

XDesignerPlus User's Manual

Manual Revision List

Revision no	Date of Production	Content of Revision
Ver 1.0	2008.9.1	Initial Production
Ver 1.1	2008.11.30	Added convenient functions & Tool chapter
Ver 1.5	2009.01.30	Added Master & Frame screen
Ver 2.0	2010.08.20	Added tag of EventLog Viewer

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CHAPTER 1 Outline

CHAPTER 1 – Outline

Thanks for buying the M2I touch screen.

Please read this user's manual and understand the touch screen and XDesignerPlus software before using so that you can use it correctly.

1.1 Hardware outline

This is hardware overview of touch screen.

1.1.1 Use of touch screen

Touch screen proceeds with the complicated functions of advanced FA equipment into graphics.

The user monitors the equipment visually, operates and controls the equipment through touch screen in real-time. So, touch screen is not used separately, but operated by communications with controller such as PLC.

(1) Applying fields

Applying fields of touch screen is various.

Fields	Details
Industrial field	Correspond operating panel as a part of FA (Factory Automation) Ex) semiconductor equipment, automobile assembly line, food processing FA line, chemical processing line, etc.
Traffic field	Transmit drive-related instruction along situation or control various driving equipment Ex) speed control of drivers, monitor alarm, instruct counter-measure against emergency
Watch, observation fields	Monitor watching object and the designated places Central control of disaster-prevention system in department stores, banks, hospitals, hotels Ex) image watch and embodiment disaster-prevention using CCD camera
Information, advertisement fields	Information system of public places or buildings Display of information and advertisement in elevator, public transportation vessels Ex) Introduce, guide from lobby of public building to each place of buildings
Logistics field	Automatic warehouse, delivery/ex-factory system of garage, unmanned conveyance
Education, testing fields	Electronic test and educating equipment without paper and pen Ex) Electronic tests by screen conversion and touch screen in license, qualification tests

1.1.2 COM port of touch screen

Touch screen supports [PLC(controller)], serial(232C,422,485), Ethernet communications and supports serial(232C), USB, Ethernet communications with [PC].

Also, it can save or move data using USB memory storing units and CF memory cards.

COM port	Contents
Power	AC 85~264V or DC 24V(20~28V) power port
Serial	Communicate with controller(PLC) or PC It has two ports, COM1 and COM2. [COM1] has 6 pin, supports 232C only, can communicate with both controller and PC. [COM2] has 9 pin or 15 pin, supports 232C/422/485 communications as port which communicates with controller.
Ethernet	Ethernet communications with controller or PC
USB device	Locate in front of touch screen, communicates with PC using USB cable
USB host	Port installed USB memory saving units or printers
CF card	Install CF memory card
Profibus	Install Profibus module, implements Profibus communications

1.1.3 Communications enabling Controller (PLC)

It is a controller which can communicate with touch screen.

The number of controllers which can implement communications is being increased continuously, please check the homepage of M2I(www.m2i.co.kr) if your controller is not in the following chart.

(1) Connectable PLC

Maker	Series	CPU Type	CPU Direct connection	Link	1:N	Ethernet
LS	GLOFA-GM	GM1/2/3/4/6/7	●	◆	●	●
	Master-K	10S1/10/30/60/100S	●	◆		
		80/120/200/300/1000S	●	◆	●	●
		60/200H	●			
		500(H)/1000	●	◆		
	XGT	XGI	●			
		XGK/XGB	●	◆	●	●
Samsung	Fara N	N70/700 alpha,7000	●	◆	●	
		NX70/700	●	◆	●	
		N70/700 plus	●			
	SPC	SPC-10/100/120S/300	●			
Mitsubishi	Melsec-A	A1N/2N/3N	●	◆	●	●
		A1S(H)/2S(H)/AOJ2(H)	●	◆	●	●
		A2A/3A/2A-S1	●	◆	●	●
		A2U/3U/4U/2USH	●	◆	●	●
	Melsec FX	FX0/1/2/1S/1N/2N/2NC FX3U/3UC/3G	●	◆		
	Melsec Q	00/00J/01/02/02H/06/12/25H	●	◆		●
Omron	SYSMAC C	C50/120/200/500/1000	●			
		CQM1/1H	●	◆		
		CPM1/2A/2C	●	◆		
	SYSMAC CS	CS1G/1H	●	◆		●
	SYSMAC CJ	CJ1G/1M	●	◆		●
Rockwell(AB)	PLC5	PLC5/11/20/30/40/40L/60/60L	●			
	SLC500	SLC5/03/04/05	●			
	Micro Logix	1000 series	●			
	Control/Compact Logix	1756/1761/1768/1769	●			●

Siemens	SIMATIC S5	90/95/100/115/135/155U		◆		
	SIMATIC S7-200	212/214/215/216/221/222/224/226	●			
	SIMATIC S7-300	300 series	●	◆		●
	MPI direct	300 series				
	PC/HMI adapter	300 series	●			
GE-Fanuc	Fanuc 90-30	311/331		◆		
	Fanuc 90-70	731/732/771/772/781/782	●			
Hitachi	HIDIC-H	EH-150	●	◆	●	
		Micro EH	●		●	
Fuji	Micrex-F	F80/120H/250/120/140/150S		◆		
KEYENCE	KV	KV-700/1000	●			
KOYO	DL-205/305/405	D2 240/330/430	●			
Panasonic	MEWNET	FP series	●	◆		
Modicon (Schneider)	Modbus	884/984A/984B/984X		◆	●	
		Slot-mount984		◆	●	
	TWIDO	LCAA 10/16/24DRF	●	◆	●	
		LMDA 20/40DTK	●	◆	●	
		LMDA 20/40DUK	●	◆	●	
		LMDA 20DRT	●	◆	●	
		Modbus TCP				●
Honeywell	Honeywell	HC900	●		●	
Yaskawa	PROGIC-8	PROGIC-8	●		●	
	MP900/2300	MP920/930/2300	●		●	
	Control Pack	CP-9200SH		◆	●	
Yokogawa	FACTORY-ACE	FA-M3	●	◆		●
SAIA	SAIA	PCD2	●	◆		
Delta	DVP	DVP series	●			
FATEK	Facon FB	20MC	●			
Compile	Tiny	TCP32/37/9X	●			
POSCON	POSFA A	POSFA-A		◆		
DDC	DDC	DDC	●		●	
Speed tech	DDC	ST/PS, ST/RS, ASIC/2-7040	●		●	
KDT	XP	CM1-XP1A/2A/3A/4A	●	◆		●
	CP	CM1-CP1A/2A/3A/4A	●	◆		●
	BP	CM2-BP16/32	●	◆		●
EMERSON	EC20	EC20	●			

(2) Inverter / Motion Controller

Maker	Series	CPU Type	CPU Port	Link	1:N	Type
LS	SV-iG5	SV-iG5	●		●	Inverter
OTIS	FDA	6000/7000	●		●	Servo
ABB	ACS	ACS140/400/500	●		●	Inverter
Metronix	Anypack	Anypack	●		●	Servo
ROBOSTAR	Newro	RCS6000/RCM	●		●	Motion
DASA Tech	iMS-J	iMS-J	●		●	Motion
Delta-Tau	PMAC	Mini-PMAC	●			Motion
Emotiontek	MCU	MCU-MA/MP/XA/XP	●		●	Motion
	MCU2	MCU-MA2/MP2/XA2/XP2	●		●	Motion
	MCS	MCS-80A4/P4/A8/P8	●		●	Motion
Gidding & Lewis	MMC	MMC	●			Motion
Mistubishi	FX2N	FX2N-10/20GM	●			Motion
	MR	J2/J3	●			Servo
Rexroth Indramat	VisualMotion	VM7, VM8	●		●	Motion
Hyundai	Hi4	Hi4	●			Motion
IMO	Jaguar	CUB/VXSM/VXM	●			Inverter
Sanken	SAMCO-i	ihf/ipf/QS/QT/It/iF	●			Inverter
Huropec	HC	HC	●			Motion
FEBA	UDICON	UDICON	●		●	Motion
	SMARTCON	SMARTCON	●		●	Motion
IMS	MDRIVE	MDRIVE	●		●	Motor

(3) Measurement

Maker	Series	CPU Type	CPU Port	Link	1:N	Type
AND	AD	AD4326/4327/4328/4329	●		●	Indicator
CERSA	MCI LSN	MCI LSN	●			
IMO	DTP	DTP/TP				
SEWHA	SI 3000		●		●	Indicator
RKC	CB100Z	CB100/400/500/700/900Z	●		●	Temp Control
	SRZ,SR-mini		●		●	
Yokogawa	UP Series	750/550/350		●	●	Temp Control
	UT Series	750/520/350/320		●	●	Temp Control
	UM Series	350/330		●	●	Temp Control
Hanyoung	PX		●		●	Temp Control
	NX		●		●	
	UX		●		●	
Instrument	IGM402		●		●	Pressure
CHIMEI	CB920X	CB920X	●			Indicator

1.1.4 Menu screen for touch screen

Touch screen has [Menu screen] and [Operation screen].

[Menu screen] is the setting mode of touch screen, it can recognize model name of touch screen and used OS version, set current date, time, communications setting, initial setup. Also, it can check if touch screen works normally by diagnosis menu.

[Operation screen] displays painting-picture program of users.

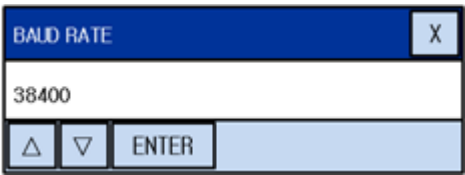
Menu screen and operation screen can be converted easily.

(☞ How to convert screen is explained in [1.1.6] of [chapter 1].)

(1) How to change setting values in menu screen

Black texts of [Menu screen] are only displayed parts, and blue or red texts are the parts to change settings by touch.

If you touch blue or red texts in [menu screen] to change settings, the following window will show available values and enable you to change settings.



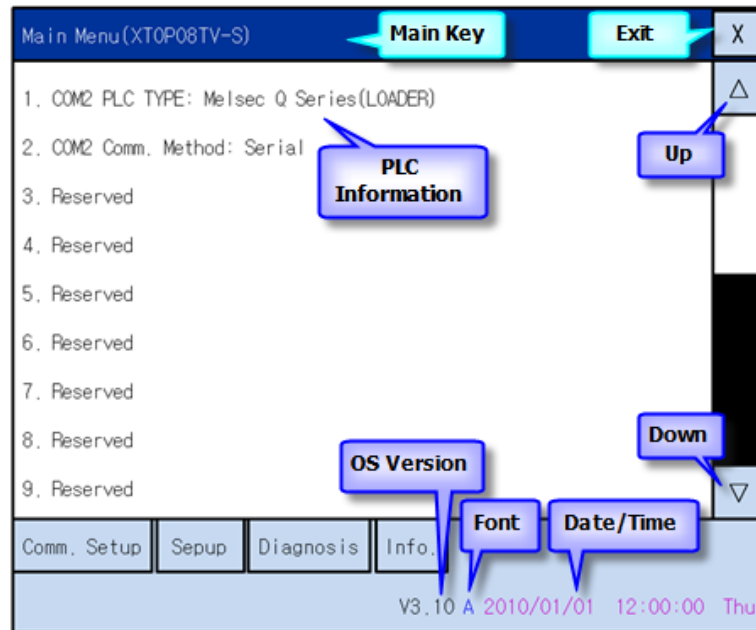
[Figure. Window of changing setting]

It displays the part to change in the title area in blue and shows setting value at center area in white. Setting value can be changed to other value by pressing [arrow] button and input new value by pressing [ENTER] button.

Button	Explanation
[△]	Scroll up in the list of setting values.
[▽]	Scroll down in the list of setting values.
[ENTER]	Input currently-displayed value and close window.
[X]	Close window of current setting.

(2) Main menu

Main menu is the first page of [menu screen].



[Figure. Main menu]

Main menu	Explanation
Main Menu Screen	Shows model name of touch screen set in design project and PLC information Model name of touch screen to be displayed in the [Main Key] above
Comm.Setup Button	Move to communications setup screen
Setup Button	Move to initial setup screen
Diagnosis Button	Move to diagnosis screen
Info. Button	Move to information screen
Main Key	Blue part at top in blue is the [Main Key]. Touch the [Main Key] in screen of communications setup, initial setup, diagnosis and information, it moves to main menu screen. Also can be used to convert [operation screen] to [menu screen]. (Please refer to how to convert screen in [1.1.6] of [chapter 1].)
[X]	Touch [X] exit button, it converts [menu screen] to [operation screen].
[△]	Scroll up on screen page
[▽]	Scroll down on screen page
OS Version	Displays OS version
Font (가/A)	Displays current language of [menu screen]. Can be changed to other language by touch (Korean to English, Chinese to English). English fonts are included with the default font, can be changed to Korean/Chinese font. Korean/Chinese font files can be downloaded from our homepage and transmitted to touch screen.

Date/Time	Displays date and time. Can be changed by touch.
-----------	--

(3) Communications setup screen

This is the screen that setups communications setting between Touch machine and PLC.

The screenshot shows the 'Comm. Setup' screen with the following parameters:

- 1. COM2 Serial Baud Rate: 38400 [BPS]
- 2. COM2 Serial Data Bit: 8 [BIT]
- 3. COM2 Serial Stop Bit: 1 [BIT]
- 4. COM2 Serial Parity Bit: None [BIT]
- 5. COM2 Serial Signal Level: RS-232C
- 6. COM2 Station Num. In Diag.(0-31): 00
- 7. COM2 Time Out: 10 * 100 [mSec]
- 8. COM2 Send Wait: 00 * 100 [mSec]
- 9. COM1 Serial Baud Rate: 38400 [BPS]
- 10. COM1 Serial Data Bit: 8 [BIT]
- 11. COM1 Serial Stop Bit: 1 [BIT]
- 12. COM1 Serial Parity Bit: None [BIT]
- 13. COM1 Station Num. In Diag.(0-31): 00
- 14. COM1 Time Out: 10 * 100 [mSec]
- 15. COM1 Send Wait: 00 * 100 [mSec]
- 16. N:1 Use: No
- 17. N:1 Station Number(0-31): 00
- 18. N:1 Max Machine(2-32): 02

At the bottom, there are tabs for 'Comm. Setup', 'Setup', 'Diagnosis', and 'Info.'. The status bar at the bottom right shows 'V3.10 A 2010/01/01 12:00:00 Thu'.

[Figure. Communications setup]

No.	Explanation
1	Setup [communications Baud rate] of PLC connected with COM2 port.
2	Setup [Data Bit] of PLC connected with COM2 port.
3	Setup [Stop Bit] of PLC connected with COM2 port.
4	Setup [Parity Bit] of PLC connected with COM2 port.
5	Setup signal level(RS-232C/422/485) of PLC connected with COM2 port.
6	Setup [Station Number] (use when communications diagnosis) of PLC connected with COM2 port.
7	Setup [Time Out] of PLC connected with COM2 port. (Timeout:: waiting time for answer of PLC)
8	Setup [Send Wait] of PLC connected with COM2 port. (Send Wait: communicate after waiting setting time when touch screen requires communications.)
9~15	Communications setup of PLC connected with COM1 port which communicates by 232C. (same as COM2 above)
16	Decide if use function of [N:1] function. [N:1] is the communications between multiple Touch machines and one PLC. If set [No], setup of No.17 and 18 below are to be ignored.
17	Setup [Station Number] when use [N:1] function.
18	Setup number of touch machine when use [N:1] function.

**Note**

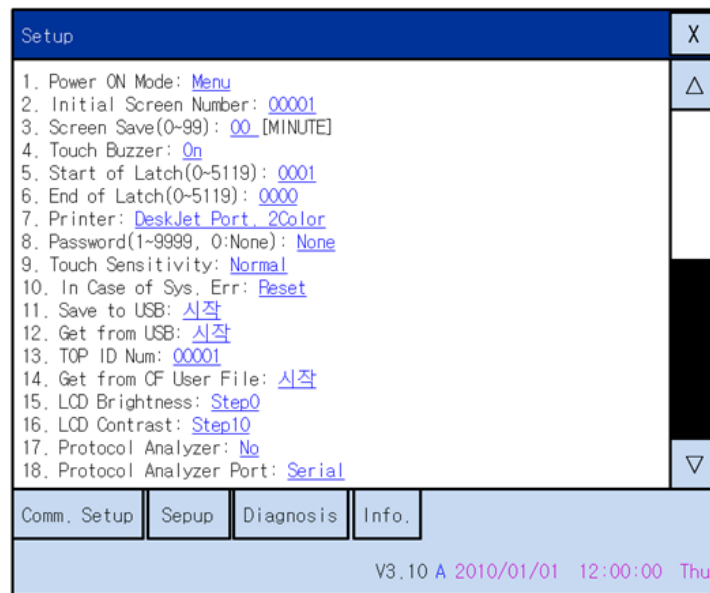
It is the communications of the PLC loader (Loader: CPU direction communications) which adjusts the communications setting value automatically, it does not have to set communications setting separately because touch machine fixes communications setting internally. In this case, it cannot change communications setting value, a good connection between touch machine and it enables communicate.

[Figure. Communications setup]

No.	Explanation
19	Setup [Station] when communicates using Ethernet [N:1].
20	Setup IP address of PLC connected with Ethernet.
21	Setup subnet mask of PLC connected with Ethernet.
22	Setup gateway of PLC connected with Ethernet.
23	Setup port of PLC connected with Ethernet.
24	Setup protocol of PLC connected with Ethernet.
25	Setup [Station Number] of counterpart equipment when you diagnosis Ethernet communications.
26~27	Setup timeout and send wait of PLC connected with Ethernet.

(4) Initial setup screen

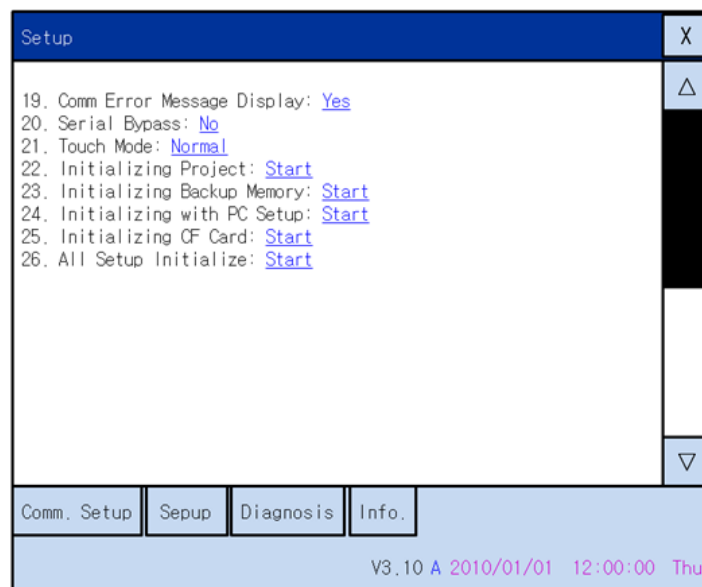
This is the initial setup of the touch machine.



[Figure. Initial setup]

No.	Explanation
1	Setup operation mode when power of touch machine is ON. [Menu] – start with menu screen. [Run] – start with operation screen.
2	Setup first screen number to start in operation screen.
3	If set time by minute unit and does not touch for the set time, screen turns off following turn-off of backlight. At this time, if touch the screen, screen turns on following turn-on of backlight. If use this function, life of backlight can be extended.
4	Decide if use 'beep' buzzer sound when touch.
5~6	Touch machine has internal address of [0~5119] by unit of 16 bit word. Data of this internal address will be deleted if power resets, but data is saved through the power of touch machine if [latch start buffer] and [latch end buffer] are set.
7	To connect printer, set width/length, color.
8	To input code number, it is required to input password when [download]/[upload]/[menu screen enter].
9	Set sensitivity of touch(Normal/Dull).
10	Set operation(Reset/Stop) when system error occurs. [Reset] – reset power of touch screen. [Stop] – stop operation of touch screen.
11~12	Copy data contained in USB memory to touch screen or data in touch screen to USB memory using USB memory storage unit.

13	Used when tries to collect logging or screen capture data in multiple touch screens using one USB memory storage unit. Saved logging or screen capture data is saved in folder classified as TOP ID.
14	Transmit the files such as [design/OS/Font] saved in [USER] folder of CF memory card to touch screen.
15	Control LCD brightness.
16	Control LCD contrast. (except TFT LCD)
17	Set yes or no to use Protocol Analyzer.
18	Choose transmitting method of Protocol Analyzer.

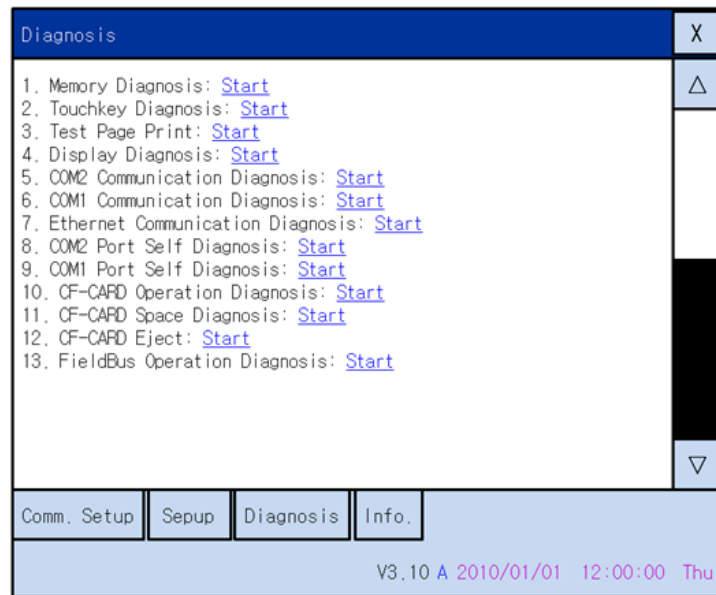


[Figure. Initial setup]

No.	Explanation
19	Set yes or no for automatic display function for communications error message. If set [Yes], it displays communications error message at lower part of operation screen.
20	Set yes or no to use serial bypass.
21	Set touch method. (safe: prevention two touches)
22	Initialize design project files.
23	Initialize backup memory data.
24	Initialize to set value of PC.
25	Initialize data of CF memory card.
26	Converts all setting input to communications setup and initial setup to initialized value. (If initialized, menu screen will be converted to English.)

