	–	–	

–: Monitor and write disabled

Specification of PLC number when using Q multiple PLC system

Specify the PLC number when appointing the device.
0: CPU connected (Control PLC if connected to the link)
1 to 4: CPU with the specified number

4) FX Series GM positioning unit (GM direct connection)

Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Bit device	Input (X) *1	X0~X377	X0~X377	Octal
	Output (Y)	Y0~Y67	Y0~Y67	
	Internal relay (M)	M0~M511	M0~M511	Decimal
	Special auxiliary relay (SM)	M9000~M9175	M9000~M9175	
	GOT internal bit register (GB)	GB132~1023	GB132~1023	
Word device	Data register (D)	D0~D3999	D0~D3999	
	Special data register (SD)	D9000~D9313	D9000~D9313	
	File register (R)	D4000~D6999	D4000~D6999	
	Index register (Z, V)	Z0~Z6 (32 bits)	Z (32 bits)	
		V0~V6 (16 bits)	V (16 bits)	
	GOT internal data register (GD)	GD100~1023	GD100~1023	

*1 Devices cannot be written.

5) FREQROL Series inverter (INV direct connection)

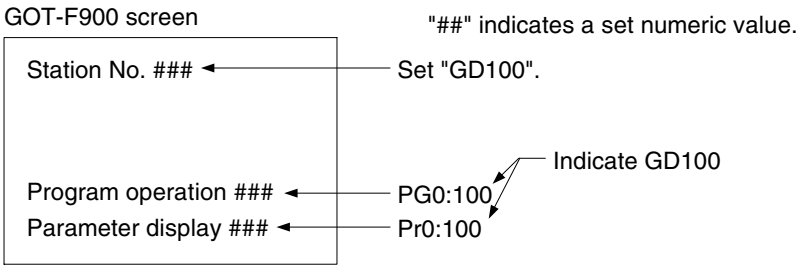
Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Bit device	Control status (S)	S0:☐~S7:☐		Decimal
	GOT internal bit register (GB)	GB132~1023		
Word device	Alarm code (A)	A0:☐~A7:☐		
	Parameter (Pr)	Pr0:☐~Pr993:☐		
	Program operation (PG)	PG0:☐~PG89:☐		
	Special parameter (SP)	SP108:☐~SP127:☐		
	GOT internal data register (GD)	GD100~1023		

"☐" indicates the station number of the monitored inverter.

Specify the station number using either of the following methods.

a) Station No. specification (direct) : Specify the station number of the inverter when setting the device.
[Available setting range: 0 to 31]

b) Station No. specification (indirect) : Specify the station number of the inverter indirectly using 16-bit GOT internal registers (GD100 to GD115) when setting the device.
Multiple inverters can be changed on one screen.
[Available setting range: 100 to 115]
* The station No. corresponds to each device of GD100 to GD115.



16.7.3 PLC Units Manufactured by Other Companies

1) Microcomputer board (general-purpose communication)

Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Bit device	Bit data (M)	M0~M2047 *1	M0~M2047	Decimal
	Special memory (M) *2	M8000~M8063	M8000~M8063	
	GOT internal bit register (GB) *4	GB132~GB1023	GB132~GB1023	
Word device	Word data (D) *3	D0~D4095	D0~D4095	
	Special memory (M) *2	D8000~D8015	D8000~D8015	
	GOT internal data register (GD) *4	GD100~GD1023	GD100~GD1023	

*1 The bit data (M) is available in the GT Designer version SW1-E and later.

*2 The special memory is offered for special application (such as interrupt output and communication error information) in the GOT.

*3 In the F920GOT-K, D0 to D1023 are available.

