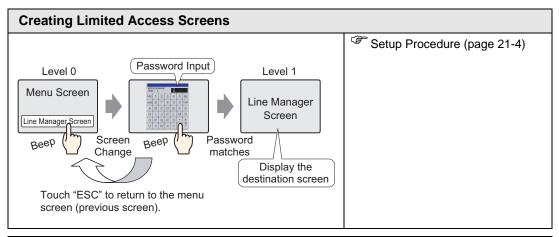
Enhancing Security

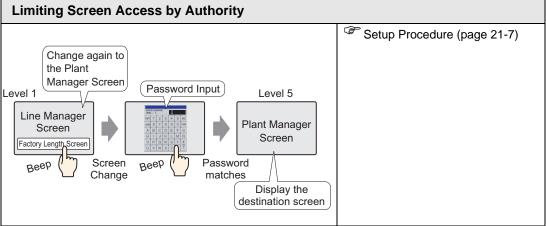
This chapter provides a basic explanation for "Enhancing security", and how to change settings in GP-Pro EX.

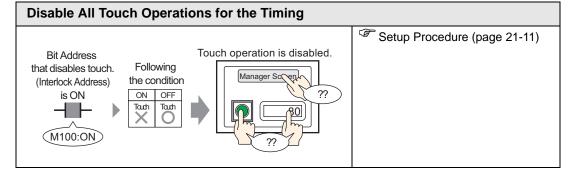
Read "21.1 Settings Menu" (page 21-2) first, then skip to the explanations as needed.

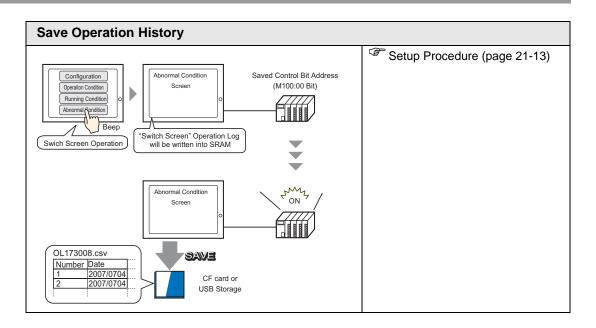
21.1	Settings Menu	21-2
21.2	Creating Limited Access Screens	21-4
21.3	Limiting Screen Access by Authority	21-7
21.4	Disable All Touch Operations for the Timing	21-10
21.5	Save Operation History	21-12
21.6	Password/User ID Input Window	21-16
21.7	Settings Guide	21-19
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21.1 Settings Menu









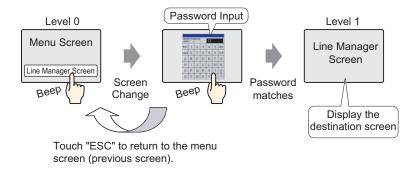
21.2 Creating Limited Access Screens

21.2.1 Setup Procedure

NOTE

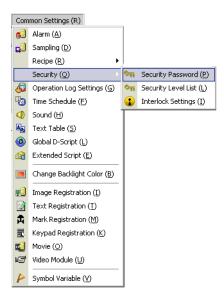
- Please refer to the settings guide for details.
- "21.7.1 Common (Security Settings) Settings Guide" (page 21-19)

Sets a Line Manager screen with a security level and password. This example uses Sampled Data B2, security level 1 and password 1111.

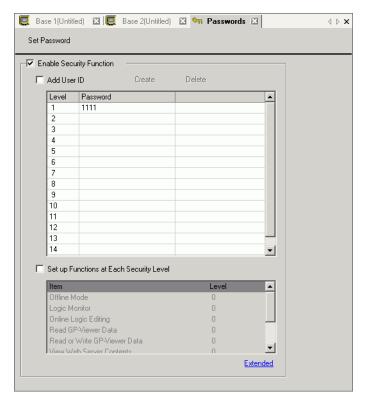


NOTE

- Security level 0 means no security is set.
- 1 From the [Common Settings (R)] menu, point to [Security (Q)] and select [Security Password (P)] or click on the toolbar.

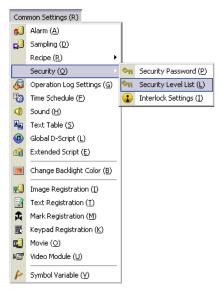


2 The Passwords window opens. Select the [Enable Security Function] check box, and type the password "1111" in [Level 01].





- Set a password up to eight single-byte characters long.
- Select the [Add User ID] check box to add the User ID to the Password. As with the password, User IDs can be up to eight single-byte characters long.
- 3 From the [Common Settings (R)] menu, point to [Security (Q)] and select [Security Level List (L)].



4 For [Sampled Data] B2, set the [Security Level] to 1. The security settings are complete.



NOTE

- Once you log in, the security level you logged in at is enabled until you turn off the power.
 - If you logged in with high security, and you leave your desk, we recommend clearing the security level first to enhance security.
- "21.7.1 Common (Security Settings) Settings Guide ◆ Extended Settings" (page 21-22)

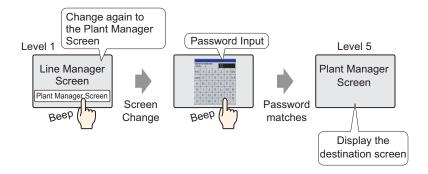
21.3 Limiting Screen Access by Authority

21.3.1 Setup Procedure

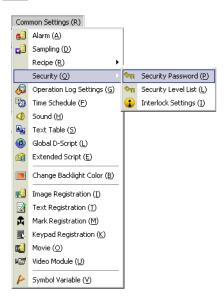
NOTE

- Please refer to the settings guide for details.
- "21.7.1 Common (Security Settings) Settings Guide" (page 21-19)

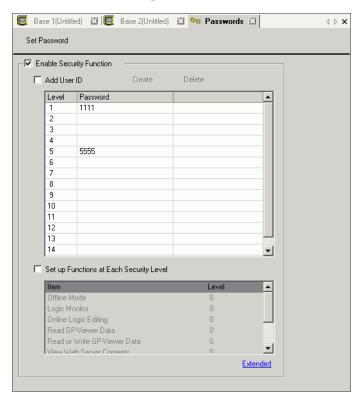
Sets a Plant Manager Screen with a security level and a password. This example uses Sampled Data B3, security level 5 and password 5555.



1 From the [Common Settings (R)] menu, point to [Security (Q)] and select [Security Password (P)] or click on the toolbar.

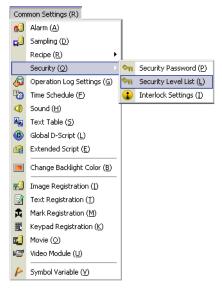


2 The Passwords window opens. Select the [Enable Security Function] check box, and type the password "1111" in [Level 0] and the password "5555" in [Level 5].

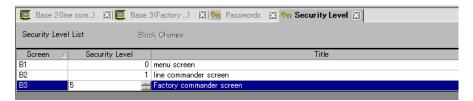


NOTE

- Set a password up to eight single-byte characters long.
- Select the [Add User ID] check box to add the User ID to the Password. As with the password, User IDs can be up to eight single-byte characters long.
- 3 From the [Common Settings (R)] menu, point to [Security (Q)] and select [Security Level List (L)].