(5) Diagnosis screen

Diagnosis hardware defects of touch machine or communications connected with PLC.

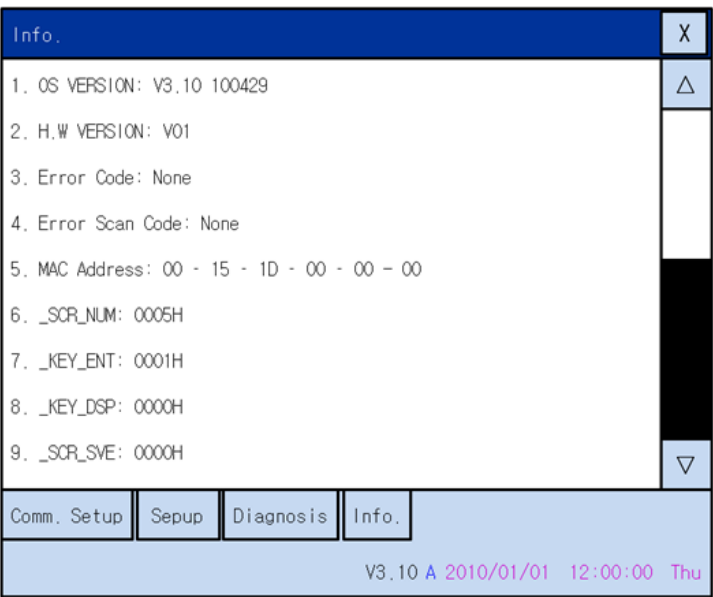


[Figure. Diagnosis]

No.	Detailed explanation
1	Diagnose if there is disorder of [SRAM(backup memory)], [OS], [Project].
2	Diagnose if there is disorder of touch position. Press [X] button at right above to exit from touch key diagnosis.
3	Execute test print of printer connected with touch screen.
4	Diagnose LCD screen condition. Press [X] button, to exit from display diagnosis.
5	Diagnose communications with PLC connected with COM2 (If there is nothing wrong, it will display 'OK').
6	Diagnose communications with PLC connected with COM1 (If there is nothing wrong, it will display 'OK').
7	Diagnose communications with PLC connected with Ethernet port (If there is nothing wrong, it will display 'OK').
8	Self-diagnosis of COM2 port. (Diagnose after short-circuiting transmit/receive of COM2.)
9	Self-diagnosis of COM1 port. (Diagnose after short-circuiting transmit/receive of COM1.)
10	Diagnose if there is a problem with the CF-card.
11	Diagnose capacity of CF-card.
12	To remove CF-card, select start to removed safely.
13	Runs a diagnosis check on the docking status of Field Bus.

(6) Information screen

It shows the version of touch screen and the status of special address.

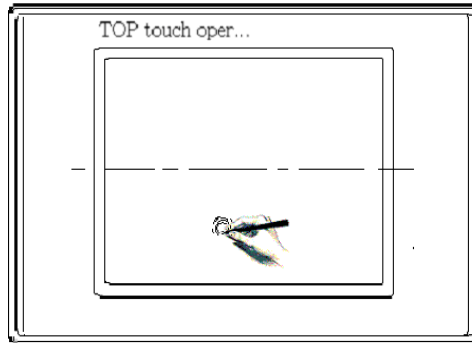


[Figure. Information]

No.	Detailed explanation
1	Displays OS version of touch screen. Displays created date of OS in OS version information.
2	Displays hardware version of touch screen.
3	Displays error code when it occurs.
4	Displays error position when it occurs.
5	Displays Mac address of Ethernet function-added model.
6~75	Displays data of special address.

1.1.5 How to calibrate touch position

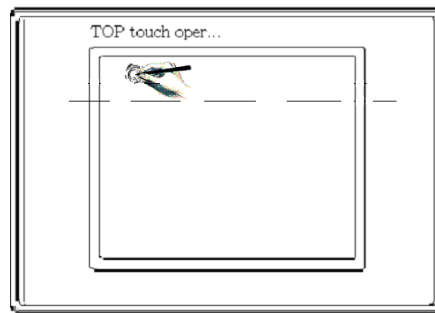
In case of [Analog Touch], position of touch can vary due to external factors like temperature. If position of touch gets distorted, calibrate it as following.



[Figure. Touch position calibration]

- ① Turn off power of touch screen. To divide screen by half, top and bottom, turn on power of touch screen by touching the bottom portion. When the screen turns to white, it resets into [the calibration mode] the moment when your pen/finger is removed from the screen.
- ② A Message [Touch any point to calibration] is displayed on screen and a countdown starts showing numbers [8,7,6,5 ... ,0]. Press anywhere before the countdown ends.
- ③ Black square is shown in center of screen with message [Touch the center point.]. Touch the point with a touch pen correctly. Touch continuously; left upper, right upper, left lower, right lower points along position of square according to displayed message.
- ④ After designating a position, a message [Touch to save.] is displayed. If touched one more time, touch calibration completes with message [Data writing...].

1.1.6 How to convert operation screen to menu screen



[Figure. Move to menu screen]

(1) Method 1

Turn off power of touch screen. If turn on power, [beep] buzzer alarms.

As soon as hearing the buzzer sound, it converts to menu screen when you touch the main key part (LCD screen area under TOP logo) of main screen. If it is difficult to match the timing, touch main key part “Tock!, Tock!, Tock!” after power reset.



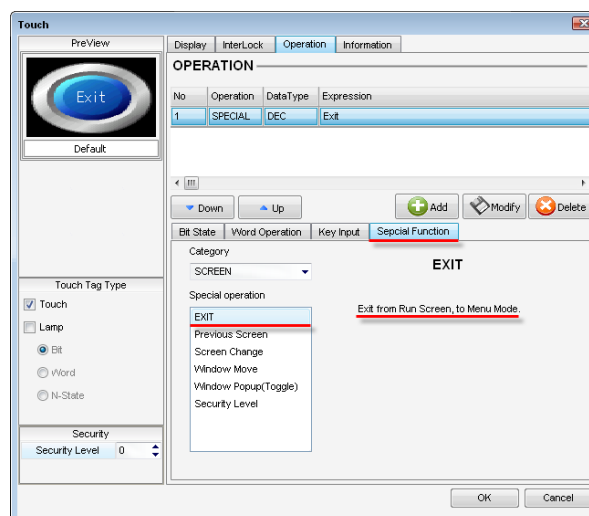
Note If power on with touch screen pressed, and it does not convert to menu screen.
After hearing buzzer sound, touch ‘Tock!’

(2) Method 2

Can register touch button and convert it in design project.

Set [EXIT] out of [Special function] in [Operation] page of touch tag.

Touch this button on screen, it exits operation screen and moves to menu screen.



[Figure. Moves to menu screen using touch button]

1.2 Software outline

Explain XDesignerPlus program requires to design of touch screen.

1.2.1 PC hardware specifications

Minimum requirement: PC specifications to operate XDesignerPlus program.

Item	Min. requirement spec.	Recommended spec.
CPU	Not less than Pentium 3 800MHz	Not less than Pentium 4 1.2Ghz
Memory	Not less than 512 MB	Not less than 1 GB
Graphic Adapter and Monitor	Not less than SVGA(800*600) 16bit color	Not less than SVGA(1024*768) 32bit color
HDD Space	Not less than 500 MB	Not less than 1 GB
Key Board	Windows compatible keyboard	Windows compatible keyboard
Mouse	Windows compatible mouse	Windows compatible mouse
Printer	Windows compatible printer	Windows compatible printer
OS	Not less than Windows 2000/XP	Not less than Windows 2000/XP



Note XDesignerPlus program works normally in Windows Vista and Windows 7. But it is difficult to use when Windows 7 is used by 64 bit because there is a limit for USB transmission.

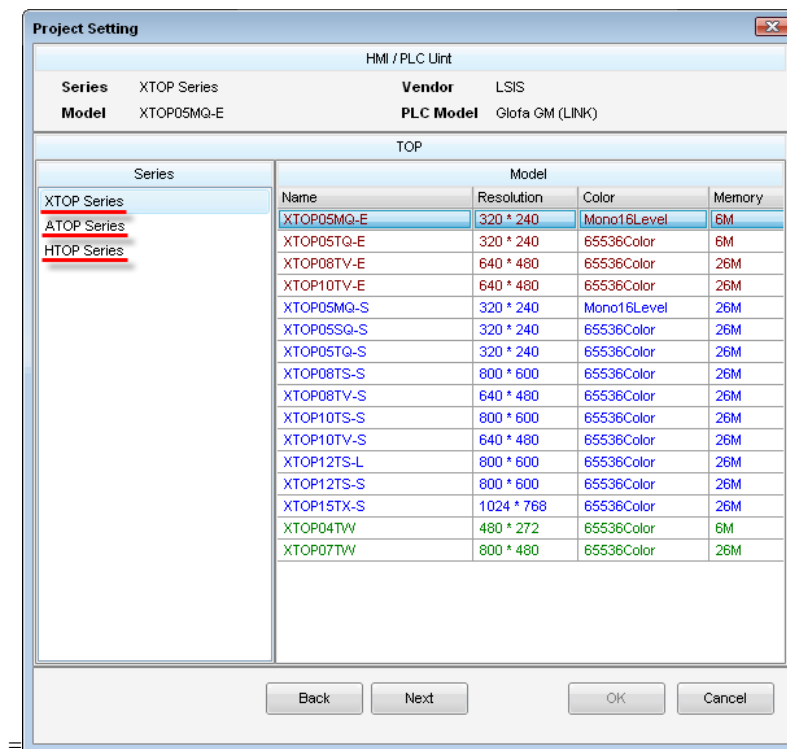
1.2.2 Type of usable touch products with XDesignerPlus

XDesignerPlus program enables design program in all touch machine.

Can use design program in all products such as XTOP/ATOP/HTOP Series as following figure.

[XTOP] Series are brand new products, [ATOP] Series are old.

[HTOP] Series are brand new handheld products.



[Figure. Usable types of touch products]

1.2.3 Draw up touch program and test sequence

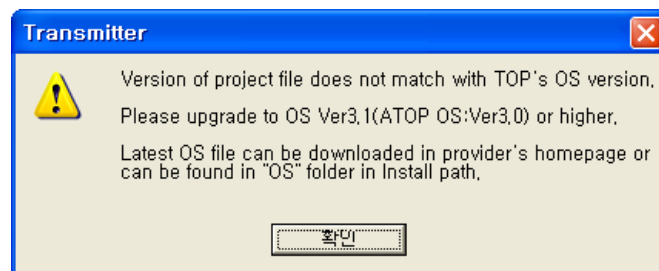
- ① After finishing PLC program, draw up [Paint picture project] along with PLC program.
- ② Transmit completed painting to touch screen. [PC & touch screen] can be transmitted by connecting with [serial/USB/Ethernet] cable.
- ③ Connect [PLC & touch screen] according to each communications method. Connect cable referring to communications manuals from each PLC manufacturer regarding wiring of [PLC & touch screen]. Wiring (schematics) drawings and how to setup communications are well explained in communications manuals and also can be downloaded from homepage.
- ④ Check if communicating well and test design. Can check communications status in [Diagnosis screen], [Menu screen] of touch screen. If communications does not work between PLC and touch screen, touch screen does not work either.

1.2.4 Relation between XDesignerPlus version and OS version

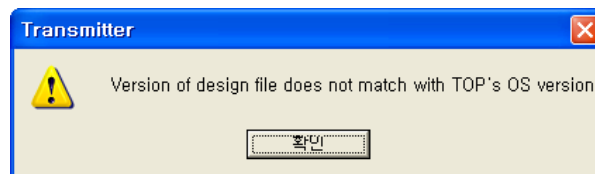
OS installed in design software and touch screen has to be compatible. That is, version has to be the same with each other. If you buy latest touch screen model, OS is installed in it basically. So, you can use it without problem if paint picture is included with new software.

Note: Check OS version of software and touch screen in case of using old model, or old OS is installed in touch screen, or using old software.

If version of software and OS version of touch screen is different, error message such as the following figure is displayed and cannot transmit.



[Figure. Error message during transmission]



[Figure. Error message during transmission]

XDesignerPlus program is brand new software which has been newly developed. In order to paint picture with this software, OS version of touch screen should be new also.

In case of programming design of ATOP touch screen with XDesignerPlus program, use 3.0 OS version.

In case of programming design of XTOP touch screen, use 3.1 OS version.

Also, in case of using design program, TOP-Designer for ATOP which was launched before the launch of XDesignerPlus program, use 2.3 OS version, in case of using XTOP-Designer for XTOP, use 2.4 OS version.

HTOP model is the latest launched touch screen and can paint pictures only with XDesignerPlus program. So, use 3.1 OS version as OS.

Please refer to relation between software and OS version clearly shown in chart below.

Touch model	Software	OS version	
Old ATOP	TOP-Designer	V 2.3	
	XDesignerPlus	In case PLC is Melsec	Exclusive OS (V3.0 Melsec)
		Others	V3.0
New XTOP	XTOP-Designer	V 2.4	
	XDesignerPlus	V 3.1	
New HTOP	XDesignerPlus	V 3.1	

Old ATOP has two separate OS because of specific PLC due to small OS saving space. Regarding Melsec PLC, two OS's are provided. In deciding to use Melsec or not considering it occupies a large space. So, in case of using Melsec PLC, use V3.0 (Melsec) as exclusive OS and use general V3.0 OS for other cases.

If you install XDesignerPlus program, the OS of touch screen is contained in the OS folder of installed route and updates can be executed easily by transmitting OS files.

Basic installation route is [C:\Program Files\M2I Corp\XDesignerPlus\OS].

(Regarding how to transmit OS files, refer to [45.3] of [chapter 45].)

1.2.5 Compatibility of XDesignerPlus and old software

[*.TOP], [*.XOP] which's files are designed with old software, TOP-Designer, XTOP-Designer can be converted and used as [*.DPX] which is XDesignerPlus file.

But, [*.DPX] files cannot be converted to [*.TOP], [*.XOP] files in reverse order.

1.2.6 How to convert design files of previous version to XDesignerPlus

[*.TOP], [*.XOP] files cannot be edited in XDesignerPlus program.

So, it does not need to convert it to XDesignerPlus file.

If you install XDesignerPlus program, [XDPCConvertor] program is also installed which can convert old design files to [*.DPX] files.

This program enables design files which are drawn up by [XTOP-Designer], [TOP-Designer], [PMU-Editor] to be converted so that those can be executed in [XDesignerPlus].

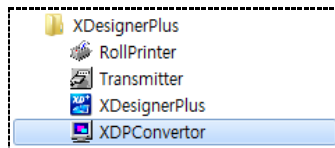
(1) Execute XDPConvertor

[XDPConvertor] is the program provided together when [XDesignerPlus] is installed.

Execute it by double-clicking XDPConvertor icon in wallpaper in figure below, or execute the shortcut menu [M2I Corp]–[XDesignerPlus]–[XDPConvertor] from [Start] menu.

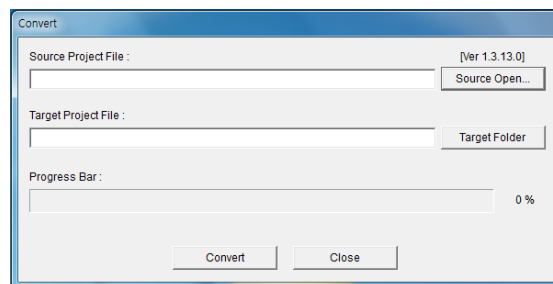


[Figure. XDPConvertor icon in wallpaper]



[Figure. Shortcut menu of XDPConvertor from start menu]

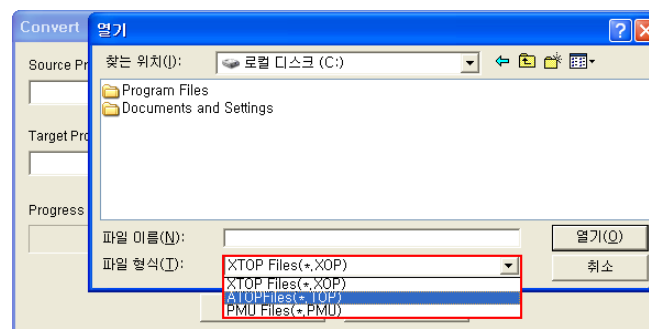
Executing [XDPConvertor], the window is shown below.



[Figure. Execute XDPConvertor]

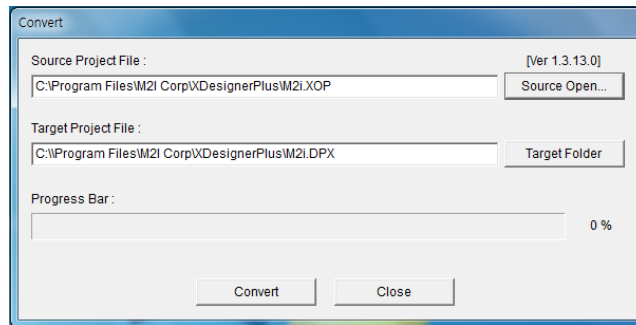
(2) File conversion 파일 변환

- ① First, press [Source Open] button and select design file to convert.



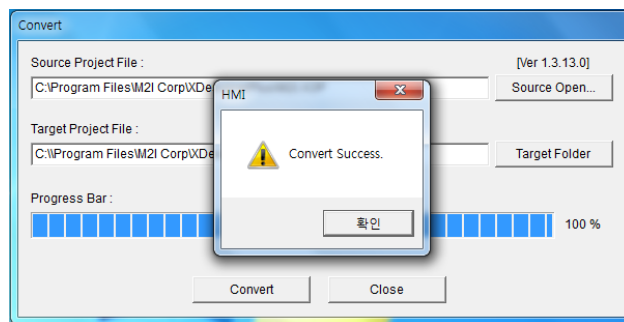
[Figure. Select design file to convert]

- ② If you selected design to convert, designate saving route of [*.DPX] files which are created after automatic conversion and file name. Press [Target Folder] button and designate the route and file name if you change the route and file name.



[Figure. Designate route of XDPConverter]

- ③ Press [Convert] button after setup, conversion to [*.DPX] file completes so that it can be used in XDesignerPlus program



[Figure. XDPConverter conversion completed]

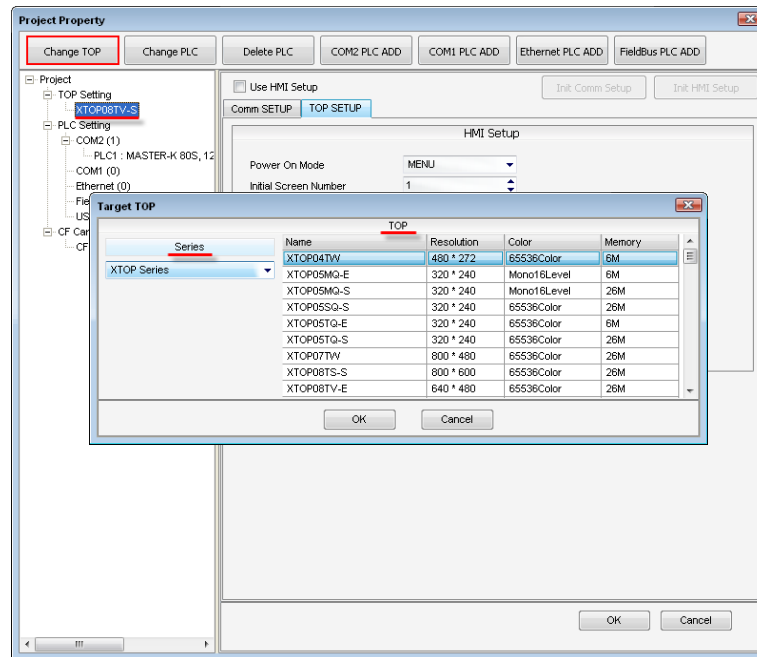
Open the created [*.DPX] file after executing XDesignPlus program or by double-clicking the created [*.DPX] file.

(3) The parts which needs to setup by manual after conversion

There are some parts which needs to setup by manual after conversion.

- ① In case of converting [*.TOP] files which are ATOP files

Need to designate touch screen model in [Project setup] of [Project] menu again. It does not need to designate model name because touch screen models are grouped along each resolution in the existing TOP-Designer, but it requires you to designate model name of touch screen in XDesignerPlus.



[Figure. Changing touch model name]

Select wrong model name of touch screen, the design file is not transferred to Touch machine.

Also, the existing files are backed up as [*.OLD] files after conversion. The existing files named as [*.TOP] cannot be opened due to internal change. So, it is recommended to use it after changing [*.OLD] to [*.TOP] in case of using the existing files.