*4 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

2) SYSMAC C Series manufactured by Omron

Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Bit device	I/O relay	..000000~..614315	00000~51115	Decimal
	Internal auxiliary relay	WR00000~WR51115	–	
	Data link relay (LR)	LR00000~LR19915	L0000~L6315	
	Auxiliary memory relay (AR)	AR00000~AR95915 *1	A0000~A2715	
	Holding relay (HR)	HR00000~HR51115	H0000~H9915	
	Timer contact (TIM)	TIM0~TIM2047	T000~T511	
	Counter contact (CNT)	CNT0~CNT2047	C000~C511	
	GOT internal bit register (GB) *3	GB132~GB1023	GB132~GB1023	
Word device	Data memory (DM)	DM0~DM9999	D0000~D9999	
	Timer (Present value) (TIM)	TIM0~TIM2047 *2	T000~T511	
	Counter (Present value) (CNT)	CNT0~CNT2047 *2	C000~C511	
	Extension data memory (EM) (current bank)	EM0000~EM9999	–	
	Extension data memory (E0 to EC: 13 banks)	E00000~E09999 : EC0000~EC9999	–	Hexadecimal
	GOT internal data register (GD) *3	GD100~GD1023	GD100~GD1023	Decimal

*1 When the SYSMACα, CPM1A/2A/2C, CS1 or CS1J Series is connected, auxiliary memory relays (AR) cannot be set to ON or OFF. Do not use AR in the key operation setting (bit).

*2 Set values cannot be read.

*3 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

3) FLEX-PC N Series manufactured by Fuji Electric

Device name		Setting range		Device number representation
		GT Designer2	DU/WIN	
Bit device	Input (X)	X0~X7FF	X0~X7FF	Hexadecimal
	Output (Y)	Y0~Y7FF	Y0~Y7FF	
	Internal relay (M)	M0~M1FFF	M0~M1FFF	
	Latch relay (L)	L0~L1FFF	L0~L1FFF	
	State (S)	S0~S7FF	S0~S7FF	
	Special internal relay (M)	M800~M81FF	M800~M81FF	
	GOT internal bit register (GB)	GB132~GB1023	GB132~GB1023	
Word device	Timer (T)	T0~T3FF	T0~T3FF	
	Counter (C)	C0~C1FF	C0~C1FF	
	Data register (D)	D0~D2FFF	D0~D2FFF	
	Special data register (D)	D8000~D81FF	D8000~D81FF	
	Link register (W)	W0~W3FFF	W0~W3FFF	
	File register (R)	R0~R7FFF	R0~R7FFF	
	GOT internal data register (GD)	GD100~GD1023	GD100~GD1023	

4) Machine controller MP900/CP9200SH Series manufactured by Yasukawa Electric

Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Bit device	Input relay (IB)	IB0~IBFFFF	–	Hexadecimal
	Coil (MB)	MB0~MB4095F	–	*1
	GOT internal bit register (GB)	GB132~GB1023	–	Decimal
Word device	Input register (IW)	IW0~IW7FFF	–	Hexadecimal
	Holding register (MW)	MW0~MW32767	–	Hexadecimal
	GOT internal data register (GD)	GD100~GD1023	–	Decimal

*1 Word address (decimal) + Bit position (hexadecimal)

5) MEWNET-FP Series manufactured by Matsushita Electric Works

Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Bit device	Input relay (X) *3	X0000~X511F	X0000~X511F	Decimal *6
	Output relay (Y)	Y0000~Y511F	Y0000~Y511F	
	Internal relay (R) *4	R0000~R910F	R0000~R910F	
	Link relay (L) *1	L0000~L639F	L0000~L639F	
	Error alarm relay (E) *2*3	E0~E2047	E0~E2047	Decimal
	Timer contact (T) *3	T0~T3071	T0~T3071	
	Counter contact (C) *3	C0~C3071	C0~C3071	
	GOT internal bit register (GB) *7	GB132~GB1023	GB132~GB1023	
Word device	Elapsed value of timer/counter (EV)	EV0~EV3071	EV0~EV3071	
	Set value of timer/counter (SV)	SV0~SV3071	SV0~SV3071	
	Data register (DT) *4	DT0~DT16383	DT0~DT16383	
	Link register (LD) *1	LD0~LD8447	LD0~LD8447	
	File register (FL) *1*5	FL0~FL32764	FL0~FL32764	
	GOT internal data register (GD) *7	GD100~GD1023	GD100~GD1023	

Pulse relays (P) and index registers (IX, IY and I) are not available.

*1 FP0 and FPΣ are excluded.

*2 Only FP2SH is available.

*3 Write is disabled.

*4 Special relays (R9000 to R910F) and special data registers (DT9000 to DT9255) are included also. However, access is disabled in special data registers from D90000 in the FP Series.

*5 Access is enabled only in the bank 0.