4 For [Sampled Data] B2, set the [Security Level] to 1. For [Sampled Data] B3, set the [Security Level] to 5. The security settings are complete.



NOTE

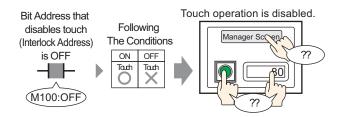
- Once you log in, the security level you logged in at is enabled until you turn off the power.
 - If you logged in with high security, and you leave your desk, we recommend clearing the security level first to enhance security.
- "21.7.1 Common (Security Settings) Settings Guide ◆ Extended Settings" (page 21-22)

21.4 Disable All Touch Operations for the Timing

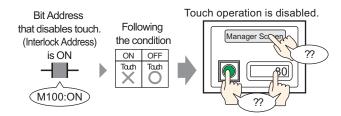
21.4.1 Detail

You can restrict screen touch operations by using the Global Interlock Address. Touch operation is enabled only when the bit address that is set for the Interlock Address meets the Touch Enable Condition.

When the Touch Enable Condition is "Bit ON".
 The touch action will only work when the set Interlock Address is ON.



When the Touch Enable Condition is "Bit OFF".
 The touch action will only work when the set Interlock Address is OFF.

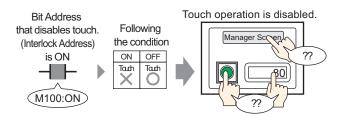


21.4.2 Procedure

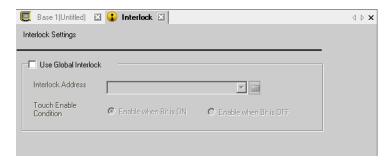


- Please refer to the settings guide for details.
 - "21.7.1 Common (Security Settings) Settings Guide Interlock Settings" (page 21-24)

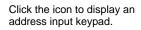
In the Touch Enable Condition, select Enable when Bit is OFF to set the touch operation to be disabled when Bit (M100) designated by the Interlock Address is ON.



1 From the [Common Settings(R)] menu, point to [Security (Q)] and select [Interlock Settings(I)] or click ① on the toolbar to display the following screen.



2 Check [Use Global Interlock], and set the Bit Address (for example, M100) that sets the Touch Enable Condition in [Interlock Address].



Enter "M" and "100".



3 Use the [Touch Enable Condition] field to set up a condition that enables touch operations. (For example, select "Enable When Bit is Off" to enable touch operations when the bit is off.)

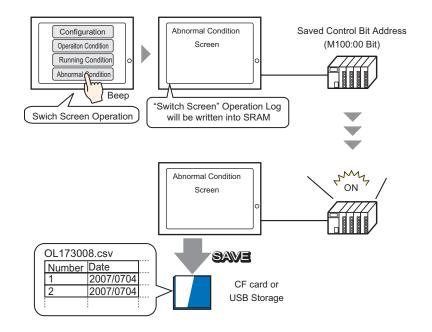


21.5 Save Operation History

21.5.1 Detail

Maintaining a history (log) of operations on the GP screen is useful in analyzing causes of problems, such as what operations were run before the error occurred. Also, by setting [User ID] in the Password Settings, you can identify the person operating the system.

Normally, the Operation Log, which is stored in SRAM on the GP, is automatically saved for a designated number of entries. You can also save to a designated CF Card or USB Storage by setting the 0 Bit in the control address to ON. When saving, the log is converted to CSV format, so you can view it by using [Show CSV] on the GP screen or on a PC.



NOTE

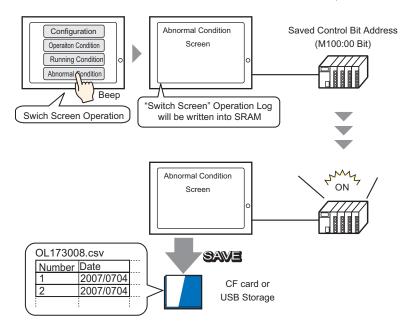
- To set the User ID, enable [Add User ID] in the [Password Settings] and you will be able to register a User ID.
 - "21.7.1 Common (Security Settings) Settings Guide Password Settings" (page 21-19)
- Operation Logs that are saved on the CF Card or USB Storage can be displayed on the GP screen by using Special Data Display[File Manager] and [CSV Display].
 - "24.6 Displaying/Editing CSV data on the Screen" (page 24-31)

21.5.2 Procedure

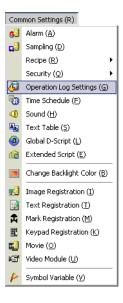


- Please refer to the settings guide for details.
- "21.7.2 Common Settings (Operation Log Settings) Guide" (page 21-29)

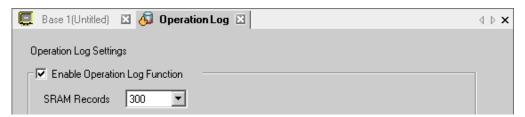
If Retain Control Bit Address is set to ON, the accumulated Operation Log in the SRAM on the GP is converted to the CSV format, and saved to a CF Card (or USB Storage).



1 Select [Operation Log Settings (G)] in the [Common Settings(R)] menu or click the 🔊 on the Toolbar.



2 The Operation Log setting screen opens. Check [Enable Operation Log Function] and select the number of [SRAM Records] to save.





- The size of SRAM is determined by the selected [SRAM Records]. If the selected number of SRAM records is exceeded, it will be saved to the CF Card (or USB Storage) automatically.
- 3 In [Operations to Log], check the functions that you wish to record in the Operation Log.



4 Select [CF Card] in [Save in].



5 Set an address that allows writing to the CF Card (for example, D10) in [Record Status Address].



6 Check [Operation Trigger].



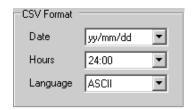
7 In the [Retain Control Bit Address] box, specify the bit address to start saving from (for example, M100).



- If Bit 1 (Transfer Complete Flag) in the designated Status Address is not set to ON, the Operation Log cannot be saved even if Retain Control Address is ON.
- 8 Select [Operation when there is insufficient space].



9 In [CSV Format], set [Date], [Time], and Display Style when converting to the CSV Format in [Language].



NOTE

• "Item Name" in the saved CSV File is displayed in English no matter which language is selected in [Language].

21.6 Password/User ID Input Window

21.6.1 Introduction to "Level Mode" and "User ID Mode"

The password input window /user ID and password input window appears when you access a screen with a higher security level than the one that is currently displayed.

According to the "Password Settings", either "Level Mode" (set password) or "User ID Mode" (set user ID and password) is displayed.

The entered password is displayed as * symbols.

"21.7.1 Common (Security Settings) Settings Guide ■ Password Settings" (page 21-19)

■ Password/User ID Input Windows

For "Level Mode", only the password input window is displayed.

For "User ID Mode", each window is displayed by touching the input area in the user ID and password input window.