② In case of converting [*.TOP] or [*.XOP] files

The content of [Main body setup] of [File] menu cannot be converted in [TOP-Designer] and [XTOP-Designer]. This [Main body setup] is the same as [HMI set use] of [Project setup] of [Project] menu in [XDesignerPlus].

So, need to check [HMI set use] and reset it in case of design using main body setup.

(Refer to [7.12.3] of [chapter 7] regarding how to set HMI.)

The HMI Setup dialog box is shown with the 'Use HMI Setup' checkbox checked. It has two tabs: 'Comm SETUP' and 'TOP SETUP'. The 'Comm SETUP' tab is active, displaying three sections: 'COM2 Setup', 'COM1 Setup', and 'N : 1 Setup'.

COM2 Setup			
Serial Baud Rate	38400	Serial Signal Level	RS-232C
Serial Data Bit	8	Station Num. In Diag. (0~31)	0
Serial Stop Bit	1	Time Out [x100 mSec]	10
Serial Parity Bit	None	Send Wait [x10 mSec]	0

COM1 Setup			
Serial Baud Rate	38400	Station Num. In Diag. (0~31)	0
Serial Data Bit	8	Time Out [x100 mSec]	10
Serial Stop Bit	1	Send Wait [x10 mSec]	0
Serial Parity Bit	None		

N : 1 Setup			
N : 1 Use	NO	N : 1 Station Number (0~31)	0
		N : 1 Max Machine (2~32)	2

[Figure. HMI set use]

Also, conversion cannot be done in case of using barcode.

So, need to set barcode setup in figure below.

The Barcode setup dialog box is shown. It has a 'Project Property' title bar and a tree view on the left. The tree view shows the project structure: 'Project' > 'TOP Setting' > 'XTOP08TV-S' > 'PLC Setting' > 'COM2 (1)' > 'PLC1 : MASTER-K 80S, 12' > 'COM1 (1)' > 'PLC2 : Barcode Reader'. The 'PLC2 : Barcode Reader' item is selected.

The main area of the dialog box is divided into two sections: 'PLC Info' and 'Barcode reader Info'.

PLC Info

Vendor Name :	OTHERS
PLC Name :	Barcode Reader
PLC Alias :	PLC2

Barcode reader Info

Barcode Type : ☒ Barcode Reader (Normal) ☐ Two-dimensional Code reader

Write Address (Data of Barcode)

☒ Internal ☐ External 0000 *OK

Write Word ('0' is unlimited) 0

OK Cancel

[Figure. Barcode setup]

CHAPTER 2 Installation

CHAPTER 2 – Installation

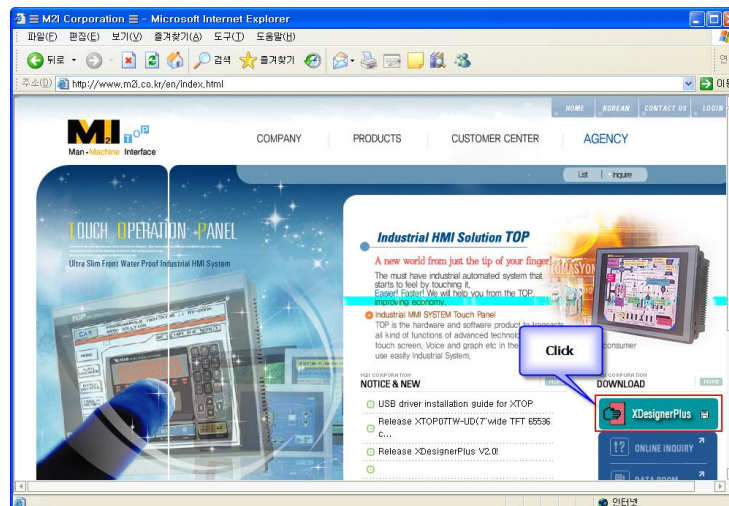
2.1 Installation

Install XDesignerPlus program.

2.1.1 Download XDesignerPlus program

Download XDesignerPlus from homepage of M2l(www.m2i.co.kr) for free.

Select [XDesignerPlus] button which is located at right-bottom of main page in figure below, enter to download page.



[Figure. Enter to XDesignerPlus download page at homepage]

Download page of XDesignerPlus consists of the following items.



[Figure. XDesignerPlus download page of homepage]

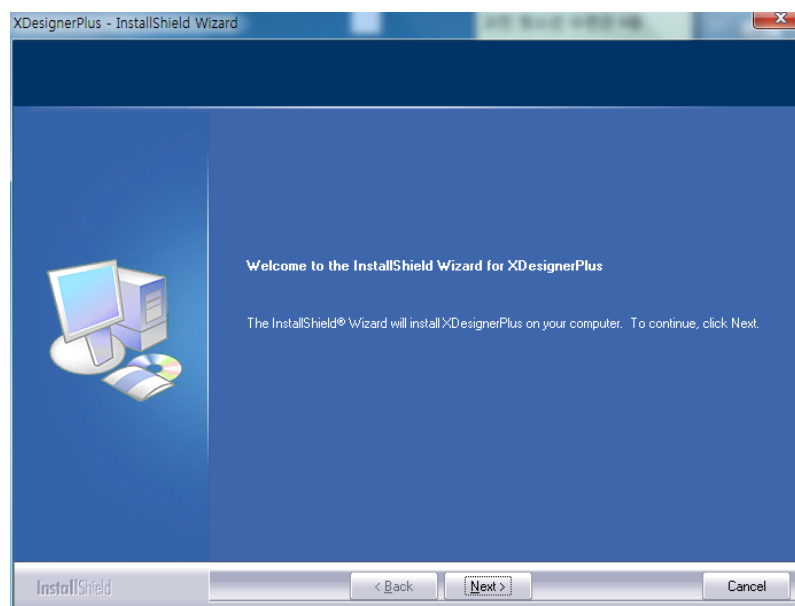
List	Explanation
Install program	Download in case of first installation of XDesignerPlus to PC.
Patch program	Download when XDesignerPlus is already installed in PC and need to update it to latest version. Due to [Online update] function, update is done automatically if executing XDesignerPlus program in internet-enabled environment. (18 Refer to [48.1] of [chapter 47] regarding online update function.)
User's manual	XDesignerPlus user's manual which is PDF file.
Exclusive OS for XTOP	Touch screen OS file for XTOP in case of using XDesignerPlus. Does not have to download it because OS is contained in installation route if install XDesignerPlus program.
Exclusive OS for ATOP	Touch screen OS file for ATOP in case of using XDesignerPlus. Does not have to download it because OS is contained in installation route if install XDesignerPlus program.

2.1.2 Installation of XDesignerPlus Full Install

Explain how to install XDesignerPlus Full Install program.

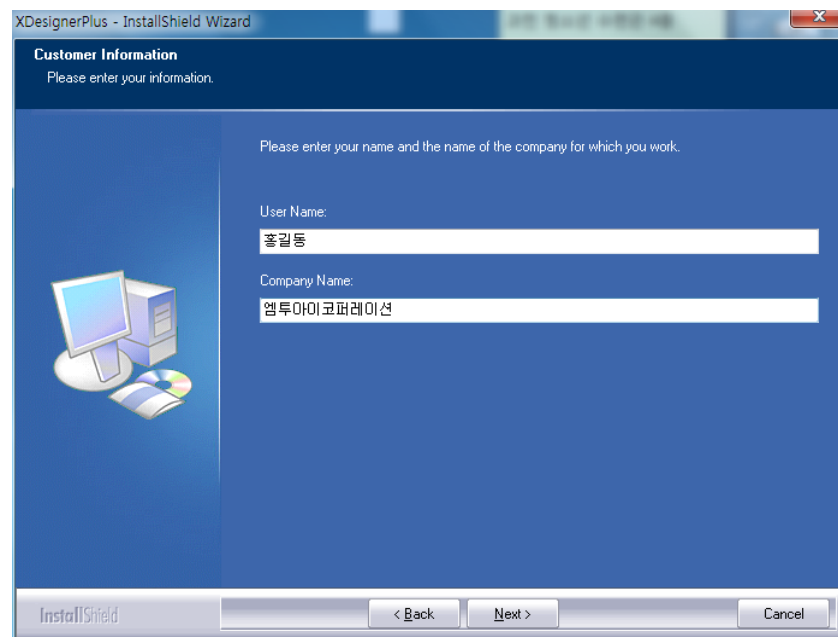
Install [Full Install] to PC if XDesignerPlus is not installed.

- ① Downloaded file is compressed. Release the compression.
- ② Execute it by [Double-click] installation file(XDesignerPlus(V) Setup.exe) with mouse.
- ③ Executing the installation program, [InstallShield Wizard] is executed. Press [Next] button.



[Figure. Start screen of InstallShield Wizard]

- ④ Input User Name and Company Name, press [Next] button.

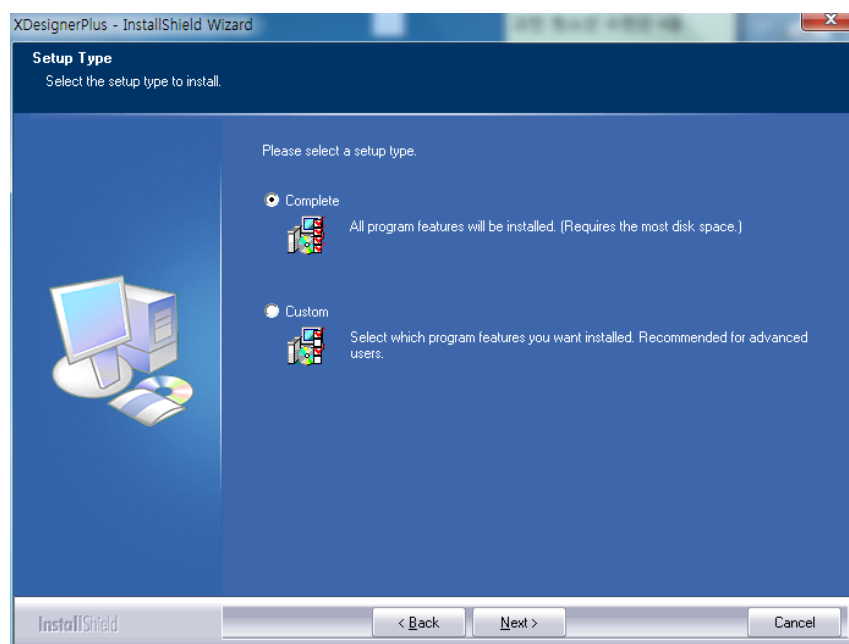


[Figure. Input User name and Company Name]

- ⑤ Select setup type, press [Next] button.

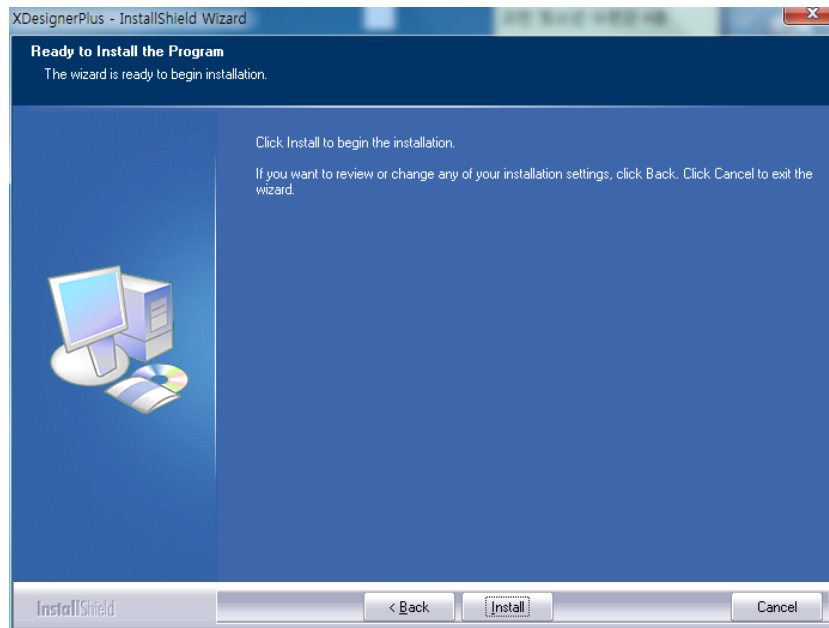
Complete – Install all items, installation route is designated automatically as
[C:\Program Files\WM2I Corp\WXDesignerPlus].

Custom – Can designate items and installation route to the location desired.



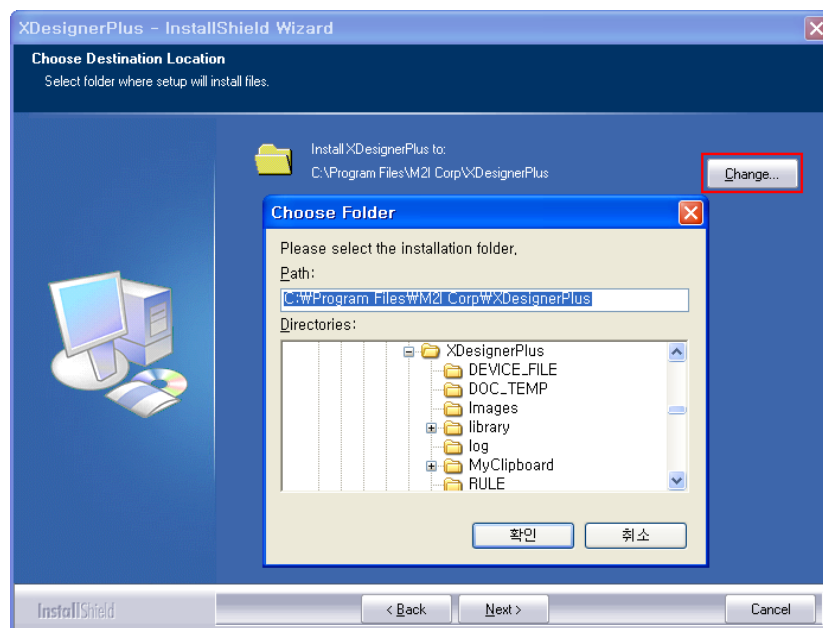
[Figure. Select Setup Type]

- ⑥ Start screen is displayed shortly after selecting [Complete] type. Press [Install] button or press [Back] button to change previous setting. If press [Install] button, installation begins and completes.



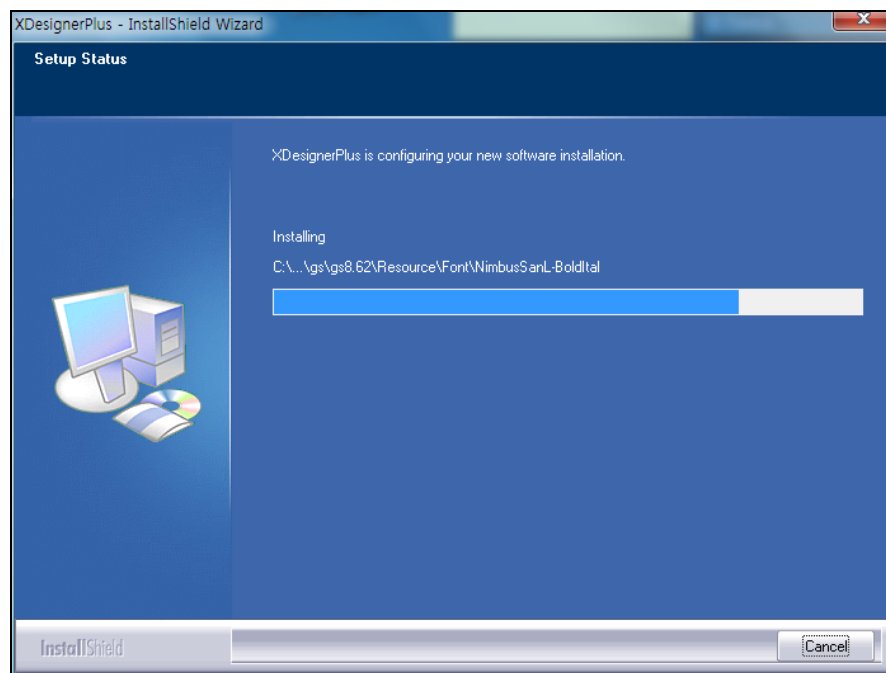
[Figure. Installation start screen]

- ⑦ Select [Custom] type, can designate installation route as following figure. Press [Next] button, installation is begins and completes.



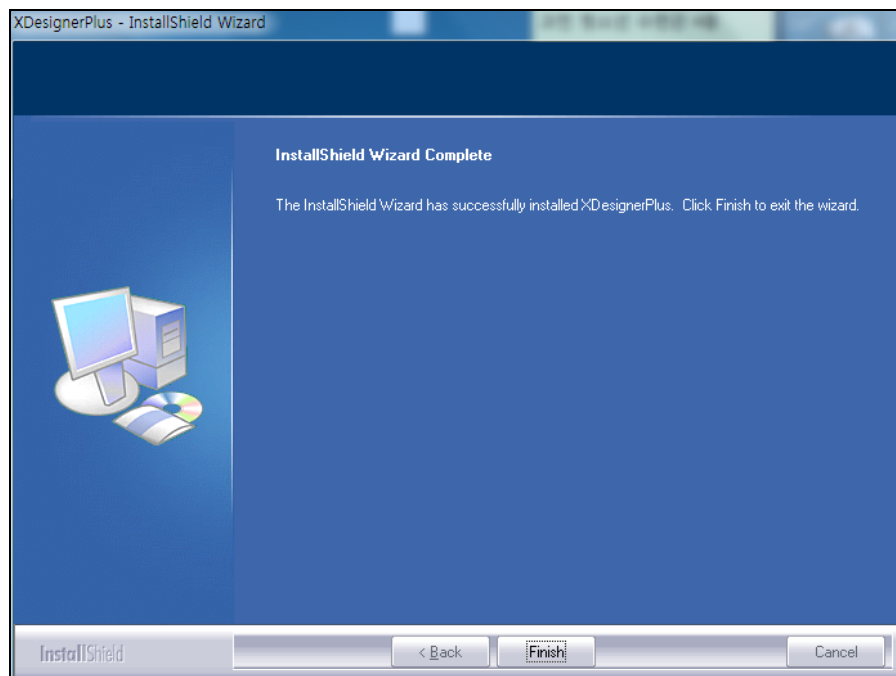
[Figure. Select installation route]

The screen of proceeding installation.



[Figure. Installation under proceeding]

The screen of completing installation.



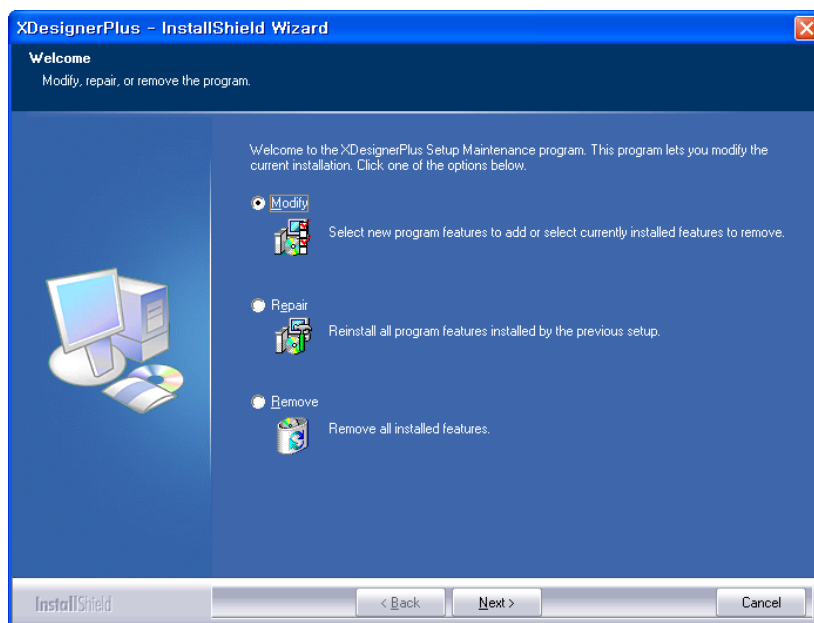
[Figure. Installation completed]

2.1.3 Installation of XDesignerPlus patch program

To install patch program to update XDesignerPlus program version installed into PC.

Download [XDesignerPlus patch program] from homepage of M2I (www.m2i.co.kr) free and install it as explained in <Full install installation program>.

Install the patch program by double-clicking it, following screen is shown.



[Figure. Install patch program]

Select the option and press [Next] button, installation of patch program begins.