*6 Bit device number (3-digit decimal number) + Bit position (1-digit hexadecimal number)

*7 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

6) SLC500/MicroLogix Series manufactured by Allen-Bradley

a) SLC500 Series

i) GT Designer (earlier than Version 5.05F) and DU/WIN (earlier than Version 2.50)

Device name		Setting range		Device number representation
		GT Designer	DU/WIN	
Bit device	Bit (B)	B0030000~B003255F B0100000~B255255F	B0030000~B003255F B0100000~B255255F	Hexadecimal
	Timer (T) (timing bit)	TT0040000~TT0042550 TT0100000~TT2552550	–	Decimal
	Timer (T) (completion bit)	TN0040000~TN0042550 TN0100000~TN2552550	T0040000~T0042550 T0100000~T2552550	
	Counter (C) (up counter)	CU0050000~CU0052550 CU0100000~CU2552550	–	
	Counter (C) (down counter)	CD0050000~CD0052550 CD0100000~CD2552550	–	
	Counter (C) (completion bit)	CN0050000~CN0052550 CN0100000~CN2552550	C0050000~C0052550 C0100000~C2552550	
	GOT internal bit register (GB)	GB132~GB1023	–	
Word device	Timer (T) *1 (set value)	TP004000~TP004255 TP010000~TP255255	T004000~T004255 T010000~T255255	Decimal
	Timer (T) *1 (current value)	TA004000~TA004255 TA010000~TA255255		
	Counter (T) (set value)	CP005000~CP005255 CP010000~CP255255	C004000~C005255 C010000~C255255	
	Counter (T) (current value)	CA005000~CA005255 CA010000~CA255255		
	Integer (N)	NO07000~N007255 NO10000~N255255	NO07000~N007255 NO10000~N255255	
	GOT internal data register (GD)	GD100~GD1023	–	

*1 32 bits cannot be specified.

ii) GT Designer 2 (Version 1.02C or later),
GT Designer (Version 5.05F or later) and DU/WIN (Version 2.50 or later)

Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Bit device	Bit (B)	B3:0/0~B3:255/15 B10:0/0~B255:255/15	B3:0/0~B3:255/15 B10:0/0~B255:255/15	Hexadecimal
	Timer (T) (timing bit)	T4:0/TT~T4:255/TT T10:0/TT~T255:255/TT	T4:0/TT~T4:255/TT T10:0/TT~T255:255/TT	Decimal
	Timer (T) (completion bit)	T4:0/DN~T4:255/DN T10:0/DN~T255:255/DN	T4:0/DN~T4:255/DN T10:0/DN~T255:255/DN	
	Counter (C) (up counter)	C5:0/CU~C5:255/CU C10:0/CU~C255:255/CU	C5:0/CU~C5:255/CU C10:0/CU~C255:255/CU	
	Counter (C) (down counter)	C5:0/CD~C5:255/CD C10:0/CD~C255:255/CD	C5:0/CD~C5:255/CD C10:0/CD~C255:255/CD	
	Counter (C) (completion bit)	C5:0/DN~C5:255/DN C10:0/DN~C255:255/DN	C5:0/DN~C5:255/DN C10:0/DN~C255:255/DN	
	GOT internal bit register (GB) *2	GB132~GB1023	GB132~GB1023	
Word device	Timer (T) *1 (set value)	T4:0.PRE~T4:255.PRE T10:0.PRE~T255:255.PRE	T4:0.PRE~T4:255.PRE T10:0.PRE~T255:255.PRE	Decimal
	Timer (T) *1 (current value)	T4:0.ACC~T4:255.ACC T10:0.ACC~T255:255.ACC	T4:0.ACC~T4:255.ACC T10:0.ACC~T255:255.ACC	
	Counter (T) *1 (set value)	C5:0.PRE~C5:255.PRE C10:0.PRE~C255:255.PRE	C5:0.PRE~C5:255.PRE C10:0.PRE~C255:255.PRE	
	Counter (T) *1 (current value)	C5:0.ACC~C5:255.ACC C10:0.ACC~C255:255.ACC	C5:0.ACC~C5:255.ACC C10:0.ACC~C255:255.ACC	
	Integer (N)	N7:0~N7:255 N10:0~N255:255	N7:0~N7:255 N10:0~N255:255	
	GOT internal data register (GD) *2	GD100~GD1023	GD100~GD1023	

*1 32 bits cannot be specified.
*2 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

File number and element specification range

Specify the file number and an element in decimal numbers. However, specify the bit position of a bit (B) in a hexadecimal number.