Password input window



Deceriptio

User ID input window



Display.	Description
ESC	Cancel the password/user ID input, and close the input window.
	ENTER User ID
	NOTE • When you use both Change Screens by Touch and Change Screens from the device/PLC, confirm that the [Reflect in Device/PLC] option is selected from the System Settings window [Display Unit]-[Display]. If not selected, you cannot perform cancel even by pressing the [ESC] key when Change Screens from the device/PLC is performed. □ "5.15.6 [System Settings] Setting Guide ■ [Display Unit] Settings Guide ◆ Display • Screen Settings" (page 5-131)

Continued

Diaplay

Display.	Description							
CAPS	Changes between uppercase and lowercase letters. When the [CAPS] key is displayed in the reverse color (black), it will input lowercase letters. NOTE • Even if you change between uppercase and lowercase letters, the keypad will only display in uppercase letters.							
ENT	Secure the input password /user ID.							
LEVEL (Request Level Display)	NOTE • The current level and the request level can be seen from the internal device addresses. The values are stored in the following internal device addresses. LS9301 LS9302 — Current Level Request Level LS9301 and LS9302 are read-only. When there is a password request in LS9302, the security level is stored and the value returns to 0 when the password input is complete.							

■ User ID & Password input window



Display.	Description						
LEVEL (Request Level Display)	Shows the security level of the screen you are accessing. LEVEL: 1 User ID NOTE • The current level and the request level can be seen from the internal device addresses. The values are stored in the following internal device addresses. LS9301 Current Level Request Level LS9302 LS9302 Request Level LS9301 and LS9302 are read only. In LS9302, if there is a request for the user ID and password, the security level is saved and it will return to 0 when the user ID and password input is completed.						
User ID (User ID Input)	Display the User ID Input window by touching the input area. Also, display the User ID input in the User ID Input window.						
Password (Password Input)	Display the password input window by touching the input area. Also, the password entered in the password input window is displayed as * symbols.						
OK	The input User ID and Password are compared with internal records, and if the security level (required level) is satisfied, the screen is displayed. NOTE Error messages will be displayed in the following situation. - Inputting User ID that is not registered - Inputting User ID that does not satisfy the required level - Inputting password that does not match the User ID.						
Cancel	Close the User ID & Password input window to return to the original screen.						

21.7 Settings Guide

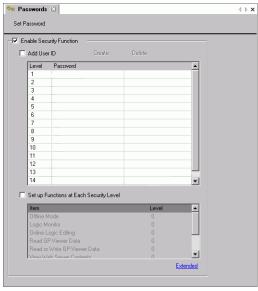
21.7.1 Common (Security Settings) Settings Guide

■ Password Settings

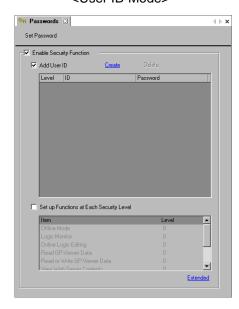
Sets the password and user ID for the 15 security levels.

Depending on the [Add User ID] Settings, either "Level Mode" or "User ID Mode" is displayed.

<Level Mode>



<User ID Mode>

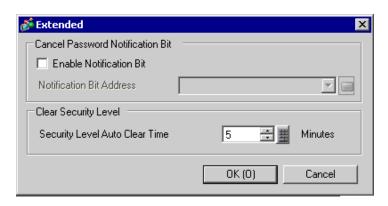


Setting	Description				
Enable Security Function	Select to use the security function.				
Add User ID	Specifies whether the User ID is added to the level settings.				
Level/ Password	For Level Mode Sets password for level 1 to 15. A password can be inputted by using up to eight single-byte characters. Passwords are case-sensitive. Set passwords only for the security levels you want to use. NOTE When Level Mode is selected, you cannot set the same password for multiple security levels. By setting a password in security level 15, you can change all security level passwords on the GP (offline mode).				

Setting		Description							
	Level/ Password/ User ID	For User ID Mode Up to 64 passwords can be registered. You can set the level between 1 to 15 optionally. Up to eight single-byte characters can be used for Password and User ID input. Passwords and User ID are case-sensitive.							
Add User ID		 NOTE For User ID Mode, you can set the same password for multiple security levels, but you cannot set the same User ID for multiple security levels. When Level Mode is changed to User ID Mode, only lines that already have passwords can be registered with User ID Mode. 							
If you disable [Add User ID] when it has already been enabled, a me box appears warning that all registered content in the password sett be deleted if you continue. Selecting "Yes" deletes all the registered									
	Create New/ Delete	Once [Add User ID] is checked, display of [Create New] and [Delete] is enabled. Select [Create New] to add one line to the registration lines of Password and User ID. Select [Delete] to delete the line you have selected.							
at e	up function each security	Sets whether or not to set functional security settings. Functions that can be set are as follows.							
lev	∋l	Function	Feature						
		Export error	Offline Feature						
		Logic monitor	Logic Feature						
		Online Logic Editing	Logic Feature						
		Read in GP-Viewer Data Values	GP-Viewer Function						
		Read in/Write out GP-Viewer Data Values	GP-Viewer Function						
		Browsing Web Server Contents Web Server Function							
		Read in Web Server Data Values Web Server Function							
		Read in/Write out Web Server Data	Web Server Function						
		Browsing files in the FTP folder	FTP Function						
Registering and deleting files in the FTP folder FTP Function									

Set	ting	Description					
	Level	Sets the level for the security settings function.					
		• Security level 0 means no security is set. Level 0 or Level 15 Select either Level 0 or Level 15 for "Export error". Level 15 in the password settings is required to set Level 15. If Level 15 is not set, the following error message appears					
security level		Level 15 settings required. After setting up Level 15 also set up levels in Offline Mode.					
Set up function at each security level	Level	 Level 0 to Level 15 For Logic Function, GP-Viewer Function, Web Server Function, and FTP Function, you can set the security level between 0 to 15. However, the following standards for the level settings apply depending on each function. Logic Monitor and Online Logic Editing Only a constant level, or a high Online Logic Editing level, can be set. Read in GP-Viewer Data Values and Read in/Write out GP-Viewer Data Values A high level can only be set for a constant level, or for Read in/Write out GP-Viewer Data Values. Browsing Web Server Contents, Read in Web Server Data Value and Read in/Write out Web Server A high level can only be set for a constant level, or for Read in/Write out Web Server. Browsing files in the FTP folder and Register and Delete files in the FTP folder A high level can only be set for a constant level, or for Register and Delete files in the FTP folder. 					
Ext	ended	Displays the [Extended] dialog box.					