Item	Explanation
Modify	Can install the wish functions only.
Repair	Update and install XDesignerPlus program installed in PC.
Remove	<p>Remove XDesignerPlus program installed in PC.</p> <p>Select [Remove] and press [Next] button, program removal confirmation message is shown as following.</p> <div></div> <p>Press [Yes], to remove XDesignerPlus program.</p>

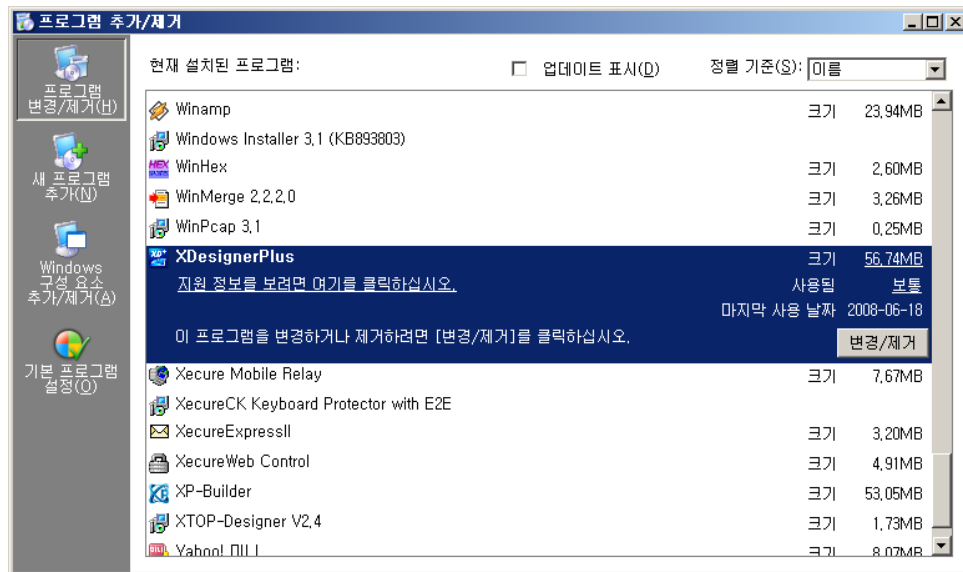
2.1.4 Uninstallation of XDesignerPlus program

In order to remove the installed XDesignerPlus program, select [program add/remove] from [Control panel] of Windows and call program add/remove screen below [Figure. Program add/remove].

Select XDesignerPlus and click [Change/remove] button, removal of XDesignerPlus is completed.



Note Though the installed XDesignerPlus is removed, design project files, image library created by user are not removed.



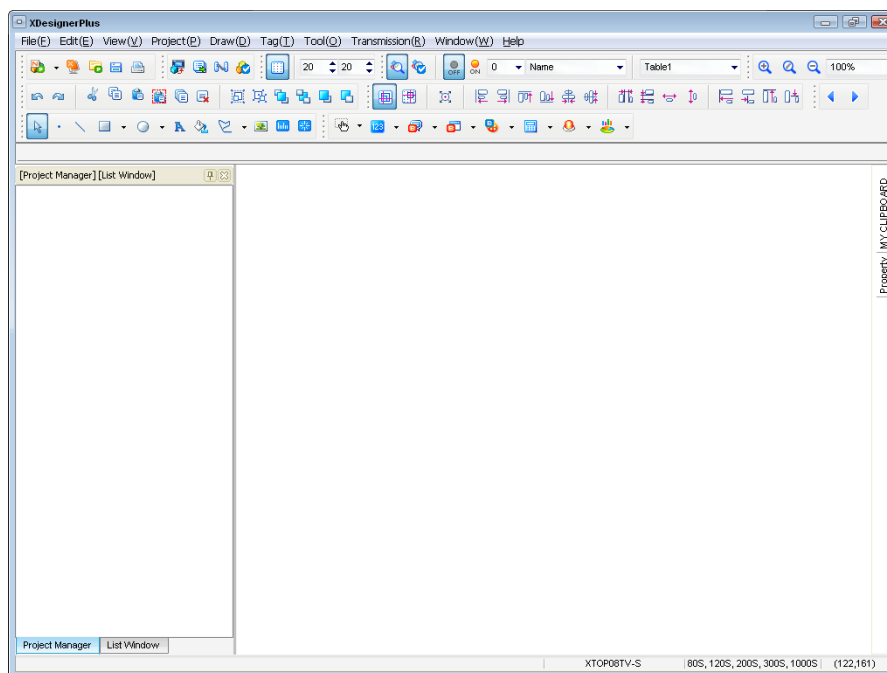
[Figure. Program add/remove]

2.2 Execute XDesignerPlus program

If XDesignerPlus program installation is completed normally, XDesignerPlus icon is created in wallpaper.

Also, the shortcut icon of XDesignerPlus is created in the route of [Start]–[All program]–[M2I Corporation]–[XDesignerPlus].

Double-click the icon of wallpaper or click XDesignerPlus icon from Windows start menu, XDesignerPlus program initiates as following.



[Figure. Executing screen of XDesignerPlus program]



Note XDesignerPlus program is displayed in English when it is executed first time.

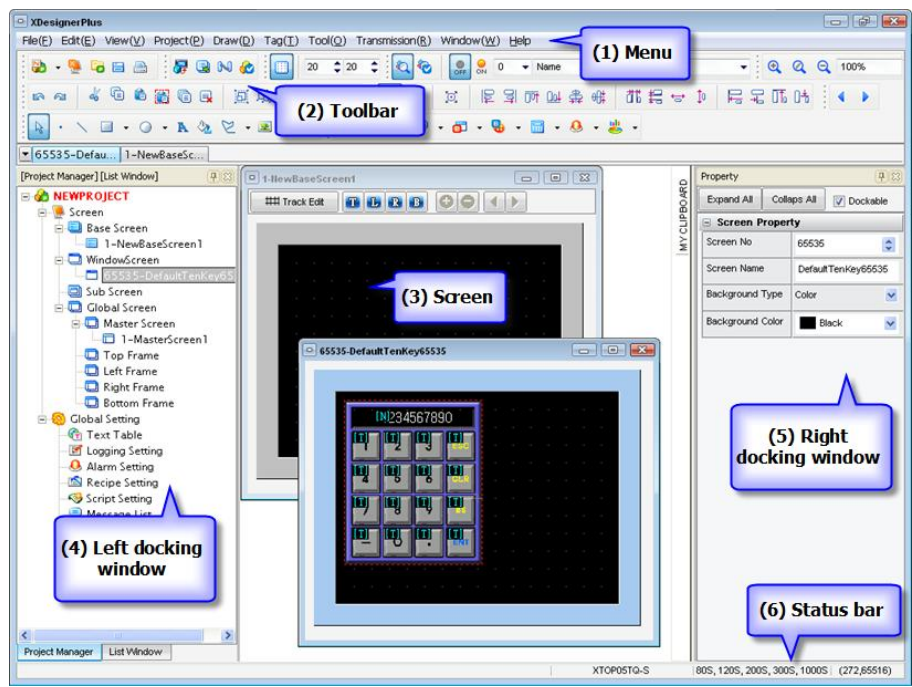
To display it in Korean or Chinese, it can be changed in [LANGUAGE] of [View] menu.

CHAPTER 3 Entire composition of XDesignerPlus

CHAPTER 3 – Entire composition of XDesignerPlus

3.1 Composition of XDesignerPlus

The entire screen of XDesignerPlus is composited as below figure.



[Figure. Entire screen composition]

It shows [Menu] at the very center, [Toolbar] under menu. It also shows [Docking window] at both left and right, displaying [screen] at the center. It shows [Status bar] at the very bottom right side.

3.2 Menu composition

It is the menu for programming. It consists of file, edit, view, project, figure, tag, tool, transmission, window and help.

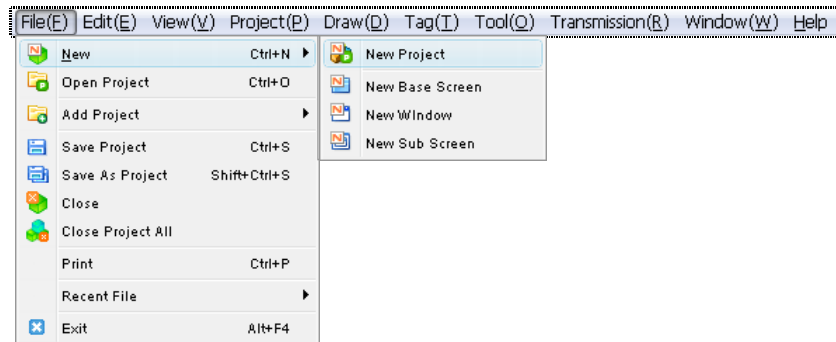
Each menu is explained in [chapter 4] in details. The detailed composition of each menu is explained in this chapter.

3.2.1 File menu (Alt + F)

It carries out the works of a new project create/save/open/close/exit in this file menu.

Also, it is provided with creation of base screen/window screen/subscreen and multiple project functions using [Project add] menu.

(☞ Refer to [chapter 4] regarding file menu.)



[Figure. File menu]

(1) Create (Ctrl + N)

Create project and each screen.

Menu	Explanation
New Project	Create new project
New Base Screen	Create one base screen adding it to existing base screen
New Window Screen	Create one window screen adding it to existing window screen
New Subscreen	Create one subscreen adding it to existing subscreen

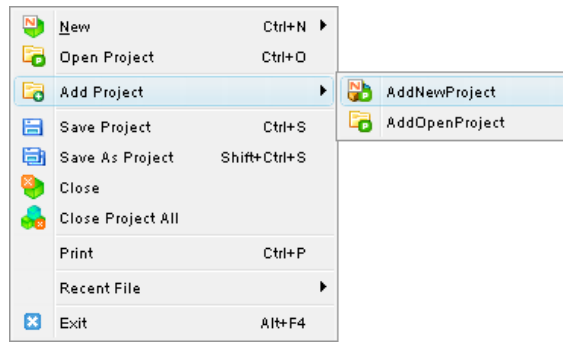
(2) Open project (Ctrl + O)

Draw it up with XDesignerPlus and open design project file saved as [*.DPX] file.

(3) Add project

This menu offers multiple project functions.

Multiple projects are the function which can open and edit maximum 4 design projects in one XDesignerPlus program. It can use the function such as copy screen between the projects as well as edit other design project simultaneously with this function.



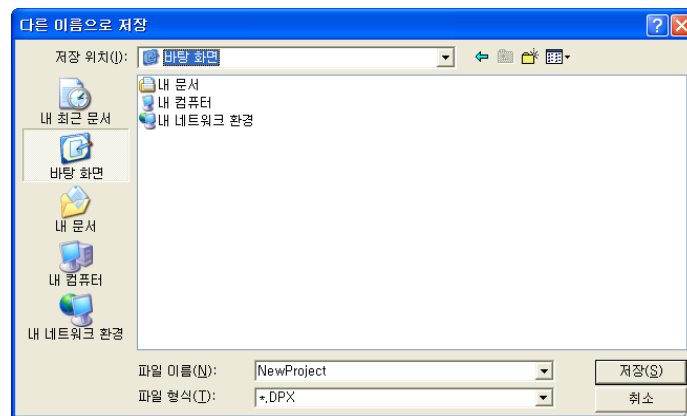
[Figure. Add project]

Menu	Explanation
Add New Project	Create new project and add it to very bottom of [Project manager].
Add Open Project	Open existing saved project and add it to very bottom of [Project manager].

(4) Save project (Ctrl + S)

Save currently open design project.

In case of design project which has never been opened, it enables to save it as [*.DPX] file by designating the route to save and [File name] as below screen.



[Figure. Save project]

(5) Save it in other name (Shift + Ctrl + S)

Save currently-open design project as separate file by designating other name.

(6) Close

Close the active design project out of currently-open design projects.

(7) Close all projects

Close all currently-open design projects.

(8) Print (Ctrl + P)

Print the content of project.

(9) Recent file

Show the list of recently-open design project and open one of projects in the list by selecting one.

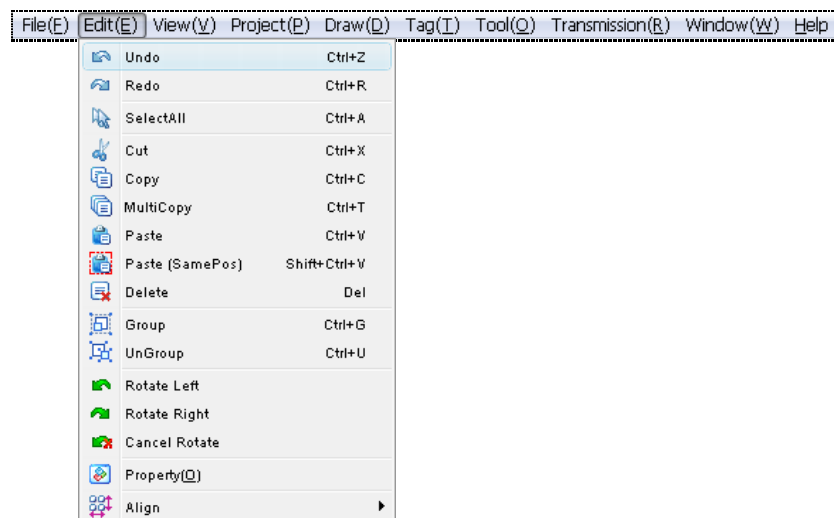
(10) Exit (Alt + F4)

Exit XDesignerPlus program.

3.2.2 Edit menu (Alt + E)

Edit menu edits the figures and tags registered in the screen.

(☞ Refer to [chapter 5] regarding edit menu for more details.)



[Figure. Edit menu]

Menu	Explanation
Undo (Ctrl + Z)	Cancel most recently-edit part one by one during edit. Undo is available 50 times maximum for each screen.
Redo (Ctrl + R)	Return the undo-part to original status one by one during edit. Redo is available 50 times maximum for each screen.
Select All (Ctrl + A)	Select all figures and tags registered currently-active screen.
Cut (Ctrl + X)	Cut the selected figures or tags or group.
Copy (Ctrl + C)	Copy the selected figures or tags or group.
Multi Copy (Ctrl + T)	Copy the selected figures or tags or group in the set width as many as set in X/Y axes.
Paste (Ctrl + V)	Paste the copied or cut figures or tags or group to the position that mouse clicks.
Paste(Same Pos) (Shift + Ctrl + V)	Paste the copied or cut figures or tags or group to the same position
Delete (Del)	Delete the selected figures or tags or group.
Group (Ctrl + G)	Combine more than two figures or tags in group.
UnGroup (Ctrl + U)	Ungroup the group
Rotate Left (<)	Rotate the selected figures or tags or group to left.
Rotate Right (>)	Rotate the selected figures or tags or group to right.
Cancel Rotate (/)	Cancel the rotated figures or tags or group to right.
Property (Enter)	Open property window of selected figures or tags or group.
Align	Align the selected figures or tags or group to right.

(1) Align

Align function is provided as following figure.



[Figure. Align function]

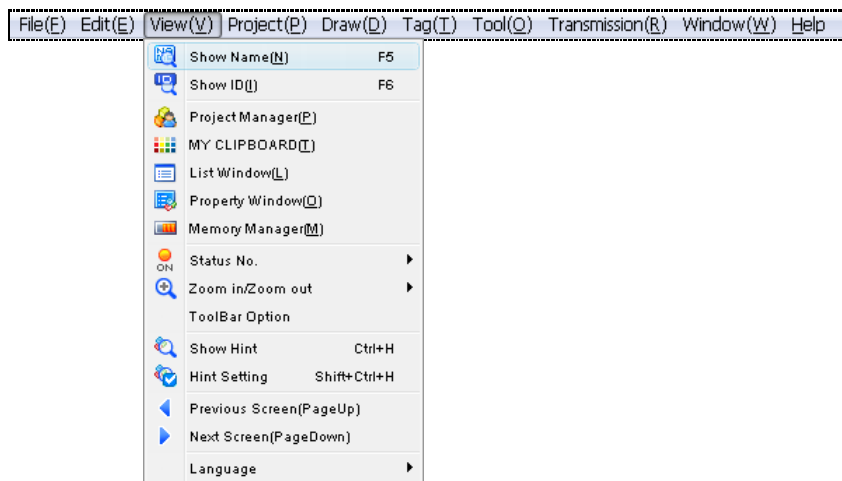
Menu	Explanation
Bring to Front (Ctrl + Home)	If the figures are overlapped, place the selected figure upfront.
Send Back (Ctrl + End)	If the figures are overlapped, place the selected figure most backward.
Align Left (Shift + Ctrl + Left)	Align the selected more than two figures or tags or groups to left.
Align Right (Shift + Ctrl + Right)	Align the selected more than two figures or tags or groups to right.
Align Top (Shift + Ctrl + Up)	Align the selected more than two figures or tags or groups in a row upward.
Align Bottom (Shift + Ctrl + Down)	Align the selected more than two figures or tags or groups in a row downward.
Align Center (Shift + Ctrl + C)	Align the selected more than two figures or tags or groups in the center.
Align Middle (Shift + Ctrl + M)	Align the selected more than two figures or tags or groups in the middle of width.
Horizontal space equally	Align horizontal space equally between the selected more than two figures or tags or groups.
Vertical space equally	Align vertical space equally between the selected more than two figures or tags or groups.
Horizontal center in window	Move the selected figures or tags or groups to horizontal center in window.
Vertical space in window	Move the selected figures or tags or groups to vertical center in window.
Grow to largest width	Grow it to the largest width out of the selected more than two figures or tags or groups.
Shrink to smallest width	Shrink it to the smallest width out of the selected more than two figures or tags or groups.
Grow to largest height	Grow it to the largest height out of the selected more than two figures or tags or groups.
Shrink to smallest height	Shrink it to the smallest height out of the selected more than two figures or tags or groups.

3.2.3 View menu (Alt + V)

View menu shows or hides several docking windows provided at left and right of the program .

Also, viewing method such as popup help, ON/OFF status, enlarge/shrink, used languages are selected in the screen.

(Refer to [chapter 6] regarding view menu for more details.)



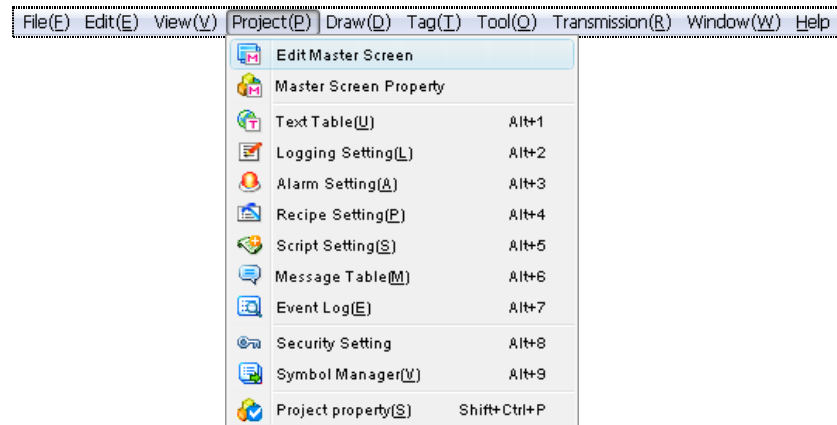
[Figure. View menu]

Menu	Explanation
View tag name (F5)	[Tag name] is shown in [Popup help] displayed at left-top of the registered tag in screen.
View tag ID (F6)	[Tag ID] is shown in [Popup help] displayed at left-top of the registered tag in screen.
Project manager	As the left docking window, it is the window which recognizes and manages design project screen and entire setup status.
My clipboard	As the right docking window, it is the function to use conveniently for repeat works by registering frequently-used figures, tags and groups.
List window	As the left docking window, show figures, tags and groups registered in the list of currently-open screen as list type.
Property window (F11)	As the right docking window, show the property of the selected figures and tag registered in screen.
Memory manager	As the left docking window, show memory use status of used address in the currently-open screen as lamp type.
Status number	Can check ON/OFF status of tag and the shape of tag along the status of 0~15 bit.
Enlarge/Shrink	Enlarge or shrink the screen. It supports 40~400%.
Toolbar option	Edit toolbar. Can select and register the frequently-used toolbar.
View hint (Ctrl + H)	Decide if use [Popup help] attached to tag.
Set hint (Shift + Ctrl + H)	It is as [Tool]-[Edit option]-[Popup help], set [Font color/background color] along pop-up help.
Previous screen (PageUp)	Move from open base screen, window screen, sub-screen and global screen to the screen of previous number.
Next screen (PageDown)	Move from open base screen, window screen, sub-screen and global screen to the screen of next number.
Language (Display English)	Select the language of XDesignerPlus program. It is in English basically, and can select [English, Korean, Chinese and the Arab status

3.2.4 Project menu (Alt + P)

Project menu is the part that sets the entire design project.

(Refer to [chapter 7] regarding project menu for more details.)



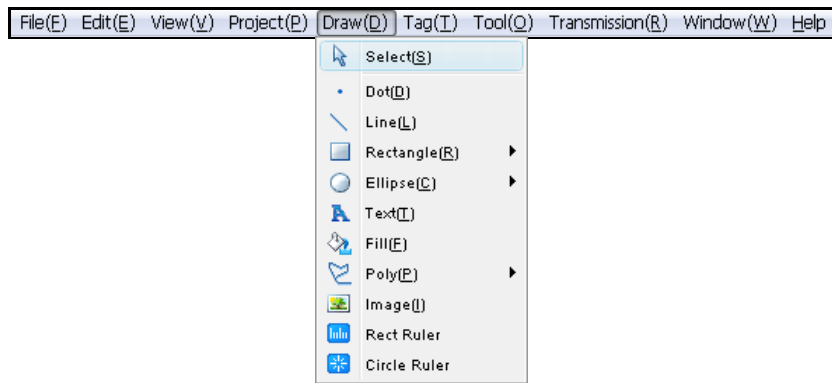
[Figure. Project menu]

Menu	Explanation
Edit Master screen	Open and edit master screen which is global screen.
Master screen property	Show [Screen property] of master screen which is global screen.
Alarm setting	Set alarm data.
Logging setting	Set logging data.
Recipe setting	Set recipe (parameter) data.
Script setting	Set global script.
Security setting	Set password per level and security level per screen.
Event Log	Set eventlog data.
Message list	Input message data.
Symbol manager	Set symbol list.
Text Table	Set multiple language text data in case of multiple language .
Project property (Shift + Ctrl + P).	Set the touch, model, PLC type for entire project..

3.2.5 Draw menu (Alt + D)

Draw menu provides with the multiple figures which requires to painting pictures.

(Refer to [chapter 8] regarding Draw menu for more details.)