Device name (symbol)			File number*1		Available element specification range
Bit device	Bit	(B)	3	10~255	0~255 *2
	Timer (time counting bit)	(TT)	4	10~255	0~255
	Timer (completion bit)	(TN)	4	10~255	0~255
	Counter (effective up-count bit)	(CU)	5	10~255	0~255
	Counter (effective down-count bit)	(CD)	5	10~255	0~255
	Counter (completion bit)	(CN)	5	10~255	0~255
Word device	Timer (set value)	(TP)	4	10~255	0~255
	Timer (present value)	(TA)	4	10~255	0~255
	Counter (set value)	(CP)	5	10~255	0~255
	Counter (present value)	(CA)	5	10~255	0~255
	Integer (N)	(N)	7	10~255	0~255

*1 File numbers 10 to 255 are available in the user setting.
*2 For each element, the bit position can be specified in the range from 0 to F (15).

b) MicroLogix 1000/1200/1500 Series

i) GT Designer 2 (Version 1.02C or later),
GT Designer (Version 5.05F or later) and DU/WIN (Version 2.50 or later)

Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Bit device	Bit (B)	B3:0/0~B255:255/15	B3:0/0~B255:255/15	Hexadecimal
	Timer (T) (timing bit)	T3:0/TT~T255:255/TT	T3:0/TT~T255:255/TT	Decimal
	Timer (T) (completion bit)	T3:0/DN~T255:255/DN	T3:0/DN~T255:255/DN	
	Counter (C) (up counter)	C3:0/CU~C255:255/CU	C3:0/CU~C255:255/CU	
	Counter (C) (down counter)	C3:0/CD~C255:255/CD	C3:0/CD~C255:255/CD	
	Counter (C) (completion bit)	C3:0/DN~C255:255/DN	C3:0/DN~C255:255/DN	
	GOT internal bit register (GB) *2	GB132~GB1023	GB132~GB1023	
Word device	Timer (T) *1 (set value)	T3:0.PRE~T255:255.PRE	T3:0.PRE~T255:255.PRE	Decimal
	Timer (T) *1 (current value)	T3:0.ACC~T255:255.ACC	T3:0.ACC~T255:255.ACC	
	Counter (T) *1 (set value)	C3:0.PRE~C255:255.PRE	C3:0.PRE~C255:255.PRE	
	Counter (T) *1 (current value)	C3:0.ACC~C255:255.ACC	C3:0.ACC~C255:255.ACC	
	Integer (N)	N3:0~N255:255	N3:0~N255:255	
	GOT internal data register (GD) *2	GD100~GD1023	GD100~GD1023	

*1 32 bits cannot be specified.

*2 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

File number and element specification range

Specify the file number and an element in decimal numbers. However, specify the bit position of a bit (B) in a hexadecimal number.

Device name (symbol)			File number*1	Available element specification range
Bit device	Bit	(B)	3~255	0~255 *2
	Timer (timing bit)	(T)	3~255	0~255
	Timer (completion bit)	(T)	3~255	0~255
	Counter (up counter)	(C)	3~255	0~255
	Counter (down counter)	(C)	3~255	0~255
	Counter (completion bit)	(C)	3~255	0~255
Word device	Timer (set value)	(T)	3~255	0~255
	Timer (current value)	(T)	3~255	0~255
	Counter (set value)	(C)	3~255	0~255
	Counter (current value)	(C)	3~255	0~255
	Integer (N)	(N)	3~255	0~255

*1 File numbers 3 to 255 are available in the user setting.

*2 For each element, the bit position can be specified in the range from 0 to 15.