♦ Extended Settings

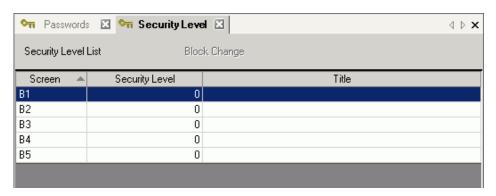


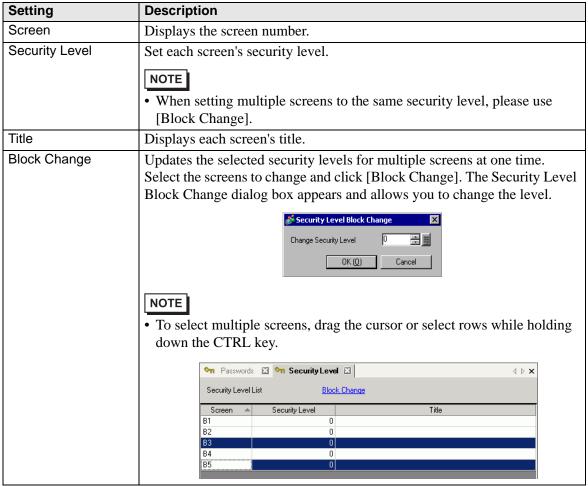
Setting	Description
Enable Notification Bit	Select this check box to send a notification when the ESC key is used to exit the password input window after a change screen operation initiated by the device/PLC. This will not work when changing screens by touch.
Notification Bit Address	When you cancel a password input window displayed via the Device/PLC control with the [ESC] key, the designated Notification Bit Address turns ON. In the System Settings workspace, [Display Unit] screen's [Display] tab, if the [Reflect in Device/PLC] check box is not selected, monitor the notification bit and when it turns ON, on the device/PLC reset the [Change-To Screen No.]*1 to the same number as the [Current Sampled No.]. When screen numbers match, the password input window closes.
Security Level Auto Clear Time	This feature sets the length of time required before the security level status returns to "0", assuming no GP unit operations/ screen changes are performed. The time can be set from 1 to 60 minutes. NOTE • If "0" is entered for the min. value, the security level status is not be automatically cleared. • Clear by performing the internal device address's bit action When the LS9300's 0 bit goes from OFF → ON, the security level is cleared and the current security level stored in LS9301 changes to 0. After the Security Level Clear occurs, return LS9300's 0 bit to OFF. (LS9301 is read-only.) O LS9300 Reserved (0) Security Level Clear Bit Stores the current security level

^{*1} To operate [Change-To Screen Number] via a Device/PLC, please configure the System Data Area.

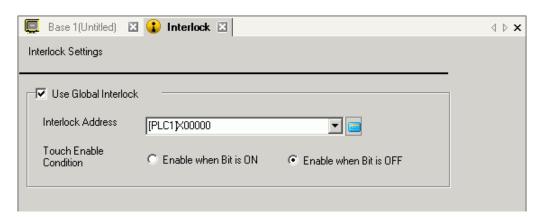
[&]quot;5.15.6 [System Settings] Setting Guide ◆ System Area Settings" (page 5-155)

■ Security Level List





■ Interlock Settings



Setting	Description							
Use Global Interlock	Sets whether to use Global Interlock or not							
	• This function only allows touch operation when a bit designated via [Interlock Address] is in a state that has been specified by [Touch Enable Condition].							
Interlock Address	Specifies the bit address (all bit addresses can be set) that represents an Enable condition for allowing touch input. Touch is enabled (disabled) depending on the state of this address.							
Touch Enable Condition	Select the condition that we to be entered.	ill enable the part to	be touched, to allow input					
	Interlock Address Status	Touch Enabled/ Disabled						
	Enable when Bit is ON	ON	Touch enabled					
		OFF	Touch disabled					
	Enable when Bit is OFF	ON	Touch disabled					
	Touch enabled							

■ Global Interlock's Touch Enable Condition

Enable / Disable of touch varies depending on the state of the settings of parts used in the same project or the state of the connection with the external Device/PLC. This section explains Enable / Disable of touch for each setting.

◆ Simultaneous use of parts with interlock

The Interlock installed on individual parts and global interlock can be used simultaneously, but when simultaneously used, the global interlock will take priority.

For example, even if the interlock for the individual parts is released, touch is disabled for that part if it is in a state of global interlock.

					Interlocking
Parts A Interlock					
					Releasing Interlock
					Interlocking
Global Interlock					
					Releasing Interlock
Touch Parts A	Enabled	Disabled	Enabled	Disabled	

◆ Specifies the address of the external Device/PLC

When the address of the external Device/PLC is designated as the global interlock address, Touch Enable Condition cannot be determined until the connection with that Device/PLC is established. Therefore, regardless of [Enable when Bit is ON]/[Enable when Bit is OFF], the global interlock will be enabled.

However, if disconnected once a connection is established, the status will be the same as prior to disconnection.

• Touch Enable Condition: Enable when Bit is ON

Communication Status of Devices/PLC	Not Connected	Connected	Not Connected	Connected		Not Connected	Connected	Bit ON
Interlock Address	Connected		Connected			Connected		BIL ON
								Bit OFF
Touch propriety	Disabled	Enabled	Enabled	Enabled	Disabled	Disabled	Disabled	
0		l.		1.	l .		1.	l
Communication Status of Devices/PLC	Not Connected	Connected	Not Connected	Connected		Not Connected	Connected	Bit ON
Interlock Address								
								Bit OFF
Touch propriety	Disabled	Disabled	Disabled	Disabled	Enabled	Enabled	Enabled	

• Touch Enable Condition: Enable when Bit is OFF

Communication Status of Devices/PLC	Not Connected	Connected	Not Connected	Connected		Not Connected	Connected	Bit ON
Interlock Address								
Touch propriety	Disabled	Disabled	Disabled	Disabled	Enabled	Enabled		Bit OFF
Communication Status of Devices/PLC	Not Connected	Connected	Not Connected	Connected		Not Connected	Connected	Bit ON
Interlock Address								
Touch propriety	Disabled	Enabled	Enabled	Enabled	Disabled	Disabled		Bit OFF

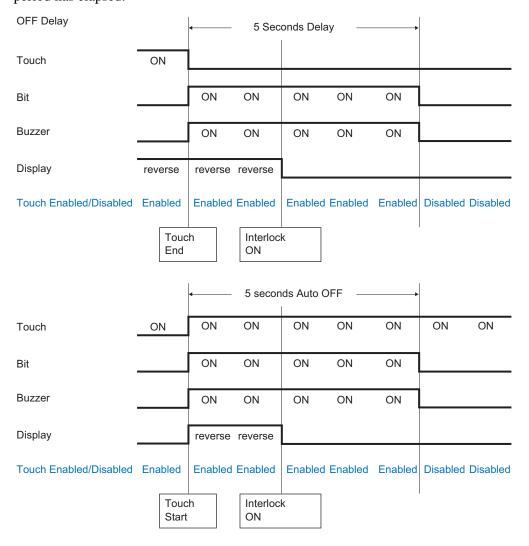


- Even in the case of multiple PLC Connections, as long as a connection is established with a PLC where an address is allocated in the global interlock, the global interlock operates regardless of whether the connection with other PLCs has been established or not.
- Display settings for each part that indicates the state of the Interlock can be applied to the interlock condition for that part. It cannot be applied to the state of global interlock.

◆ Parts settings that allow group function with Delay or Auto OFF

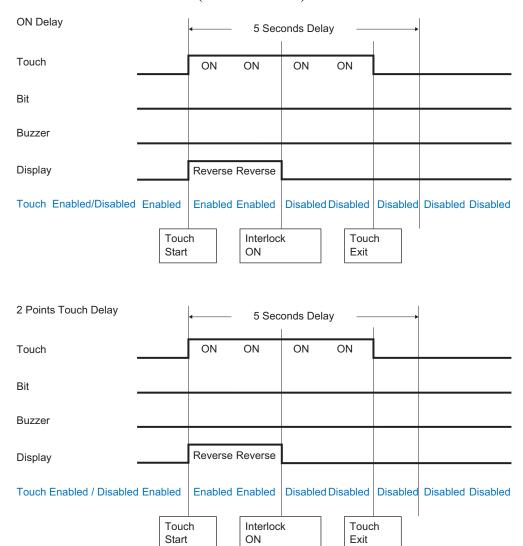
When entering a state of global interlock (touch is disabled) during the operation of the parts, touch can be enabled until the operation of the parts is completed or touch can be disabled throughout operation.