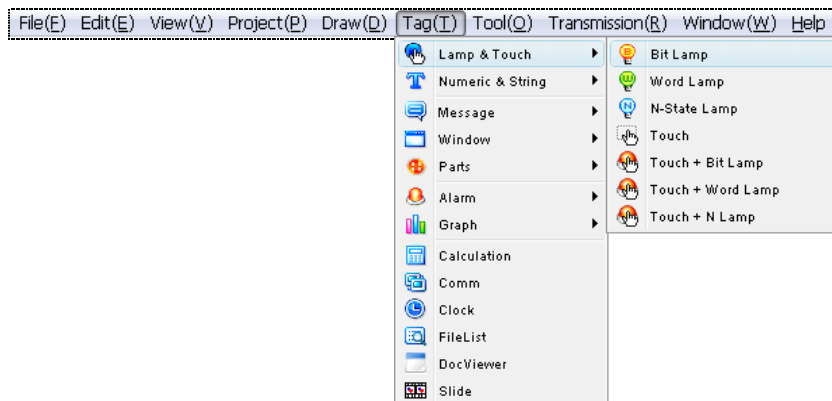


[Figure. Draw menu]

Menu	Explanation	Detailed kinds
Select	Select the figures and tags registered in screen in choice mode.	
Dot	Draw the dot.	
Line	Draw the line.	
Rectangle	Draw the rectangle.	Rectangle, RoundRect
Circle	Draw the circle.	Circle, Arc, Pie, Chord
Character line	Write the characters.	
Paint	Paint the closed area color.	
Poly	Draw the polygon.	Polyline and Polygon
Image	Register the images such as bitmap and jpg.	
Rect Ruler	Draw the square graduation.	
Circle Ruler	Draw the circle graduation.	

3.2.6 Tag menu (Alt + T)

The tag menu provides with the multiple tags which designates the operation, or displays and control the data of controller. (☞ Refer to [chapter 9~43] regarding the tag menu for more details.)



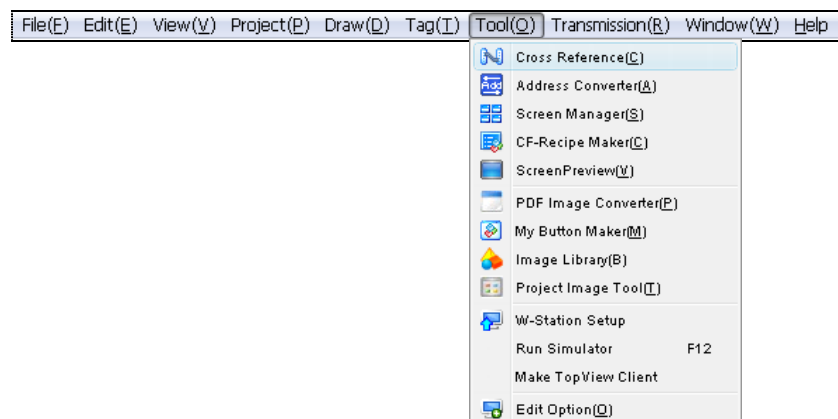
[Figure. Tag menu]

Menu	Explanation	Detailed kinds
Lamp&Touch	Register the touch button. Performs the designated operation and displays the change of data.	Bit Lamp, word Lamp, N-State Lamp, Touch, Touch+Bit Lamp, Touch+Word Lamp, Touch+N Lamp
Numeric&String	Displays data with numbers or characters or input the numbers or character values.	Number, character, number key display, character key display
Message	Displays the registered message along conditions after call.	Bit message, word message
Window	Imports the window screen along conditions.	Bit message, word message
Parts	Imports the images or subscreens along conditions.	Bit message, word message
Alarm	Displays the occurred alarm. Log table is displayed with the logging data.	Alarm, extended alarm, log table
Graph	Displays data with graph.	Bar/linear graph, extended graph, record, X/Y chart A, X/Y chart B
Calculation	Performs the designated operation along conditions.	
Comm	Move data between controller and touch screen.	
Clock	Displays the date and time.	
FileList	Shows data saved in inside of touch screen, CF memory card and USB memory unit and move it.	
DocViewer	Displays PDF file.	
Slide	Emmain body the animation function using multiple images.	

3.2.7 Tool menu (Alt + O)

Tool menu provides with the convenient functions requires to compose and manage project screens.

(☞ Refer to [chapter 44] regarding tool menu for more details.)



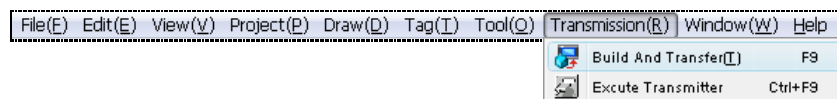
[Figure. Tool menu]

Menu	Explanation
Cross Reference	Inquires the address status used in project.
Address Converter	Converts the address used in project along conditions collectively.
Screen Manager	Watches the screen of the project at a look. Enables the screen to copy, delete and rename.
CF-recipe creator	Creates, saves and manages the recipe data in CF memory card.
Screen Preview	Shows the screen under edit as actual touch screen, save the preview screen as image.
PDF image converter	Converts PDF file to image and enables it to be used in [document viewer] tag.
My button maker	Creates button image.
Image library	Is used as images of lamp or touch screen. Display the images provided from the program. User can add/delete the images.
Project image tool	Shows all images used in the project in the list with the detailed information. Can convert the images, or select and save the images in need.
W-Station setup	Sets W-Station which connects with HTOP.
Run Simulation (F12)	It is the function which operates the designs under edit in PC virtually without touch screen and controller.
Make TopView Client	It is the function which enables touch screen under operation to be monitored in PC when PC and touch screen connected with Ethernet.
Edit option	Sets XDesignerPlus program option to the user.

3.2.8 Transmission menu (Alt + R)

Transmission menu is used to transmit the files such as project/OS/Font files to touch equipment or upload touch screen data to PC.

(☞ Refer to [chapter 45] regarding transmission menu for more details.)



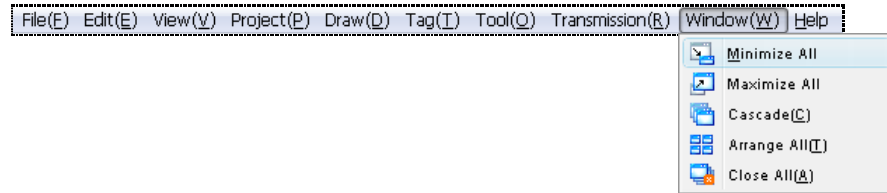
[Figure. Transmission menu]

Menu	Explanation
Build and transmission (F9)	Transmit the designs after build (compile) by executing transmitter. Is used in case of transmitting the designs.
Execute transmitter (Ctrl + F9)	Execute transmitter immediately. Is used in case of no need of the design build (compile), that is, in case of transmitting OS and uploading works.

3.2.9 Window menu

Window menu provides with the function which sorts the open files.

(☞ Refer to [chapter 46] regarding window menu for more details.)



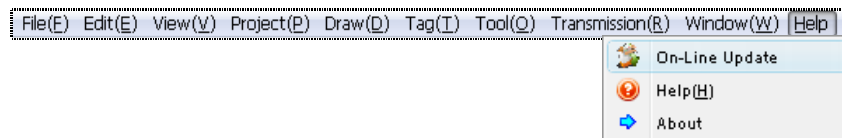
[Figure. Window menu]

Menu	Explanation
Minimize all	Minimizes all open screens.
Maximize all	Maximize all open screens.
Sort in tier	Sorts the open screen in tier.
Sort in tile	Sorts the open screen in tile.
Close all	Close all open screens.

3.2.10 Help menu

Provides with information and online help about XDesignerPlus program.

(☞ Refer to [chapter 47] regarding help menu for more details.)

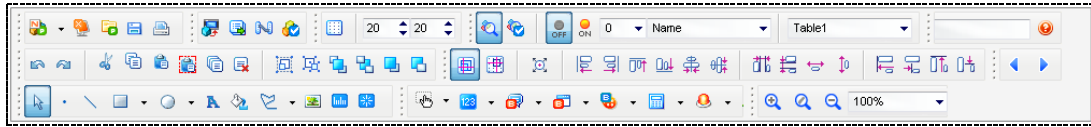


[Figure. Help menu]

Menu	Explanation
On-Line Update	Immediately update the program upon the release of new version of XDesignerPlus program. Operated in internet enabled environment only.
Help	Displays the user manual in PDF file as help of XDesignerPlus program.
Product information	Displays the information such as the version of XDesignerPlus program.

3.3 Toolbar composition

Toolbar is the composition of the picture buttons of frequently-used functions out of menu. If click the icon, it executes the operation immediately and can use it shortly and conveniently.

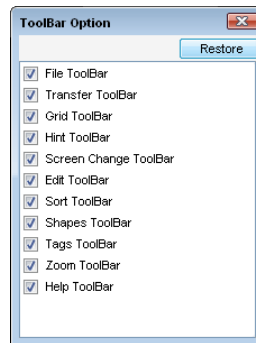


[Figure. Toolbar]

If press shortcut key (Ctrl + W), can hide or display all toolbar.

Also, if wants to edit toolbar partially, executes [Toolbar option] of [View] menu.

In [Toolbar option], can display or hide parts of toolbar in group.








[Figure. Toolbar option]

3.3.1 File toolbar

It is the frequently-used function in file menu which composed of toolbar.



[Figure. File toolbar]

Picture of toolbar	Function
	[File]–[New Project]
	[File]–[Close screen]
	[File]–[Open project]
	[File]–[Save project]
	[File]–[Print]

3.3.2 Trasmission toolbar

It is toolbar which has the functions of transmission and frequently-use.



[Figure. Transfer toolbar]

Picture of toolbar	Function
	[Transmission]–[Build and transfer]
	[Tool]–[Cross Reference]
	[Project]–[Project property]
	[Project]–[Symbol manager]

3.3.3 Grid toolbar

It is called [Grid] which is graduated dots in screen. It decides if displays the grid and sets its gap.



[Figure. Grid toolbar]

Picture of toolbar	Function
	[Tool]–[Edit option], Decides if displays the grid. If pressed, it shows the grid.
	[Tool]–[Edit option], It sets the gap of grid by pixel unit.

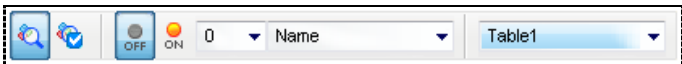
3.3.4 Hint toolbar

It sets up pop-up help and status display.






Popup help is the explanation which attaches the above of tag. Popup help is called hint.

It sets up if popup help displays or select the kinds of popup help.

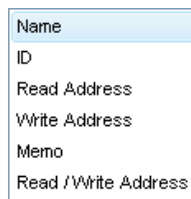
Status display can recognize the shape of tag along ON/OFF status, and the set language along the table in case of using multiple languages.



[Figure. Hint toolbar]

Picture of toolbar	Function
	Sets up if displays pop-up help. If pressed, it displays popup help.
	[Tool]–[Edit option]–[Hint option], Sets up the color and size of Hint option characters.
	[View]–[Status number], Can recognize the shape of tag along ON/OFF status of tag registered in screen and status of 0~15 bit.
	Sets the display type of Hint option.
	Can recognize the language set along the table in screen in case of using multiple language table.

(1) Display type of Hint option



[Figure. Type of Hint option]

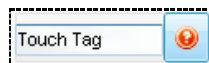
Display type	Explanation
Name	Displays the name of tag. Ex) Touch tag = [T]
ID	Marked number along the sequence registered in screen as ID of tag. Ex) 00001
Read Address	Displays the address reading data out of the used address from touch program.
Write Address	Displays the address writing touch program data out of the used address from touch program.
Memo	Displays the contents of [Register information]–[Memo] of property in tag or figure.
Read/Write Address	Displays all used address in touch program.

3.3.5 Help toolbar

It is the toolbar which searches the contents of user's manual. Input the phrase to search and press



button to search.





[Figure. Help toolbar]

3.3.6 Screen toolbar

It is the toolbar which moves screen.



[Figure. Screen toolbar]















toolbar	Function
	Moves the open base screen, subscreen and global screen to the previous screen.
	Moves the open base screen, subscreen and global screen to the next screen.

3.3.7 Edit toolbar

It is the toolbar which consists of frequently-used function from edit menu.



[Figure. Edit toolbar]


















toolbar	Function
	[Edit]-[Undo]
	[Edit]-[Redo]
	[Edit]-[Cut]
	[Edit]-[Copy]
	[Edit]-[Paste]
	[Edit]-[Paste(SamePos)]
	[Edit]-[Multiple copy]
	[Edit]-[Delete]
	[Edit]-[Group]
	[Edit]-[Release group]
	[Edit]-[Sort]-[Send Front End], Send most forward.
	[Edit]-[Sort]-[Send back End], Send most backward.
	Send forward one step
	Send backward one step

3.3.8 Sort toolbar

It is used to sort the figures or tags registered in screen.



[Figure. Sort toolbar]








toolbar	Function
	[Tool]–[Edit option], Draws snap object or tag or snap of horizontal and vertical lines along the already drawn figure or tag in case of move/changing size.
	[Tool]–[Edit option], Draws snap grid, figure or tag along the grid in screen in case of move/changing size. It is useful when draw a regular square or circle.
	Draws the figure or tag from center to outside.
	[Edit]–[Sort]–[AlignLeft]
	[Edit]–[Sort]–[AlignRight]
	[Edit]–[Sort]–[AlignTop]
	[Edit]–[Sort]–[AlignBottom]
	[Edit]–[Sort]–[AlignCenter]
	[Edit]–[Sort]–[AlignMiddle]
	[Edit]–[Sort]–[Horizontal space equally]
	[Edit]–[Sort]–[Vertical space equally]
	[Edit]–[Sort]–[Horizontal center in window]
	[Edit]–[Sort]–[Vertical center in window]
	[Edit]–[Sort]–[Grow to largest width]
	[Edit]–[Sort]–[Shrink to smallest width]
	[Edit]–[Sort]–[Grow to largest height]
	[Edit]–[Sort]–[Shrink to smallest height]





3.3.9 Draw toolbar

Toolbar of Draw menu.



[Figure. Draw toolbar]

toolbar	Function
	[Draw]–[Select]
	[Draw]–[Dot]
	[Draw]–[Line]
	[Draw]–[Rectangle]: Rectangle, RoundRect
	[Draw]–[Circle: Circle, arc, pie, chord]
	[Draw]–[Character line]
	[Draw]–[Paint]








	[Draw]–[Polygon]: PolyLine, Polygon
	[Draw]–[Image]
	[Draw]–[Rect Ruler]
	[Draw]–[Circle Ruler]

3.3.10 Tag toolbar

Toolbar of tag menu.



[Figure. Tag menu toolbar]




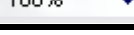
Toolbar	Function
	[Tag]–[Touch]: Bit lamp, word lamp, N lamp, Touch, touch+bit lamp, touch+word lamp, touch+N lamp
	[Tag]–[Number&character line]: Number, character line, number key display, character key display
	[Tag]–[Message]: Bit message, word message
	[Tag]–[Window]: Bit window, word window
	[Tag]–[Calculation]: Operation, statistics, color, file list, document reviewer, slide
	[Tag]–[Alarm]: Alarm, alarm extension, log table, event log viewer
	[Tag]–[Graph]: Bar graph, linear graph, extended graph, record, X/Y chart A, X/Y chart B

3.3.11 Zoom toolbar

It supports 40~400% zooming.

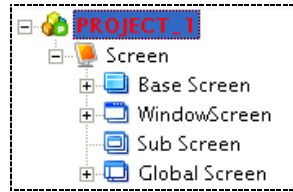


[Figure. Zoom toolbar]

Toolbar	Function
	Starting from 100% and increase by [+20%].
	Starting from 100% and decrease by [–20%].
	Return to 100% as original size.
	Shows by which percent gets increased or decreased, can set % which wants.

3.4 Screen composition

Screen consists of four kinds such as [Base screen], [Window screen], [Subscreen] and [Global screen].

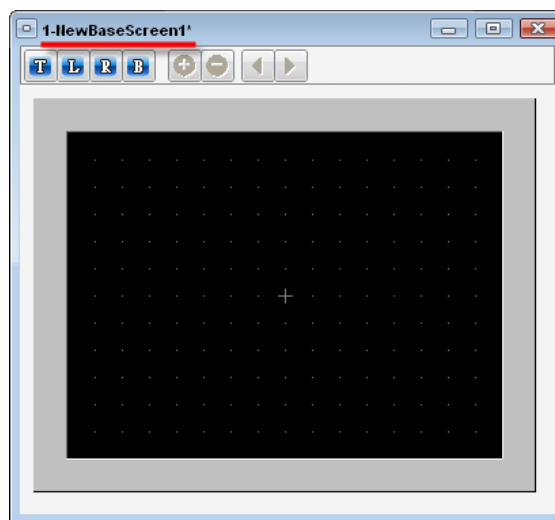


[Figure. Kind of screen]

3.4.1 Base screen

Base screen is the wallpaper which is designs.

Available screen number is [1~65535] and draw up 65535 screens.



[Figure. Base screen]

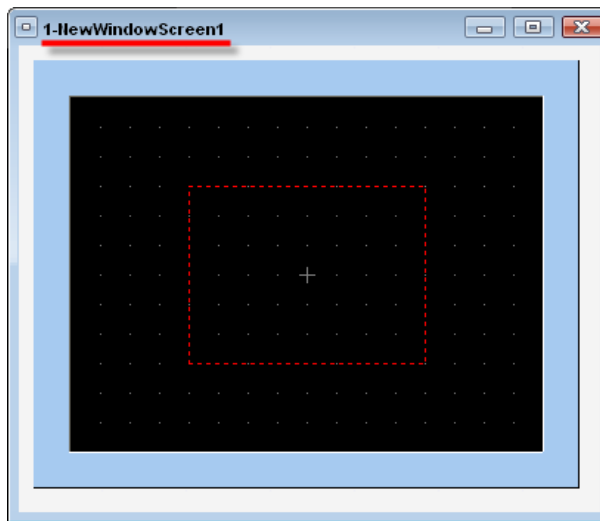
3.4.2 Window screen

Window screen is the screen which is called and used in base screen from base screen.

In order to import window screen, register [Window tag] or [Touch tag] to base screen and use it.

Available screen number is [1~65535] and draw up 65535 screens, [65400~65499] are used as popup screen for ten keys (keypad) and [65530~65535] are used the screen which has the function of [File manager window/password window/auto ten keys window] after internal fixing.

So, should be careful so that screen [65400~65535] cannot be used for separate function.



[Figure. Window screen]

Window screen displays popup area as picture above. The contents in popup area in red dotted line are imported in window screen.

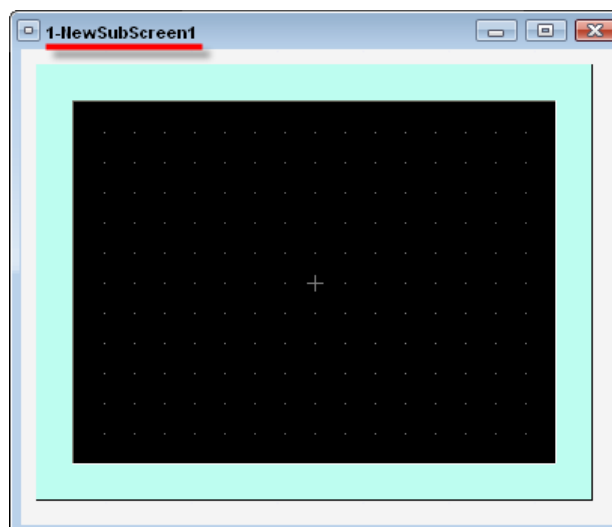
(Refer to [chapter 23~24] regarding window screen popup embodiment for more details.)

3.4.3 Subscreen

Subscreen roles assisting for picture to draw in base screen.

Subscreen has no function but registers the pictures, and can register the figures not tags. It imports the wallpaper to base screen by registering it in subscreen, or can provide with animation effect by using part tags.

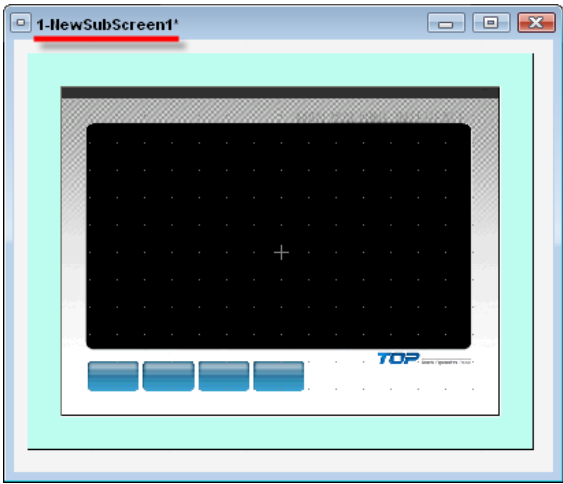
Available screen number is [1~65535], can draw up 65535 screens.




[Figure. Subscreen]

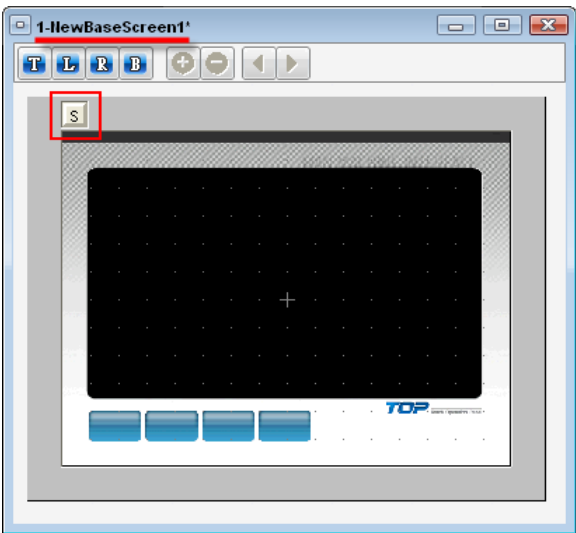
(1) Call subscreen from base screen

If wants to use the background drawn in subscreen1 to base screen as it is(below), select subscreen1 and drag it to base screen in [Project manager].