7) S7-200/300 Series manufactured by Siemens

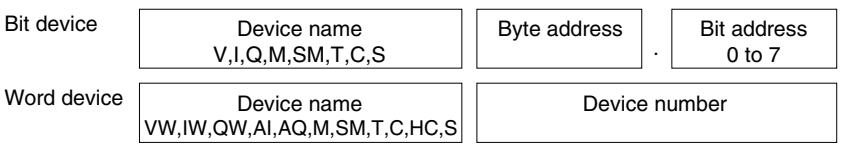
a) S7-200 Series

Device name		Setting range		Device number representation
		GT Designer (2)	FX-PCS-DU/WIN	
Bit device	Variable Memory (V)	V00~V51197	V0.0~V5119.7	Decimal
	Input (I)	I00~I77	I0.0~I7.7	
	Output (Q)	Q00~Q77	Q0.0~Q7.7	
	Bit memory (M)	M00~M317	M0.0~M31.7	
	Special Memory (SM)	SM00~SM1947	SM0.0~SM194.7	
	Timer (T) *1	T0~T255	T0~T255	
	Counter (C) *1	C0~C255	C0~C255	
	Sequence Control Relay (S)	S00~S317	S0.0~S31.7	
	GOT internal bit register (GB)	GB132~GB1023	GB132~GB1023	
Word device	Variable Memory (V) *6	VW0~VW5118	VW0~VW5118	
	Input (I) *6	IW0~IW6	IW0~IW6	
	Output (Q) *6	QW0~QW6	QW0~QW6	
	Analog Input (AI) *2*6	AIW0~AIW30	AIW0~AIW30	
	Analog Output (AQ) *6	AQW0~AQW30	AQW0~AQW30	
	Bit memory (M) *6	MW0~MW30	MW0~MW30	
	Special Memory (SM) *3*6	SMW0~SMW192	SMW0~SMW192	
	Timer (T) (16bit) *4	T0~T255	T0~T255	
	Counter (C) (16bit) *4	C0~C255	C0~C255	
	High Speed Counter (HC) (32bit) *5	HC0~HC2	HC0~HC2	
	Sequence Control Relay (S) *6	SW0~SW30	SW0~SW30	
	GOT internal data register (GD)	GD100~GD1023	GD100~GD1023	

*1 Bit devices T and C cannot be written.
*2 Word devices HC and AI cannot be written.
*3 Word device SM cannot be monitored.
*4 Word devices T and C are the 16-bit type.
*5 Word device HC is the 32-bit type.
*6 Only even byte addresses are available.

Note on number representation

A decimal point exists when using the GT Designer (2) but not when using the DU/WIN.



b) S7-300 Series

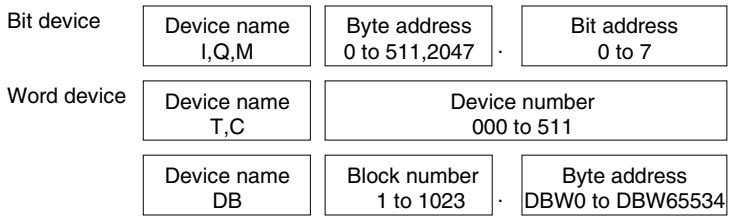
Device name		Setting range		Device number representation
		GT Designer (2)	DU/WIN	
Bit device	Input relay (I)	I0~I5117	I0.0~I511.7	Decimal
	Output relay (Q)	Q0~Q5117	Q0.0~Q511.7	
	Bit memory (M)	M0~M20477	M0.0~M2047.7	
	GOT internal bit register (GB) *1	GB132~GB1023	GB132~GB1023	
Word device	Present value of timer (T)	T0~T511	T0~T511	
	Present value of counter (C)	C0~C511	C0~C511	
	Data register (D)	D000100000~D102365534	DB□.DBW0~DB□.DBW65534	
	GOT internal data register (GD) *1	GD100~GD1023	GD100~GD1023	

"□" indicates a number in the range from 1 to 1023.
Only even values are available as byte addresses of data register (DBW values).

*1 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

Note on number representation

A decimal point exists when using the GT Designer (2) but not when using the DU/WIN.



MEMO

Operation Manual [GT Designer2 Version]

GOT-F900 Series Graphic Operation Terminal

MITSUBISHI ELECTRIC CORPORATION

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HIMEJI WORKS : 840, CHIYODA CHO, HIMEJI, JAPAN

MODEL	GOTF900-O-GT2-E
MODEL CODE	09R813

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(MEE)

Effective Sep. 2008
Specifications are subject to change without notice.