Group function with OFF Delay and Auto OFF
 When the parts that allow the group function with OFF Delay and Auto OFF is changed to
 a Global Interlock Condition (touch is disabled) during a momentary operation, the
 momentary operation takes priority during Delay or Auto OFF. It will not enter the state
 of global interlock (touch is disabled) until the Delay is completed or the auto OFF setting
 period has elapsed.

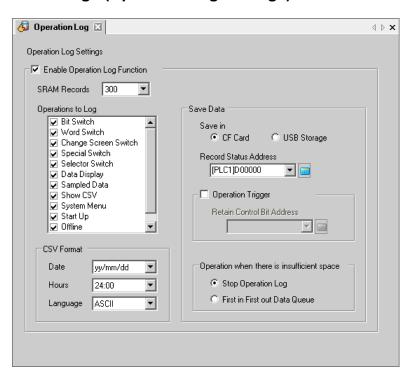


Before Auto-Off elapses, and you release the touch, touch becomes Disabled from that point.

ON Delay, 2 Points Pressing Delay Function
 For ON Delay and 2 Points Pressing Delay Function, if the condition is changed to the
 Global Interlock Condition (touch is disabled) during the Delay, the delay is canceled, and
 the Global Interlock Condition (touch is disabled) is activated.



21.7.2 Common Settings (Operation Log Settings) Guide



Set	tting	Description
	able Operation g Funtion	Specifies whether to use the Operation Log feature or not
SR	AM Records	Select a number to save to SRAM from 100, 200, 300, 400 and 500. NOTE • The capacity of the SRAM in GP is determined by the number of entries selected.
Operations to Log		Select the functions for Operations to Log from [Bit Switch], [Word Switch], [Change Screen Switch], [Special Switch], [Selector Switch], [Data Display], [Sampling Data Display], [Show CSV], [System Menu], [Start], [Offline], and [Change Language]. NOTE In Initialization Settings, all of the functions are targeted as Operations to Log.
Save Data	Save in	Select [CF Card] or [USB Storage] as the "Save in" location when outputting the Operation Log by converting to CSV format, or when exceeding the number of entries to save in the SRAM

Setting		Description						
	Record Status	Specifies the address for confirming the condition of writing in to CF Card						
Record Status Address Specifies the address for confirming the or USB Storage. Status Once Bit 0 in the [Control] Address is Address is turned ON. After confirming [Control]Address, Bit should be turne write in. Error Status				ress is set to ON, Bit 0 in the [Status] firming the condition of the turned ON in the [Status]Address to				
		The error s	tatus indicates the fol	lowing conditions.				
		(Error Code						
		Bit 12 to 15	Description	Detail				
		0000	Completed Successfully	When the backup process is completed successfully.				
		0100	CF Card/No USB storage	Occurs during backup if the CF Card/ <f>USB storage is not inserted or if the CF Card hatch is open.</f>				
		0101	CF Card/USB storage write error	There is not enough storage capacity in the CF Card/USB storage during backup, or CF Card/USB storage is removed during writing.				
	Operation Trigger	Specifies whether or not to save at a specified timing when you want to save the operation log at a given timing.						
	Retain Control Bit Address	Turn ON the designated Bit to start writing in the CF Card or USB storage.						
	Operation when there is insufficient space	 Specifies the operation when there is not enough space in the CF Card or USB storage. Stop Operation Log Stop outputting to the file of the operation log at the "Save in" location. When the next operation is conducted, recording of the operation log completely stops, and nothing is recorded. First in First out Data Queue Delete the oldest file that is saved in the CF Card or USB storage, and save the data in the SRAM. 						
CS	ng in CSV format.							
Set	tings Date	Select the display format for dates, from mm/dd/yy (month/day/year), mm/						
dd (month/day), yy/mm/dd (year/month/day/) year).								
	Sampling	Select the dis	play format for time,	from 12:00 or 24:00.				
	Language		~ ~	apanese, languages that support ASCII, mplified), Korean, Cyrillic, and Thai.				

■ Operation Log

◆ Type and content of obtained data

The functions that are recorded in the log as information about touch operation are as follows.

Feature	Operation	Action
	Bit Set	Bit Set
	Bit Reset	Bit Rst
Bit Switch	Bit Momentary	Bit Mom
	Bit Invert	Bit Rvs
	Comparison	Bit Comp
	Word Write in	Word Write
	Word Add	Word Add
	Word Continuous Add	Word Add++
	Word Sub	Word Sub
Word Switch	Word Continuous Sub	Word Sub
Word Switch	Digit Addition	Digit Add
	Digit Continuous Add	Digit Add++
	Digit Subtraction	Digit Sub
	Digit Continuous Sub	Digit Sub
	Operation	Word Ope
Change Screen	Previous Screen	Scrn Prev
Switch	Screen Change	Scrn Chg

Feature	ure Operation			
	Alarm History Switch	Acknowledg e	Alm Ack	
		Clear	Alm Clr	
		Transfer SRAM -> Device/PLC	SRAM->PLC	
		SRAM- >Transfer to Internal Address	SRAM->ADDR	
		Transfer Device/PLC - > SRAM	PLC->SRAM	
Special Switch	File Item Switch	Device/PLC- >Transfer to Internal Address	PLC->ADDR	
		Internal Address- >Transfer to SRAM	ADDR->SRAM	
		Internal Address- >Transfer to Device/PLC	ADDR->PLC	
	Data Transfer Switch	External storage- >Transfer to Device/PLC	Ex Mem -> PLC	
	Data Hansiel Switch	Device/PLC- >Transfer to External storage	PLC -> Ex Mem	

Feature	Operation	Action	
	Start monitor switch	Ladder monitor Ladder monitor	Bit set
Special Switch		(Cache) Device	Bit set
	Start application	monitor	App ON
	Exit WinGP		Win End
	Reset	Reset	
	Offline		OFF Line
Selector Switch			Bit Slct
Data Display	Touch, Input Barcode (Edit Data)	Data Input
Sampling Data Display	Sampling Data Display (Edit Da	Samp Input	
Show CSV	Show CSV (Edit Data)		CSV Input
	Offline	Offline	
	Reset	Reset	
	Address Monitor	Addr Mon	
System Menu	Logic monitor	Logi Mon	
System Menu	Ladder monitor	Lad Mon	
	Device monitor	Dev Mon	
	CF Start	CF Start	
	USB Start	USB Start	
Start	Main body Start	Power ON	
	Trans Ret	Trans Ret	
Offline	Off Chg		OFF Chg
	Off Ret	OFF Ret	
Change Language	Change Language		Lang Chg