[Figure. Subscreen 1]

The picture of subscreen is registered in base screen,  button is registered to show the subscreen was registered at upper-left of base screen.



[Figure. Base screen called subscreen 1]

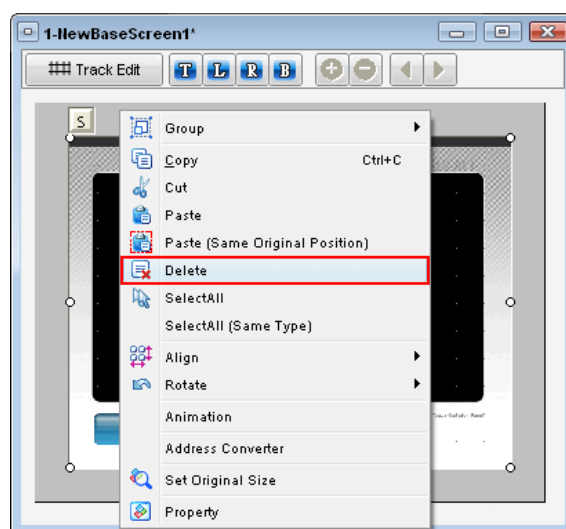
If double-clicks  button, the information about the registered subscreen displays as below figure.

ID	Sub No	<input type="checkbox"/> Hide	<input type="checkbox"/> Absolute POS	<input type="checkbox"/> Lock	
1	1	N	Y	N	

[Figure. Information about the registered subscreen]

Information	Explanation
ID	ID is marked for the subscreen registered in base screen. ID is the number which is marked along registering sequence in screen.
Sub No	Number of the registered subscreen
Hide	If check it, subscreen gets hidden. It is seen in the actual touch screen.
Absolute POS	In case of [Y], absolute coordinates, can change the position of the figures registered in subscreen, cannot change the position of the figures registered in subscreen in case of [N].
Lock	In case of [Y], locking function, cannot edit subscreen, can edit subscreen in case of [N].

In order to delete the registered subscreen, select and delete the picture of subscreen from base screen.



[Figure. Delete the registered subscreen]

(2) Use of subscreen using part tag

(Refer to [chapter 25~26] regarding part tag for more details.)

3.4.4 Global screen

Global screen is the screen which can be applied to all base screens.

Register, import and use the pictures or functions which are used in each base screen.

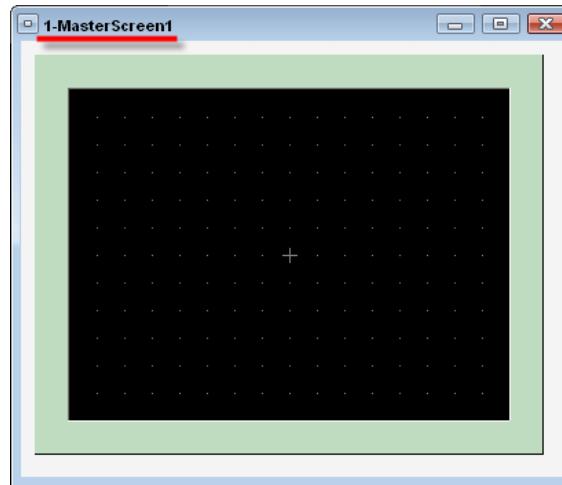
Global screen has two kinds which are master screen and frame screen.

(1) Mater screen

It can be applied to each base screen after emmain bodying the figures or tags which are used commonly in base screen.

Each base screen can set if use or not master screen.

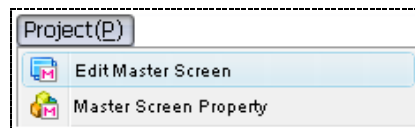
Master screen can draw up one screen in the project.



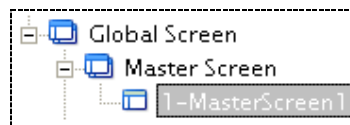
[Figure. Master screen]

- Draw up master screen

If select [Project]–[Master screen edit] of menu, or double-click master screen in project manager, master screen is open.



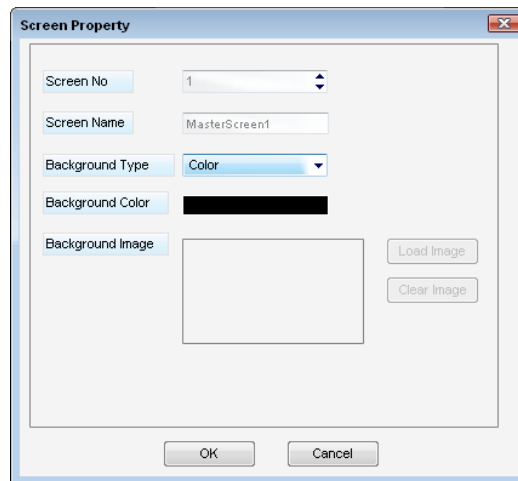
[Figure. Master screen of menu]



[Figure. Master screen of project manager]

Edit of master screen is the same as edit of base screen.

Also, screen property is the same as base screen.

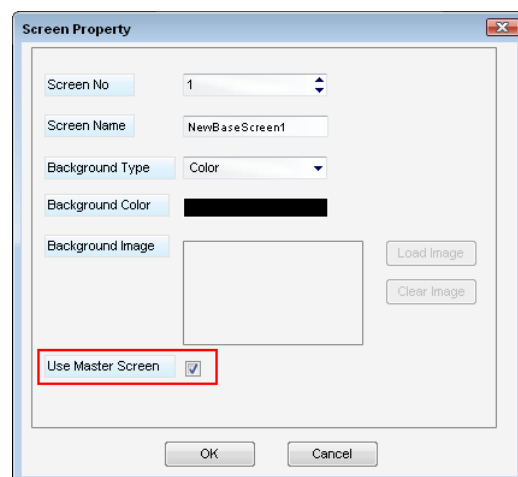


[Figure. Master screen property]

- Use of master screen

Master screen is not used independently, but used after registering in base screen.

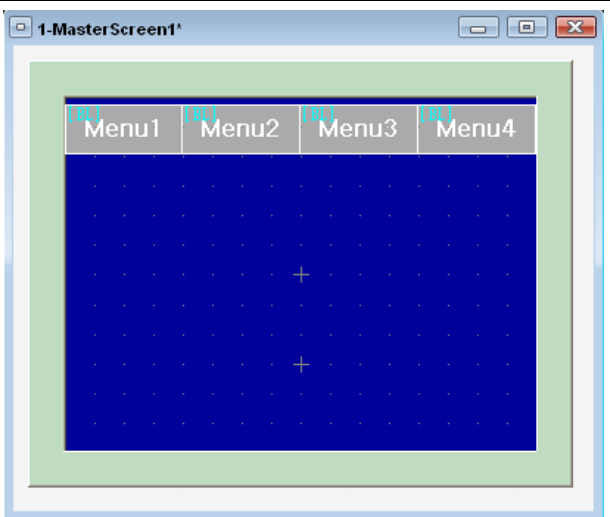
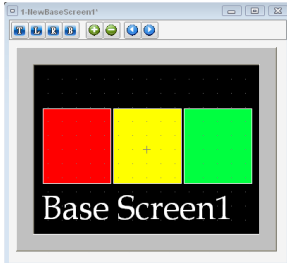
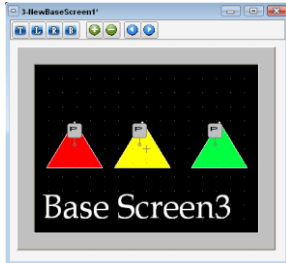
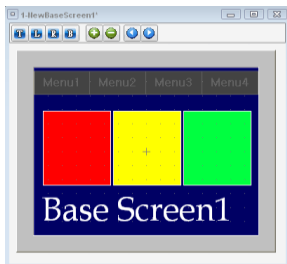
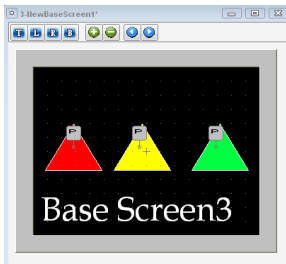
How to register in base screen is to check [Use master screen] of [Screen property] as below figure.



[Figure. Base screen property]

The contents of master screen is not edited in base screen, the contents of master screen can be edited in the edit screen of master screen.

- Example of applying master screen

Master screen		
Base screen		
Use master screen or not	Yes	No
Applying results of master screen		

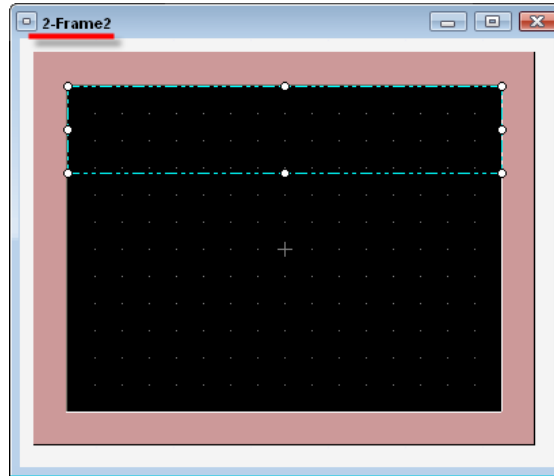
[Figure. Applying example of master screen]

(2) Frame screen

It is the function which composes of common designs as the frame and uses them commonly in multiple base screens.

Frame screen has four kinds such as upper frame, lower frame, left frame and right frame.

Frame screen can create total 65535 screens.



[Figure. Upper frame screen]

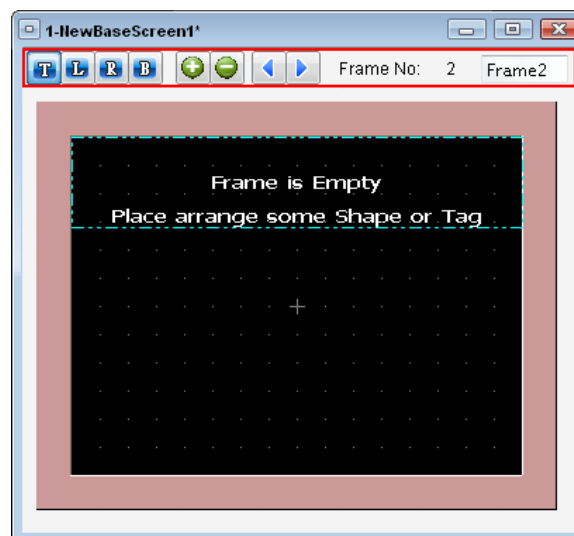
- Creation and drawing up of frame screen

Edit of frame screen is the same as edit of base screen.




But it has to be drawn up in the area because it has the area like window screen.

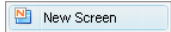
The size of the area is adjustable freely.

Frame screen is created by using the upper button in base screen, or by creating frame screen in [Project manager].

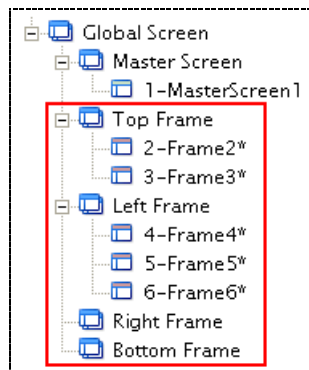


[Figure. Drawing up frame screen]

Frame button	Function
	<p>[Frame screen edit/register button]</p> <p>Buttons of frame screen, Top, Left, Right, Bottom</p> <p>If press this button, can edit each frame screen.</p> <p>Can create new frame screen, or delete existing frame screen using [Frame create/delete button] with this button pressed.</p> <p>Also, if the button gets pressed one more time, currently-open frame screen gets registered in base screen. So, if the button is pressed one more time, it gets registered in base screen after selecting the frame to register using [Frame screen move bottom].</p>
	<p>[Frame screen create/delete button]</p> <p>Registers frame screen newly, or delete the selected frame screen.</p>
	<p>[Frame screen move button]</p> <p>Moves to previous frame screen or next frame screen.</p>
<p>Frame No: 2</p>	<p>Displays screen number of frame screen.</p>
<p>Frame2</p>	<p>Displays name of frame screen.</p>

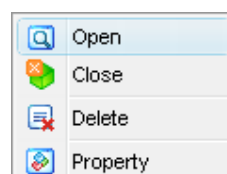
In [Project manager], creates each frame using right button of mouse or  button of popup menu in [Upper frame, left frame, right frame and bottom frame] same as how to create base screen.

If double-clicks the created frame screen, can edit it because it opens.



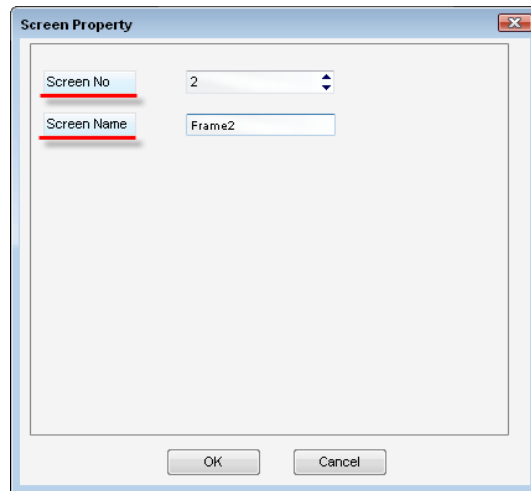
[Figure. Draw up frame screen]

If press right button of mouse in the created frame screen number, popup menu appears. Can [Open/Close/Delete] frame screen in this menu.




[Figure. Popup menu of frame screen]


If enters into [Property] of popup menu in frame screen, can change the screen number and screen name of frame screen as below figure.



[Figure. Property of frame screen]

- **Register frame screen**

Register or release the frame screen using  [frame screen edit/register button] of base screen.

If select the screen to register with  [frame screen move button] with [Frame screen edit/register button] pressed, then press [Frame screen edit/register button] one more time, the selected frame screen gets registered.

3.5 Docking window composition

Docking window is the functional window which can be shown or hidden according to user's need.

Docking window which XDesignerPlus provides has 5 kinds such as project manager, list window, memory manager, and my clipboard and property window.

If press [X] button at upper-right of docking window, it disappears and select docking window at [View] menu, it appears again. Docking means attaching like the magnet. So, position of docking window can be fixed by docking, or released from main window.

3.5.1 Left docking window

Left docking window has project manager, list window and memory manager.

(☞ Refer to [chapter 6] regarding each docking window for more details.)

Type	Explanation
Project manager	It is the window which grasps and manages the design project screen and the status of entire setting at a look.
List window	It shows the lists of figures, tags and groups registered in the currently-open screen as type of list.
Memory manager	It shows the memory use status of the address used in the currently-open screen as type of lamp.

3.5.2 Right docking window

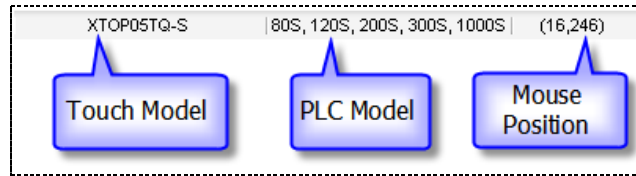
There is my clipboard and property window in the right docking window.

(☞ Refer to [chapter 6] regarding each docking window for more details.)

Type	Explanation
My clipboard	It is the convenient function repeatedly by registering the bundle of frequently-used figures/tags/groups.
Property window	It shows the property of selected figures and tags registered in screen. It shows the property of screen when nothing is selected. Can change the property without entering into property window when editing figures and tags.

3.6 Status bar

It is displayed at right-bottom of XDesignerPlus program and shows set model name of touch screen, set model name of PLC and (X,Y) coordinates of current mouse.



[Figure. Status bar]

CHAPTER 4 File menu

CHAPTER 4 – File menu

Explains [File] menu.

File menu performs the function of creating and saving new project.

Also, can open or close the saved project files, and open the multiple projects additionally.

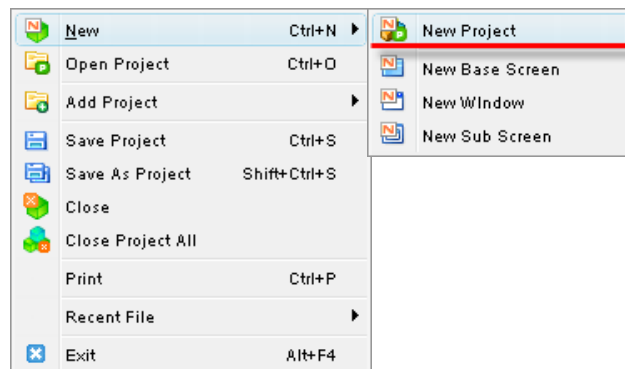
4.1 New(Ctrl + N)

Creates the project and screen newly.

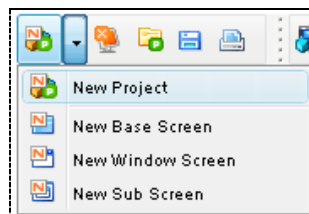
4.1.1 New project

Creates the project newly.

If selects [File]–[Create]–[New project] in menu, or [Create]–[New project] in toolbar, shows the window which sets new project.

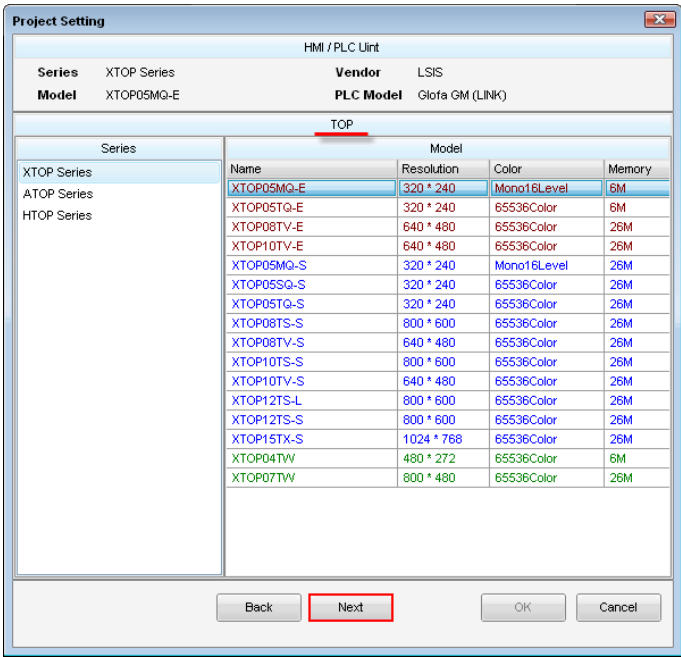


[Figure. Select new project in menu]



[Figure. Select new project in toolbar]

It is the screen which sets [New project].



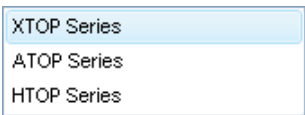
[Figure. Project Setting]

Select the model name of touch screen in use and equipment type of PLC.

(1) Set model name of touch screen

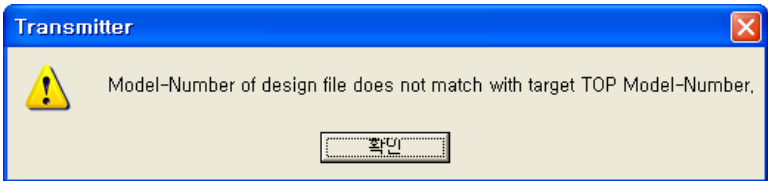
Select [Model name of touch] first and [Series].

Series has three kinds such as new XTOP, old ATOP and handheld type HTOP.



[Figure. Touch screen series]

Next, select [Model name] of touch screen in use out of displayed touch screen along series. If selects wrong model name of touch screen, the following error message is displayed and cannot transmit the data when transmits the project to touch screen.




[Figure. Error message]

(2) Set equipment type of PLC

Select [Type of PLC] first, [Manufacturer] and [Type of PLC] correctly along the selected manufacturer. If selects wrong equipment type of PLC, cannot input the address of PLC in project and cannot communicate with PLC either.

It is explained in [PLC communications manual] regarding selection of PLC equipment type from the manufacturers.

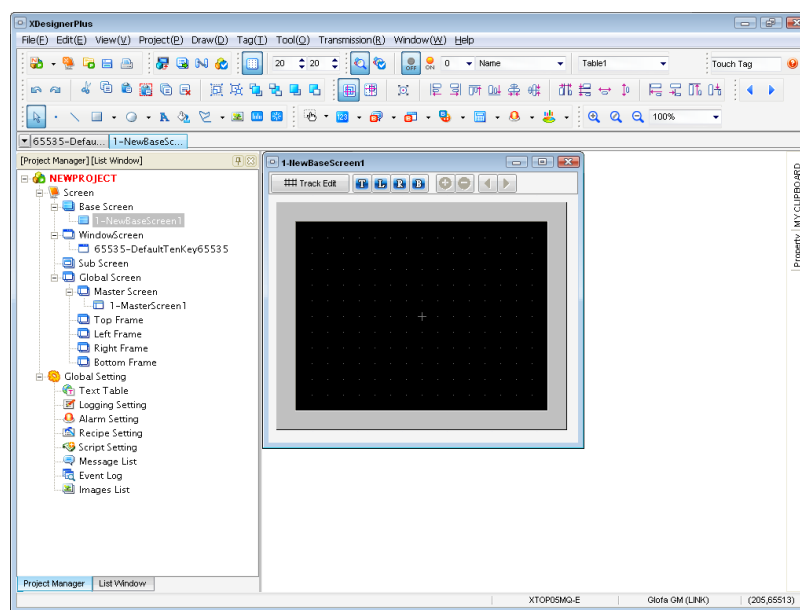
( Communications manuals can be downloaded from the homepages.)