Example of CSV file outputting

Number	Date	Time	User ID	LEVE L	Screen	Parts ID	Comment	Action	Address
1	07/12/22	13:54		0	b1	SL_0001		Bit Set	[PLC1]M0000
2	07/12/22	13:54		0	b1	SL_0002		Bit Rst	[PLC1]M0001
3	07/12/22	13:55	YAMADA	3	b1	SL_0003	Level 3 Switch	Bit Mom	

Item and Summary

Function	Description
Number	Log number
Date	Operation data is displayed in the format that is set in [Operation Log Settings].
Time	Operation time is displayed in the format that is set in [Operation Log Settings].
User ID	User ID that is registered in "User ID Mode" (Add User ID) is displayed. For "Level Mode" (Do not add User ID), this will be blank.
LEVEL	Display the level between 0 to 15 at the time of operation.
Screen	Displays the Screen Number in B** for the Base Screen, and in W** for the Window Screen.
Parts ID	Displays Parts ID.
Comment	Displays comments in Parts. If nothing is registered, this will be blank.
Action	Displays Action [™] • Type and content of obtained data" (page 21-31)
Address	Displays a target address
Sub Info	This will be displayed when supplemental remarks are needed regarding Address or Action.
Prev Value	Displays the previous value.
Chg Value	Displays the changed value. Bit Address displays ON or OFF and Word Address displays a numeric value. The display format of the numeric value differs depends on the display attributes of the parts being used.

NOTE

- "Number" is addressed sequentially in the file.
- The item names are fixed in English.

◆ Contents of the functional operation log

Bit Switch

Target: Bit Set, Bit Reset, Bit Momentary, Bit Invert, Comparison

NOTE

• Please refer to the settings guide for details.

"10.14.1 Bit Switch" (page 10-45)

Function	Description					
Number	Common items					
Date	" Item and Summary" (page 21-34)					
Time						
User ID						
LEVEL						
Screen						
Parts ID						
Comment						
Action						
Address	Displays a target address External device address:[PLC1]*****, [# MEMLINK]***** Symbol : Operation Start Variable : Run Start System Variable : #H*****, #L*****					
Sub Info	Bit Set : Hidden Bit Reset : Hidden Bit Momentary : Hidden Bit Invert : Hidden Comparison : Displays a Comparison Word Address and a Constant of Comparison Condition Example [PLC1]D0001 (space) < (space) 10 (Comparison Word Address Comparison Condition Constant)					
Prev Value	Hidden					
Chg Value	Bit Set : ON Bit Reset : OFF Bit Momentary : (When pressing) ON					
	Bit Invert : Hidden Comparison : ON or OFF					

Word Switch

Target: Word Write, Word Add, Word Continuous Add, Word Subtract, Word Continuous Subtract, Digit Addition, Digit Continuous Add, Digit Subtraction, Digit Continuous Subtraction, Operation



- Please refer to the settings guide for details.
- "10.14.2 Word Switch" (page 10-59)

Function	Description
Number	Common items
Date	" Item and Summary" (page 21-34)
Time	
User ID	
LEVEL	
Screen	
Parts ID	
Comment	
Action	
Address	Displays a target address
	External device address:[PLC1]*****, [# MEMLINK]*****
	Symbol : Operation Start
	Variable : Run Start
	System Variable : #H****, #L****

Function	Description		
Sub Info	Word Write in	: Hidden	
	Word Add	: Displays the base Word Address for Add +	
	Constant		
	Word Sub	: Displays the base Word Address for Sub -	
	Constant		
	Digit Addition	: Displays the Digit Position	
	Digit Subtraction	: Displays the Digit Position	
	Operation	: Displays the base Word Address for	
		Operation and the Constant	
		Example	
		[PLC1]D0001 (space) AND (space) 10	
		(Operation Base Word Address	
		Operator	
		Constant)	
	Word Continuous Add	: Displays the base Word Address for Add, the	
		Constant, and ON/OFF.	
	Word Continuous Sub	: Displays the base Word Address for Sub, the	
	Digit Continuous Add	Constant, and ON/OFF.	
	Digit Continuous Add	: When pressed Digit Position ON	
	Digit Continuous Sub	When released Digit Position OFF : When pressed Digit Position ON	
	Digit Continuous Sub	When released Digit Position OFF	
		•	
		↑ ◆ Operation" (page 10-62)	
Prev Value	Hidden	Hidden	
Chg Value	Word Write in, Digit Addit Continuous Sub: Display	ion, Digit Continuous Add, Digit Subtraction, Digit s Write in value	
	Word Add, Word Continu Operation: Hidden	ous Add, Word Sub, Word Continuous Sub,	

Change Screen Switch

Target: Previous Screen, Screen Change

- Please refer to the settings guide for details. "10.14.3 Change Screen Switch" (page 10-63)

Function	Description	
Number	Common items	
Date	" Item and Summary" (page 21-34)	
Time		
User ID]	
LEVEL]	
Screen]	
Parts ID		
Comment		
Action		
Address	Hidden	
Sub Info	Hidden	
Prev Value	Previous Screen: Displays the screen number before changing Screen Change: Displays the screen number before changing	
Chg Value	Previous Screen: Displays the changed screen number (if there is no previous screen, 0 will be displayed) Screen Change: Displays the changed screen number	

Special Switch (Alarm)

Target: Acknowledged, Clear

- Please refer to the settings guide for details.

 □ "10.14.4 Special Switch ◆ Alarm History Switch" (page 10-66)

Function	Description	
Number	Common items	
Date	" Item and Summary" (page 21-34)	
Time		
User ID		
LEVEL		
Screen		
Parts ID		
Comment		
Action		
Address	Hidden	
Sub Info	Displayed depending on the Action. Alarm History Acknowledged (Acknowledged Alarm History Acknowledged (Ack All) Alarm History Clear (Clear) Alarm History Clear (Clear All) Alarm History Clear (Clear Acknowledged Alarm History Clear (Clear Acknowledged Alarm History Clear (Clear All Recovery Alarm History Clear (Clear All Acknowledged Alarm History Clear (Clear All Acknowledged Alarm History Clear (Clear All Count) Alarm History Clear (Clear All Time) Alarm History Clear (Clear One Time)	: Ack All : Clr : Clr All m): Clr Rev Alarm): Clr Ack larm): Clr All Rev ged Alarm): Clr All Ack : Clr All Cnt
Prev Value	Hidden	
Chg Value	Hidden	

Special Switch (File Item Switch)

Target: Transfer SRAM -> Device/PLC, Transfer SRAM -> Internal Address, Transfer Device/PLC -> SRAM, Transfer Device/PLC -> Internal Address, Transfer Internal Address -> SRAM, Transfer Internal Address -> Device/PLC

- Please refer to the settings guide for details.
- "10.14.4 Special Switch ♦ File Item Switch" (page 10-68)

Function	Description		
Number	Common items		
Date	"Item and Summary" (page 21-34)		
Time			
User ID			
LEVEL			
Screen			
Parts ID			
Comment			
Action			
Address	Hidden		
Sub Info	Transfer SRAM -> Device/PLC: Example		
	File Number (space) Item Name (space)		
	Storage Start Address		
	Transfer SRAM -> Internal Address: Example		
	File Number (space) Item Name (space)		
	Storage Start Address		
	Transfer Device/PLC -> SRAM: Example		
	File Number (space) Item Name (space)		
	Storage Start Address		
	Transfer Device/PLC -> Internal Address: Example		
	File Number (space) Item Name (space)		
	Storage Start Address		
	Transfer Internal Address -> SRAM: Example		
	File Number (space) Item Name (space)		
	Storage Start Address		
	Transfer Internal Address -> Device/PLC: Example		
	File Number (space) Item Name (space)		
	Storage Start Address		
Prev Value	Hidden		
Chg Value	Hidden		

Special Switch (Data Transfer Switch)

Target: Transfer CF -> Device/PLC, Transfer Device/PLC -> CF, Transfer USB -> Device/PLC, Transfer Device/PLC -> USB

- Please refer to the settings guide for details.
- "10.14.4 Special Switch ◆ Data Transfer Switch" (page 10-69)

Function	Description
Number	Common items
Date	" Item and Summary" (page 21-34)
Time	
User ID	
LEVEL	
Screen	
Parts ID	
Comment	
Action	
Address	Hidden
Sub Info	CF Card->CF USB Storage -> USB
Prev Value	Hidden
Chg Value	Hidden

Special Switch (Start monitor switch)

Target: Ladder Monitor, Ladder Monitor (cache), Device Monitor

- Please refer to the settings guide for details.
- "10.14.4 Special Switch Start Monitor Switch" (page 10-72)

Function	Description
Number	Common items
Date	" Item and Summary" (page 21-34)
Time	
User ID	
LEVEL	
Screen	
Parts ID	
Comment	
Action	
Address	Displays a target address
Sub Info	Hidden
Prev Value	Hidden
Chg Value	ON

Special Switch (Others)

Target: Start Application, Exit WinGP, Reset, Offline

- Please refer to the settings guide for details.

 □ "10.14.4 Special Switch Switch Feature" (page 10-64)

Function	Description
Number	Common items
Date	" Item and Summary" (page 21-34)
Time	
User ID	7
LEVEL	
Screen	
Parts ID	
Comment]
Action	
Address	Hidden
Sub Info	Start Application: Displays the name of the EXE executed. End of the EXE path\the following text is displayed. Exit WinGP : Hidden Reset : Hidden Offline : Hidden
Prev Value	Hidden
Chg Value	Hidden

Selector Switch



• Please refer to the settings guide for details.

"10.14.5 Selector Switch" (page 10-74)

Function	Description
Number	Common items
Date	" Item and Summary" (page 21-34)
Time	
User ID	
LEVEL	
Screen	
Parts ID	
Comment	
Action	
Address	Displays a target address External device address:[PLC1]*****, [# MEMLINK]***** Symbol : Operation Start Variable : Run Start System Variable : #H*****, #L*****
Sub Info	Hidden
Prev Value	Hidden
Chg Value	ON

Data Display

Target: Input of numeric values or characters, and Barcode Input, when using the Data Display with a Touch Input or Barcode Input function

Function	Description	
Number	Common items	
Date	" Item and Sum	mary" (page 21-34)
Time		
User ID		
LEVEL		
Screen		
Parts ID		
Comment		
Action		
Address	Displays a target a External device ac Symbol Variable System Variable	ddress:[PLC1]****, [# MEMLINK]**** : Operation Start : Run Start
Sub Info	Hidden	
Prev Value	Touch Input Barcode Input	: Displays the numeric value or text before input is confirmed, using up to 100 characters.: Displays the previous bar code value, using up to 100 characters.
	_	Log for the previous value only is not obtained when input s not been carried out.
Chg Value	Touch Input Input Barcode	: Displays the numeric value or text after input is confirmed, using up to 100 characters.: Displays the value from bar code input, using up to 100 characters.

Sampling Data Display (Edit Data)

Target: When data is edited with the Sampling Data Display

Function	Description
Number	Common items
Date	🕝 " Item and Summary" (page 21-34)
Time	
User ID	
LEVEL	
Screen	
Parts ID	
Comment	
Action	
Address	Hidden
Sub Info	Hidden
Prev Value	Hidden
Chg Value	Hidden

CSV Display (Edit Data)

Target: When data is edited with the CSV Display

Function	Description
Number	Common items
Date	" Item and Summary" (page 21-34)
Time	
User ID	
LEVEL	
Screen	
Parts ID	
Comment	
Action	
Address	Hidden
Sub Info	Hidden
Prev Value	Hidden
Chg Value	Hidden

System Menu

Target: Offline, Reset, Address Monitor, Logic Monitor, Ladder Monitor, Device Monitor, CF Start, USB Start

Function	Description
Number	Common items
Date	"Item and Summary" (page 21-34)
Time	
User ID	
LEVEL	
Screen	Hidden
Parts ID	Hidden
Comment	Hidden
Action	Common items "Item and Summary" (page 21-34)
Address	Hidden
Sub Info	Hidden
Prev Value	Hidden
Chg Value	Hidden

Startup

Target: Startup display unit, startup via transfer

Function	Description
Number	Common items
Date	* Item and Summary" (page 21-34)
Time]
User ID	Hidden
LEVEL	Hidden
Screen	Hidden
Parts ID	Hidden
Comment	Hidden
Action	Common items "I Item and Summary" (page 21-34)
Address	Hidden
Sub Info	Hidden
Prev Value	Hidden
Chg Value	Hidden



[•] Not recorded in the Operation Log when data is transmitted from the transmission screen of the Project File on the offline menu.

Offline

Target: offline transition (the right click menu in the WinGP is included), recovery from offline

Function	Description
Number	Common items
Date	"Item and Summary" (page 21-34)
Time	
User ID	
LEVEL	Offline transition : Displays the level during operation Recovery from offline : Displays the 0
Screen	Hidden
Parts ID	Hidden
Comment	Hidden
Action	Common items "" Item and Summary" (page 21-34)
Address	Hidden
Sub Info	Table name
Prev Value	Hidden
Chg Value	Hidden

Change Language

Target: Change Language

Function	Description
Number	Common items
Date	"Item and Summary" (page 21-34)
Time	
User ID	
LEVEL	
Screen	Hidden
Parts ID	Hidden
Comment	Hidden
Action	Common items
	" Item and Summary" (page 21-34)
Address	Hidden
Sub Info	Displays the table name with 30 characters or less.
Prev Value	Hidden
Chg Value	Hidden

♦ Recording Timing of the Operation Log

Recording timing of the operation log differs depending on the target features to be recorded.

NOTE

• Regarding offline operation, the operation log recording starts from the time of the move to online mode. The log is not recorded when offline.

Basic Switch Action

The previous value is not recorded.

· Bit Switch

The operation log is recorded only for the state after the change.

Example: When "ON" is changed to "OFF", only the log for "OFF" is saved.

Word Switch

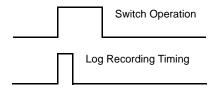
The operation log is recorded only for the state after the change.

Example: When "100" is changed to "200", only the data of "200" is saved.

When [Touch Panel Detection] is [ON Detection]

NOTE

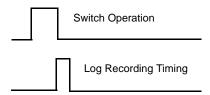
- See the settings guide for the settings details of [Touch Panel Detection].
- "5.15.6 [System Settings] Setting Guide ◆ Operation" (page 5-134)
- When the switch action is normal (common for all switches)
 The log recording is performed by turning the switch to ON. For Momentary, data value recording is performed when the state is either ON or OFF.