(3) Created project

Press [Confirm] button after selecting model name of touch screen and equipment type of PLC.

Newly created project is as below figure.

Project has the temporary name called [NEW PROJECT]. This name can be changed saving the project. Creates [Base screen] No. 1 and [Window screen] No. 65535 automatically, opens and shows base screen No. 1.



[Figure. Create new project]

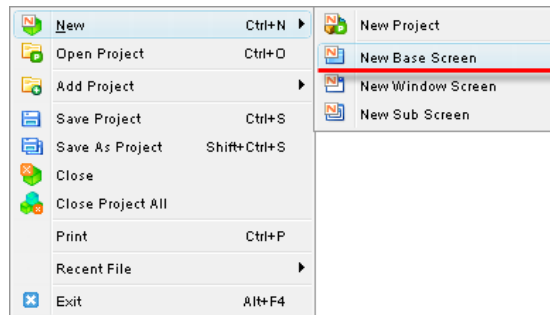
Model name of touch screen or equipment type of PLC can be changed in [Project information] in [Project] menu.

4.1.2 New base screen

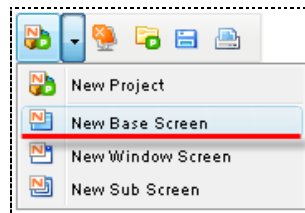
Add new base screen to the project. Base screen is the wallpaper which paints pictures.

How to create has 3 kinds.

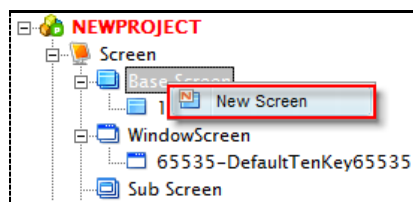
- ① Select [File]–[New]–[New base screen] in menu.
- ② Select [New]–[New base screen] in toolbar.
- ③ Click [Base screen] list in project manager, click [New screen] in popup menu which appears if press right button of mouse.



[Figure. Select new base screen in menu]

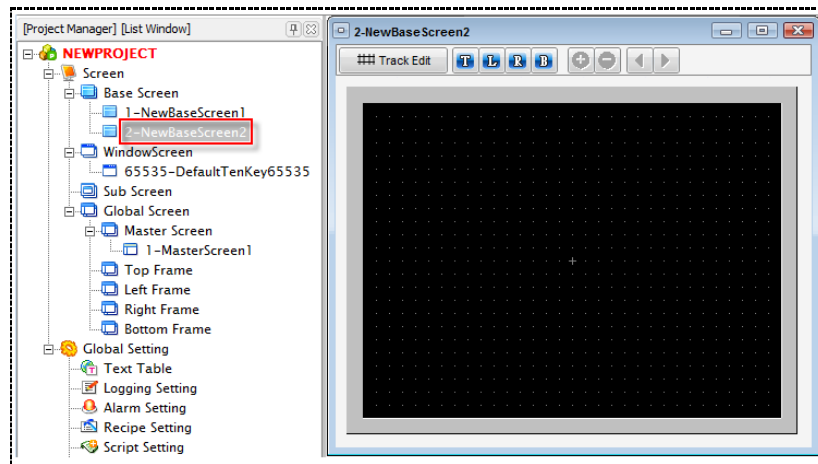


[Figure. Select new base screen in toolbar]



[Figure. Select new screen in project manager]

If executes [New base screen], [Base screen] is added as the second largest number out of the currently registered [Base screen].



[Figure. Create new base screen]

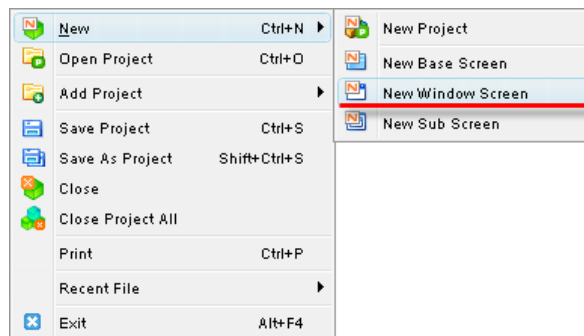
4.1.3 New window screen

Add new window screen in project.

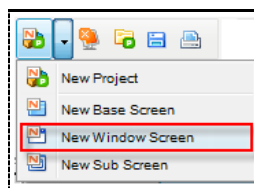
Window screen is the screen which calls in need from base screen.

How to create has 3 kinds.

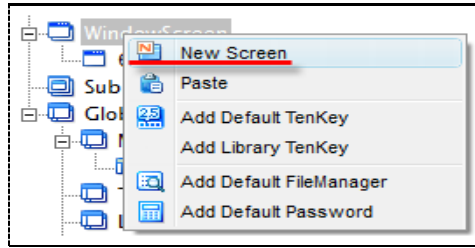
- ① Select [File]–[New]–[New window screen] in menu.
- ② Select [New]–[New window screen] in toolbar.
- ③ Click [Window screen] list in project manager, click [New screen] in popup menu which appears if press right button of mouse.



[Figure. Select new window screen in menu]



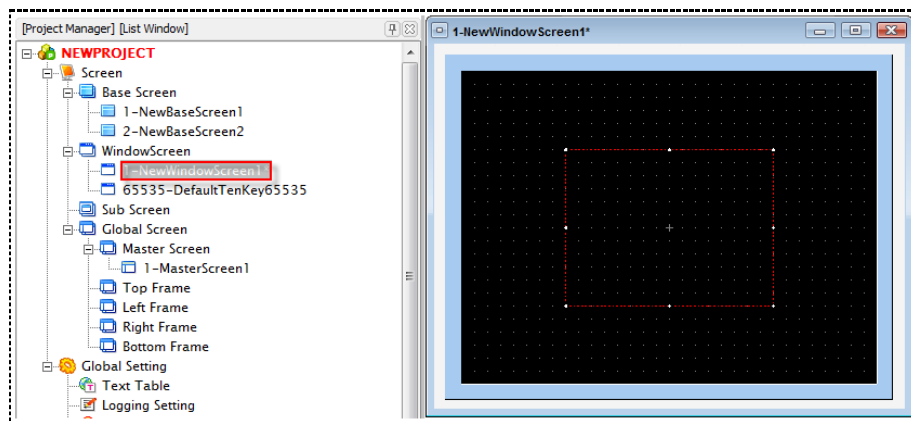
[Figure. Select new window screen in toolbar]



[Figure. Select new screen in project manager]

If executes [New window screen], current [Window screen] is added as the second largest number out of the currently registered [Base screen]. But, the biggest screen number is excluded from the numbers after window screen No. [65400].

If there is no window screen the user creates, No. 1 screen is created as below figure.



[Figure. Create new window screen]

4.1.4 New subscreen

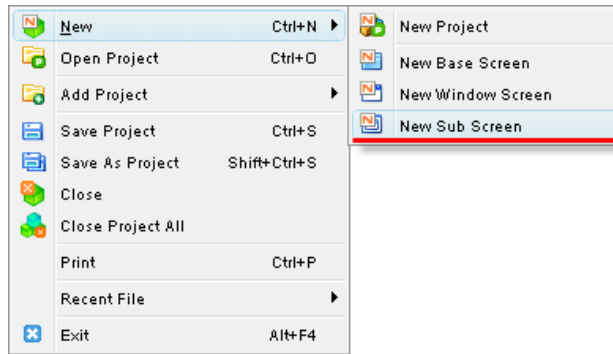
Add new subscreen to project.

It performs the role of support for the picture to be drawn in Base screen. Given that subscreen does not have the function, but registers the pictures only, it cannot register the tags, but the figures.

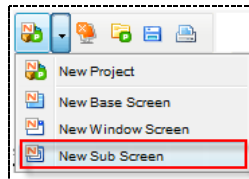
Can import the wallpaper from base screen by registering it in subscreen, or give the effect of animation using part tags.

How to create has 3 kinds.

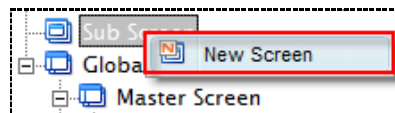
- ① Select [File]–[New]–[New subscreen] in menu.
- ② Select [Create]–[New subscreen] in toolbar.
- ③ Click [Subscreen] list in project manager, click [New screen] in popup menu which appears when right button of mouse.



[Figure. Select new subscreen in menu]

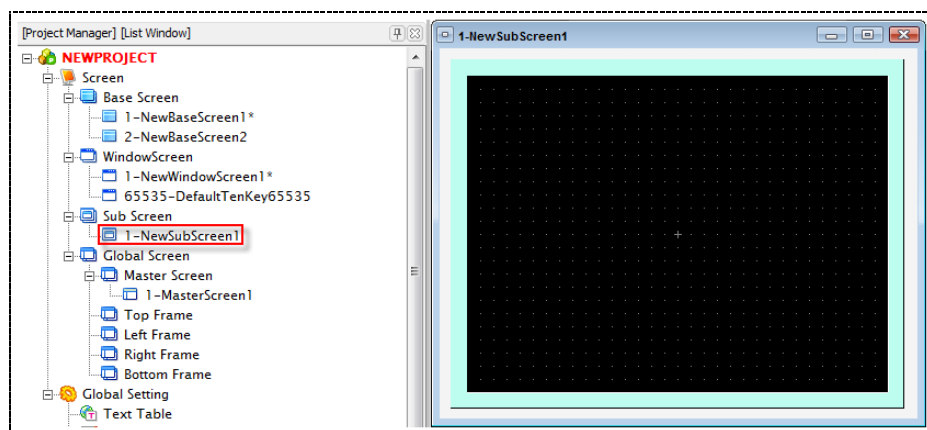


[Figure. Select new subscreen in toolbar]



[Figure. Select new screen in project manager]

If executes [New subscreen], new subscreen is created as the second largest number out of the currently registered [Subscreen]. If there is no registered subscreen, No.1 screen is created as below figure.



[Figure. Create new subscreen]

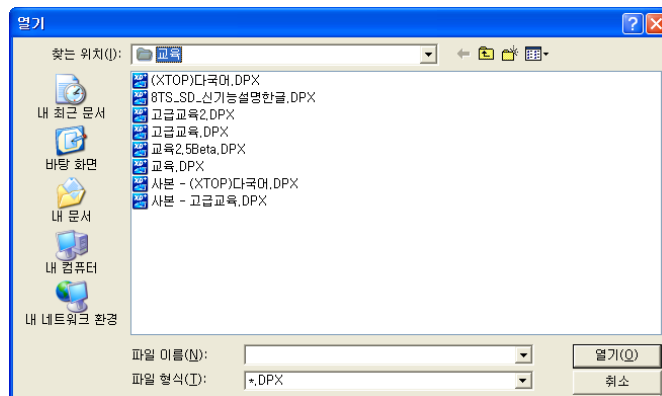
4.2 Open project (Ctrl + O)

'Open project' imports the design project files saved as [*.DPX] files.

If executes [Open project], [Open] screen appears.

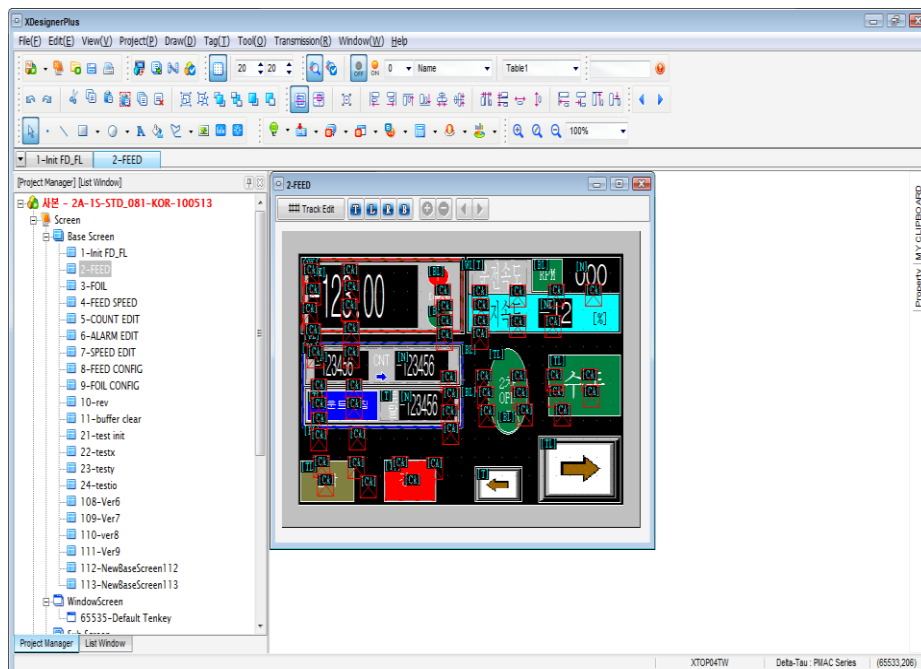
Given that the extension of project file is [*.DPX], [*.DPX] files are displayed only in [Open] screen.

Select the project file to import, press [Open] button.



[Figure. [Open] screen]

Design project is open as below figure.



[Figure. Open project file]

4.3 Add new project

[Add new project] provides with the multiple project functions.

[Multiple project] is the function which can open and edit maximum 4 design projects in one XDesignerPlus program. With this function, can use the function such as mutual screen copy between other projects as well as editing multiple projects simultaneously.

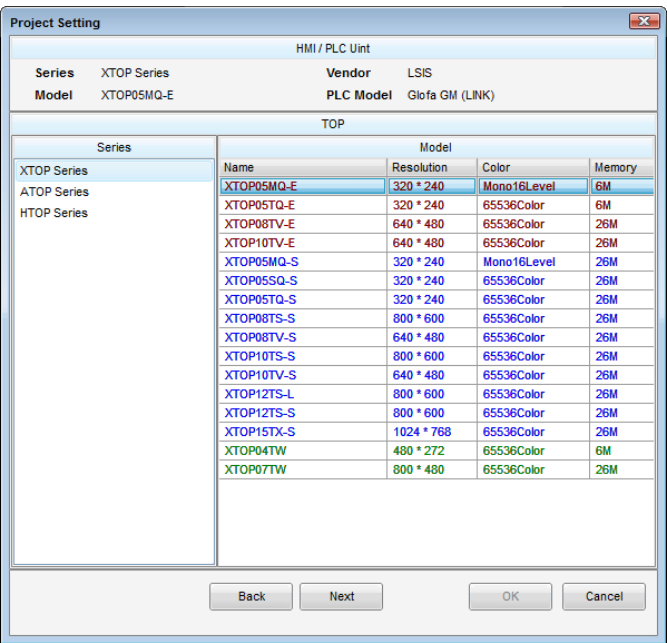
How to add project has two kinds which are to add new project and import existing project.

4.3.1 Add new project

Create and add new project.

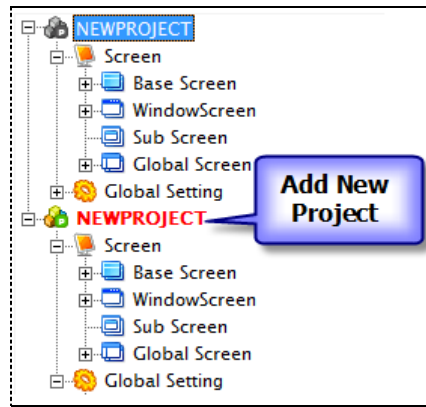
If executes [Add new project], [Project setting] screen is displayed.

Select model name of touch screen and equipment type of PLC, press [Confirm] button.



[Figure. Project setting]

If completes [Add new project], the project named [NEWPROJECT] is activated and created in [Project manager].



[Figure. Add new project]

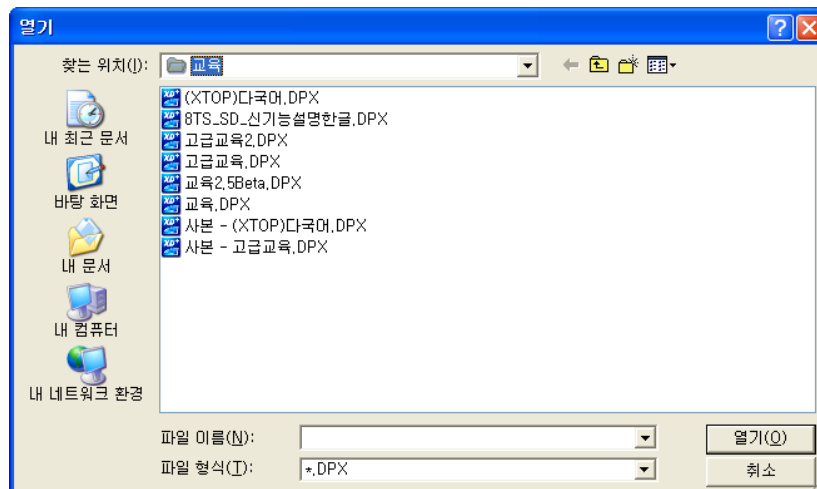
4.3.2 Add existing project

Open and add project files saved as [*.DPX] file.

Given that the extension of project file is [*.DPX], [*.DPX] files are displayed only in [Open] screen.

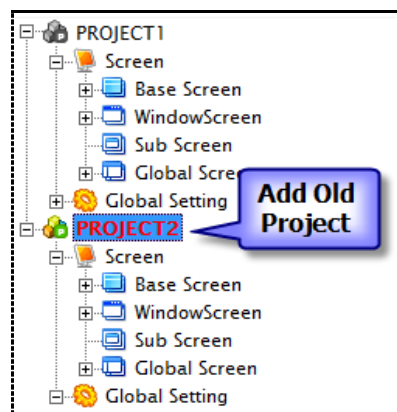
Select the project file to import, press [Open] button.

Select the project file to import, press [Open] button.



[Figure. [Open] screen]

It is the display which adds existing project.



[Figure. Add existing project]

4.3.3 Utilize multiple projects

Let us inquire how to utilize multiple projects.

(1) Project activation

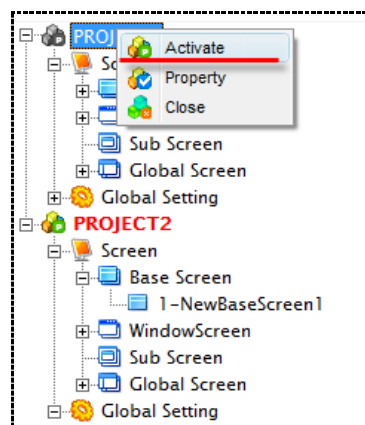
If several projects are open, one project out of them gets activated.

When XDesignerPlus program executes the operation of transmission and save, only activated projects are transmitted and save.

In order to [Activate] the project, click the project name in [Project manager], select [Activate] in popup menu which appears if press right button of mouse.

The activated project name is displayed in red and the inactivated project name is displayed in black.

If activate the inactivated projects, the existing activated project gets inactivated automatically.



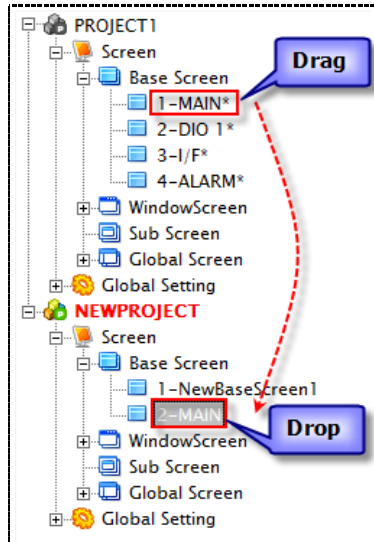
[Figure. Project activation]

(2) Screen copy between other projects

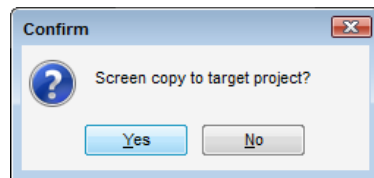
Can easily copy the screen each other in multiple project.

- **Drag and drop method**

Screen is copied if drags the screen to copy to the project screen to paste as below figure.



[Figure. Drag & drop screen copy]



[Figure. Confirm message of screen copy]

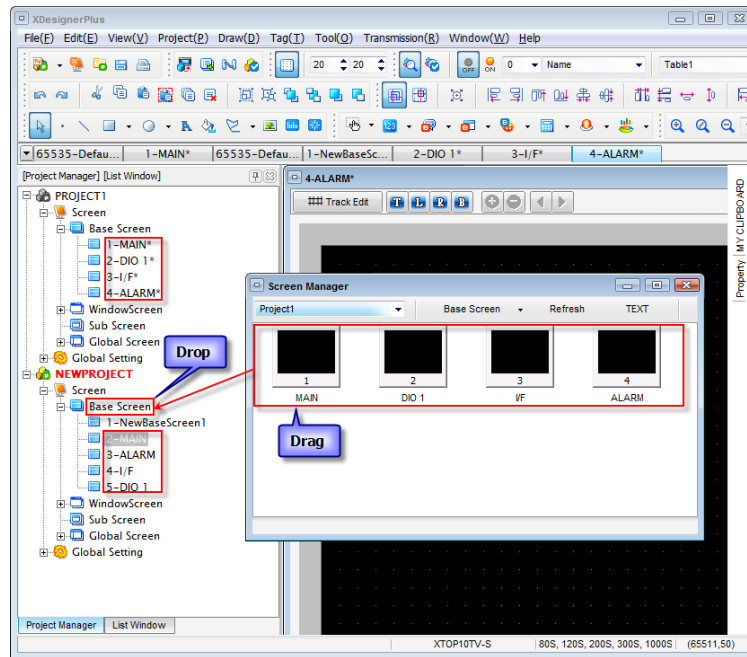
- **Use of screen manage menu**

Can copy the screen more easily if use [Tool]–[Screen manage].