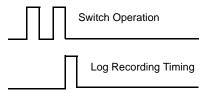
- When ON Delay or OFF Delay is set
 The operation log recording starts after the delay time has passed.
- When Double Touch is set
 The operation log recording starts when the double touch is enabled.

When [Touch Panel Detection] is [OFF Detection]

When the switch action is normal (common for all switches)
 Log recording is performed by turning the switch OFF. Only values after the change are saved are logged.

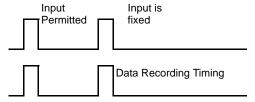


When Double Touch is set
 The operation log recording is performed when the switch is pressed for the second time.

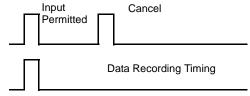


Data Display

The previous value is recorded at the time when Allow Data Input is triggered, and the data for the changed value is recorded at the time when Input is fixed.



The previous value is recorded when Input Permitted is triggered. If a cancel is performed after that, the data of the previous value is discarded without performing the operation log recording.



♦ Saving the Operation Log

The operation log recorded is converted to a file in the CSV format when it is saved in the CF Card or USB Storage.

File Name

File names are saved in the following format.

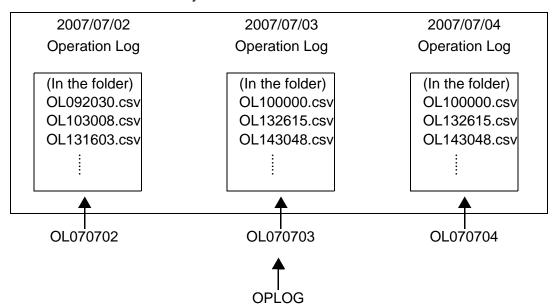
OLHHMMSS.csv OL: an abbreviation of a file for an operation log

HH: Hours MM: Minutes SS: Sec

Example: The operation log saved at 17:03:08 is named OL170308.csv

File Folder

Files are automatically saved in CSV format in the folder created. The "OPLOG" folder is created in the CF Card or USB Storage designated as a destination for the save, and a folder is created in the "OPLOG" daily.



Example: The folder to save and the file name for the operation log saved at 13:16:3 on July 2, 2007

\\OPLOG\OL070702\OL131603.csv



- Do not save any files other than operation logs in the "OPLOG" folder.
- Operation log files can be displayed on the GP using the CSV Display.

"24.6 Displaying/Editing CSV data on the Screen" (page 24-31)

21.8 Restrictions

21.8.1 Restrictions on Passwords and IDs

- The User ID and Password Input Window, the Password Input Window, and the User ID Input Window cannot be edited.
- A Password or a User ID cannot be entered from the Device/PLC.
- A Password or a User ID cannot be entered from the Bar Code Reader.
- When the Password Input Window (the User ID Input Window) or the User ID and Password Input Window is displayed, if the Trigger Bit of the Local Window or the Global Window is turned ON, close the Password Input Window (the User ID Input Window) or the User ID and Password Input Window and then display.
- Do not set [Continuous Read] for Window Parts to call the Window Screens setting Security Level. The Password Input Window or the User ID and Password Input Window is not displayed on the GP even if you set it, and the security feature does not run.
- When the security level registering no Password is set for the screen, the screen can not be
 displayed unless you input a Password or a User ID and Password with the greater
 security level than the screen.
 - When a Password or a User ID and Password with a greater security level than the screen you want to display have/has not been registered, you can not change screens.
 - 1 When the passwords are set as follows and the screen changes to a level 4 screen

Level 1	AAAA
Level 2	BBBB
Level 3	CCCC
Level 4 to 14	None
Level 15	ZZZZ

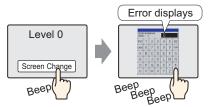


Input the level 15 password

There is a password higher than level 4, so the screen change is permitted

2 When the passwords are set as follows and the screen changes to a level 4 screen

Level 1	AAAA
Level 2	BBBB
Level 3	CCCC
Level 4 to 15	None



Even if you have inputted something, pressing the [ESC] key will return to the previous screen.

There is no password higher than level 4, so the screen change is not permitted

- In the "Level Mode" (Do Not Add a User ID), an error does not occur even though a Password has not determined. However, an error occurs when you set the same Password. In the "User ID Mode" (Add a User ID), a Password has to be set. The same Password can be set. However, when no User ID is determined or a User ID is duplicated, an error occurs and settings are not completed.
- When the security level is set for the screen displayed at the beginning after turning on the GP Power (the initial screen), the initial screen is displayed and followed by the Password Input Window or the user ID and Password Input Window. Therefore, the initial screen is running while the Password Input Window or the user ID and Password Input Window is displayed. In addition, the Password Input Window displayed here can not be canceled by the [ESC] Key, and the user ID and Password Input Window can not be canceled by [Cancel]Key. It is necessary to input the correct Password or the user ID and Password.

21.8.2 Restrictions on the global interlock

- During the global interlock, Touch Operations on the screen are disabled. However, it is
 possible to perform Touch Operations for the following features, in the same way as
 normal.
 - Displaying and operating the System Menu
 - Displaying and operating the Brightness/Contrast adjustment bar
 - Changing the Error Window (single-line <=> details) and deleting it
 - Returning from standby mode (Screen OFF)
 - Operating Offline
- If the features or parts are touched when touching them has been disabled by the global interlock, the touch buzzer sound does not sound, and AUX is not output.
- During the global interlock, do not activate the Ladder Monitor, the Device Monitor, the Logic Monitor, or the Address Monitor. If you activate them, you cannot exit any monitor feature because touch operation is disabled.

21.8.3 Restrictions on the operation log

- Do not turn off the power or remove the CF Card or USB memory during the save operation to the CF Card or USB Storage. Data may not be saved normally.
- If the file size is greater than the remaining capacity in the CF Card or USB Storage, the file can not be saved.
- An operation log which has been recorded on SRAM during Project Transfer is saved in the CF Card or USB Storage.
 - However, if the CF Card or USB Storage can not be found on the GP or the remaining capacity is not enough, the data of the operation log is deleted. When the project is transferred from the transfer screen for project files on the offline menu, the operation log is not saved in the CF Card or USB Storage.
- The operation log does not record the action of simulation.
- The operation log does not record data when the project is transferred from the transfer screen for project files on the offline menu.
- Even if the execution condition of the operation log is set to "When Bit is ON", when the
 capacity of SRAM is filled up, data is automatically output to the CF Card or USB
 Storage as a CSV file.
- A log operated remotely using the GP-Viewer can not be saved.
- The IPC Series do not have Backup SRAM. Therefore, the History Data is backed up periodically. Backup is performed in the designated frequency or trigger, so the operation log after the last backup is not saved if the power is turned off before backup. Recording of the operation log will be restarted after recovery.

Refer to the following for the settings of the destination to save the History Data in the IPC Series.

"37.9.1 System Settings [Display Unit Settings] [IPC Settings] Settings Guide Historical Data Retentive Settings" (page 37-159)