[Screen manager] enables to recognize the registered screen in project at a look.

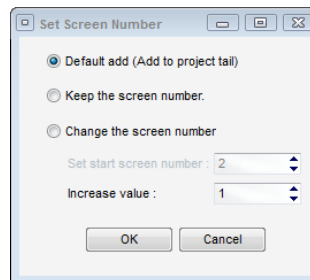
If selects the screen to copy in [Screen manage] and [Drag] and [Drop] it in [Screen name] of the project to paste in [Project manager], the copied screens are pasted to the projects.

Give that there is no limit to number of screen to copy, can [Copy/paste] multiple screens simultaneously.



[Figure. Screencopy using screen manage menu]

If executes [Drag & drop], the window which was implemented by copy/paste is displayed to set number of screen.



[Figure. Set screen number]

Menu	Explanation
Default add	The second largest number out of project screen numbers is added.
Keep the screen number	Keep project screen number as the copied condition was.
Change the screen number	Add it as start screen number by designating start screen number.
Set start screen number	Is used in case of selecting [Screen number change] menu, it is the start screen number to change and apply.
Increase value	It is the increasing gap of copied screens because several screens are copied.

(3) Edit function

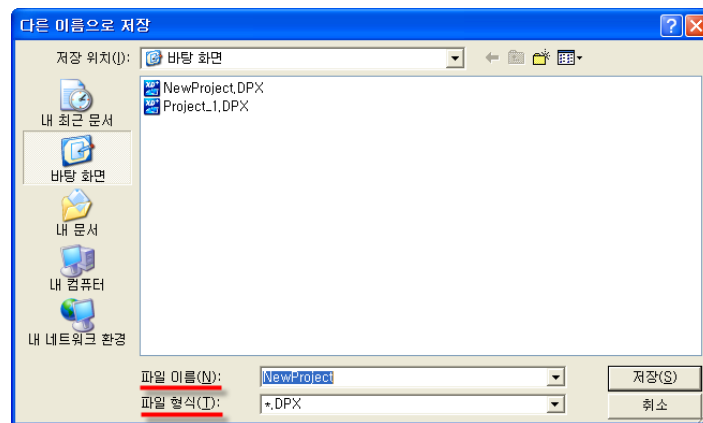
[Tag/figure/group] registered in one project screen is also supported by edit function which does [Copy/cut/paste] it to other project screen.

4.4 Save project (Ctrl + S)

Save the currently-open project.

When the project is already saved as a file, it saves the changed contents of the file.

When the project is not saved as a file, [Saved as other name] appears and saves it by designating saving route and file name.



[Figure. Save project]

Designates file route and input file name.

[File name] is designated as [NewProject] basically, cannot input the name in need.

Given that the extension of design project is [*.DPX], [File type] is designated as [*.DPX].

If press [Save] button, the file is save.

4.5 Save project in other name (Shift + Ctrl + S)

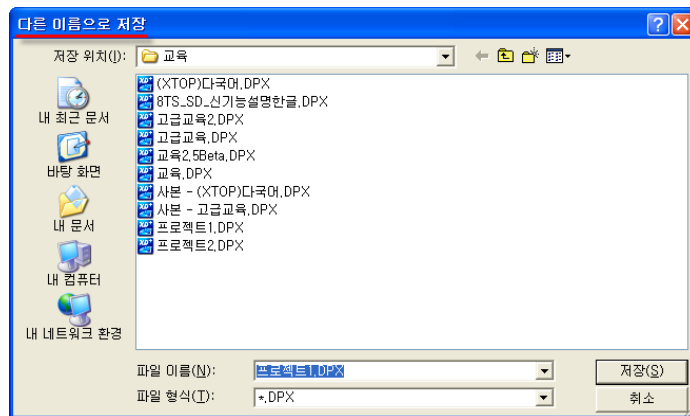
Save the currently-open project as other name.

It is used when needs to create and save new file named other name other than already-saved file.

If executes [Save it as other name], [Save it as other name] screen appears and save it by designating new saving route and file name.

File name of [Save as is other name] screen and file route are designated as existing file information, but designate new file route and file name.

If you press [Save] button, save it as other name.

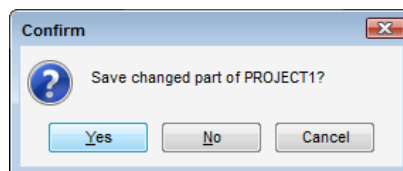


[Figure. Save it as other name]

4.6 Close project

Close the currently-activated project.

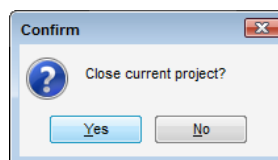
When the currently-activated project is not save, message asking if saving or not appears.



[Figure. Saving confirmation message]

Button	Explanation
Yes	Save the changed contents in the project and close the project.
No	Close the project without saving the changed contents in the project.
Cancel	Cancel closing project.

Closing confirmation message appears when there is not changed part in the project.

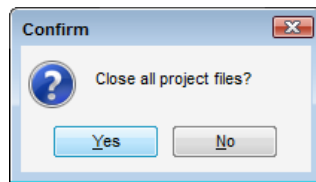


[Figure. Close confirmation message]

Button	Explanation
Yes	Close the project.
No	Cancel closing projects.

4.7 Close all project files

Close all open the project when multiple projects are open.



[Figure. Closing confirmation message]

Button	Explanation
Yes	Close the entire project.
No	Cancel closing the entire project.

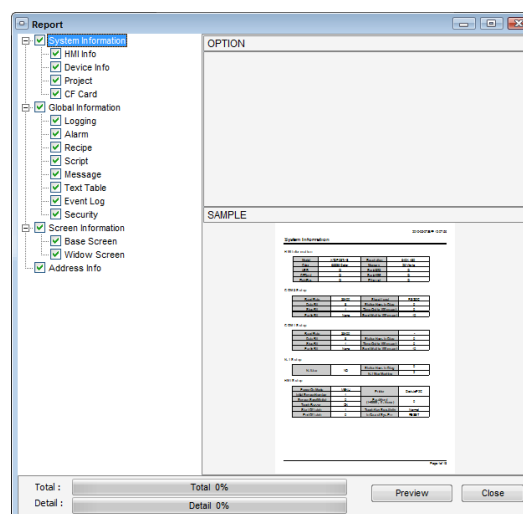
If presses [Yes] button, the projects with changed parts out of open projects is saved along popup message asking if save or not.

4.8 Print (Ctrl + P)

Print the contents of project. If executes [Print], [Report] screen is displayed. Can print or edit the contents with the list in [Report] screen along marked type of [Sample].

4.8.1 Printing items

System information, global information, screen information and address information can be printed largely.



[Figure. Print]

Print	Explanation
System Information	Print the entire system information.
HMI Info	Information on set touch screen.
Device Info	Information on set PLC.
Project	Project information on [Project setting].
CF Card	CF memory card information on [Project setting].
Global Information	Print the entire global information.
Logging	Logging setting content.
Alarm	Alarm setting content.
Recipe	Recipe setting content.
Script	Script setting content.
Message	Message table setting content.
Text Table	Multiple language table setting content.
Event Log	Eventlog setting content.
Security	Password setting content.
Screen Information	Print the entire screen.
Base Screen	Base screen
Window Screen	Window screen
Address Info	Print address list used in the project.

4.8.2 Option

It is the part which sets printing option.

Click [View Sample], check out printing format in [SAMPLE] and select the option.

(1) Printing option of logging

View Sample	<input checked="" type="checkbox"/> Normal Style
View Sample	<input checked="" type="checkbox"/> Detail Style

[Figure. Printing option of logging]

Option	Explanation
Normal Style	Print basic items in logging setting.
Detail Style	Print the content of logging setting in details.

(2) Printing option of screen

[Figure. Printing option of screen]

Option	Explanation
Normal Style	Print one screen per one page.
Detail Style	Can print the tag list registered with screen.
List Style	Print the entire screen into list.

(3) Printing option of address

[Figure. Printing option of address]

Option	Explanation
Normal Style	Print the used address list.
Detail Style	Print the ID and name of tag which use the address when printing the used address list.
Screen	<p>Select screen range of address list to print</p> <p>[ALL] is all the addresses used in project, [ALL SCREEN] is all the addresses used in screen [GLOBAL] means all the addresses used in global setting If wants to print the address list used in one screen, It is OK to select the screen.</p>
Device	<p>Select the type of address to print</p> <p>[ALL] means all addresses, [HMI] means the internal address of touch screen, and [PLC] means address of PLC.</p>

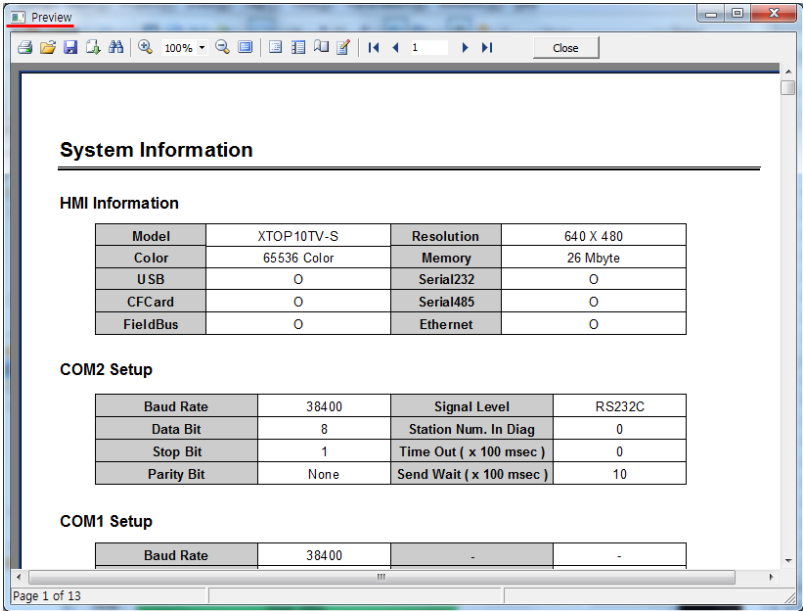
4.8.3 Sample

If selects the list to print, it shows the format in [SAMPLE] along printing items and options.

4.8.4 Preview

Press [Preview] button at lower area after checking the item which wants to print from the left list of [Report] screen. It shows the actually printing file after [Preview] screen which consists of the checked items appears.


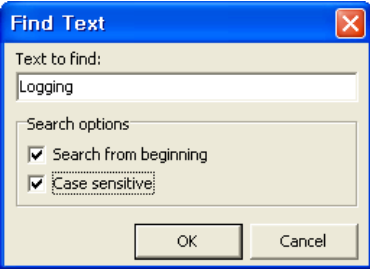


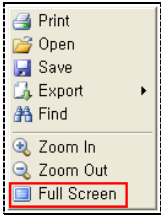


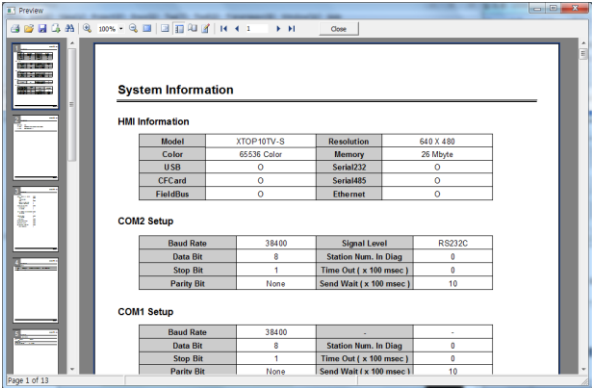

Can set printing format in [Preview] screen and edit the contents of [Preview].
Also, can save current [Preview] screen, or import the saved [Preview] file.



[Figure. Preview]

If press the print button in [Preview] screen, it executes print.

Toolbar	Explanation
	Print current preview file.
	Import the saved preview [*.fp3].
	Save preview file. The extension of file is [*.fp3].
	Export it to other file. Exportable type of files is as followings. <div><div>Excel table (OLE)...</div><div>RTF file...</div><div>BMP image...</div><div>JPEG image...</div></div>

	<p>[Search] function.</p> <p>If input the text (word), press [OK] button, can search.</p> <p>[Search from beginning] in [Search option] is [Search from beginning] option, and [Case sensitive] is [Classify capital/small letters] option.</p> 
	<p>Function of [Enlarge/shrink].</p> <p>Is used when enlarges or shrinks the preview screen</p> <p>(+) button enlarges it by +25% and (-) button shrinks it by -25%.</p> <p>User can input the ratio of enlarge/shrink rates in manual.</p>
	<p>Function of [Full Screen].</p> <p>Is used when views the preview screen in entire screen. If it needs to return to the original preview screen from [Full screen], press right button of mouse so that popup menu shows up.</p>  <p>If press [Full Screen] menu in popup menu, it returns to the preview screen.</p>
	<p>Function of [Report Outline].</p> <p>It shows the outline about the left screen of preview screen.</p>
	<p>[Thumbnails] function.</p> <p>It shows the screen list at preview screen.</p> 
	<p>[Page setup]</p> <p>[Size] sets the printing paper.</p> <p>[Orientation] is the paper direction, select one out of width or length.</p>

	<p>[Margins] sets the margin.</p> <p>[Apply to the current page] in [Other] is to print the current paper, [Apply to all pages] is to print the whole pages.</p> <div><div>Page Settings</div><div><div>Size</div><div>A4</div><div>Width 21 cm</div><div>Height 29.70 cm</div><div>Orientation</div><div><div>Portrait</div><div>Landscape</div></div><div>Margins</div><div><div>Left 1 cm</div><div>Right 1 cm</div><div>Top 1 cm</div><div>Bottom 1 cm</div></div><div>Other</div><div><div>Apply to the current page</div><div>Apply to all pages</div></div><div><div>OK</div><div>Cancel</div></div></div></div>
	<p>[Edit page] function. Can edit preview screen.</p> <p>Can edit each text and add/delete the contents. Property is shown at left and can edit color/position information.</p> <div><div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View Help</div><div>File Edit View 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4.9 How to use printer

4.9.1 Function and specifications

Print enables the screen of touch screen under operation to be printed, or prints logging or alarm data.

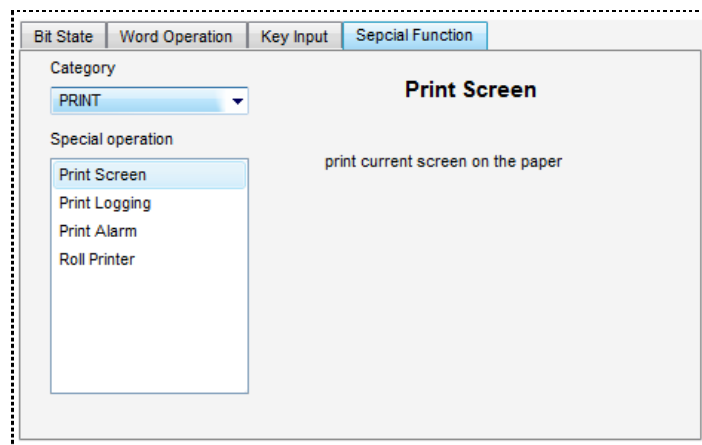
Connect printer with USB Host ports.

Currently available printer is HP's which support PCL Level 3 protocol.

4.9.2 Setting in XDesignerPlus program

Can register and print touch tags or operation tags in the screen.

If sets [Sort] to [PRINT] in special function of touch tag or operation tag, it shows the printable items in [Special operation].



[Figure. Print]

Print	Explanation
Print Screen	Prints the current screen under operation with the connected printer.
Print Logging	Prints the current logging data under operation with the connected printer.
Print Alarm	Prints the current saved alarm data with the connected printer.

4.10 How to use Roll Printer

4.10.1 Functions

Can print the internal address data of touch screen using roll printer.

Roll printer is the mini printer which prints the receipts.

Use it with COM1 port(232C exclusive) connected with roll printer.

Can print the number tag using internal address and the values of character tag only.

[Epson Protocol] supports Roll printer and has to support RS232C.

4.10.2 Setting in XDesignerPlus program

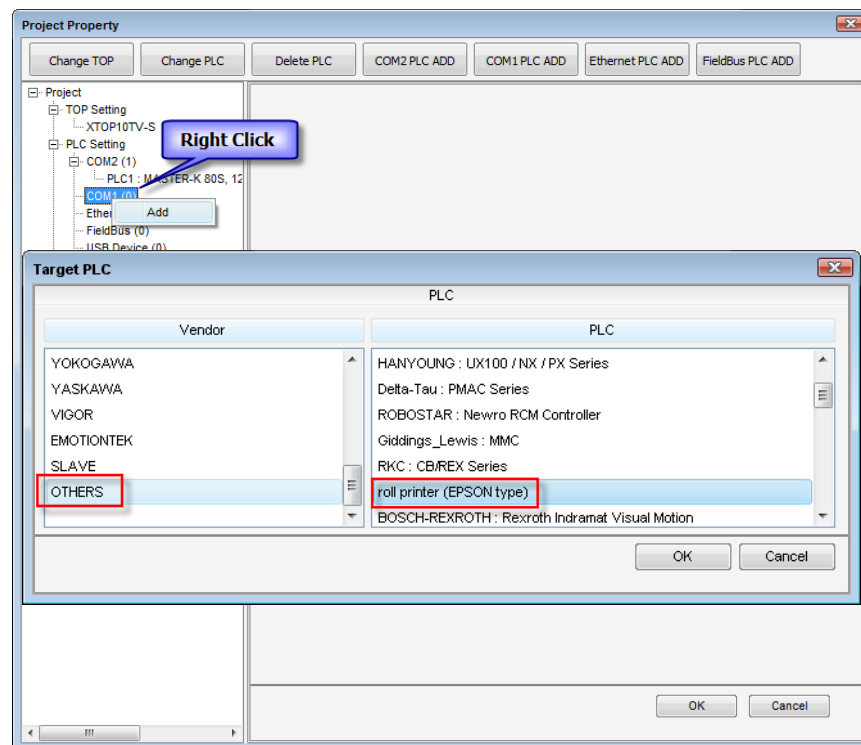
(1) Connect roll printer and add project

Connect roll printer with COM1 port.

COM2 port of touch screen is used for purpose of communications with PLC.

First, transmit the designs to touch screen and connect it to roll printer.

Create new project in XDesignerPlus program, press right button of mouse in [Menu]–[Project]–[Project setting] as below.

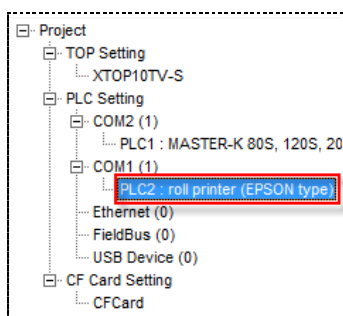


[Figure. Add roll printer]

Execute the popup menu [Add]. It shows [Target PLC] window.

Select [Others] from manufacturer, select [roll printer(EPSON type)] as name of PLC.

Then, roll printer(EPSON) is added to [COM1] port as below.



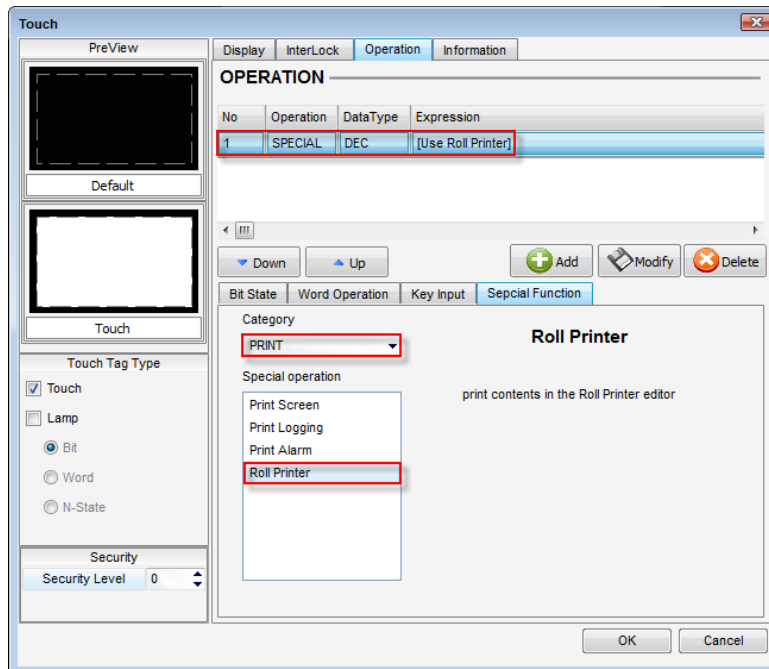
[Figure. Add roll printer]

(2) Designs

Use the operation tag and touch tag to place the printing order to the printer.

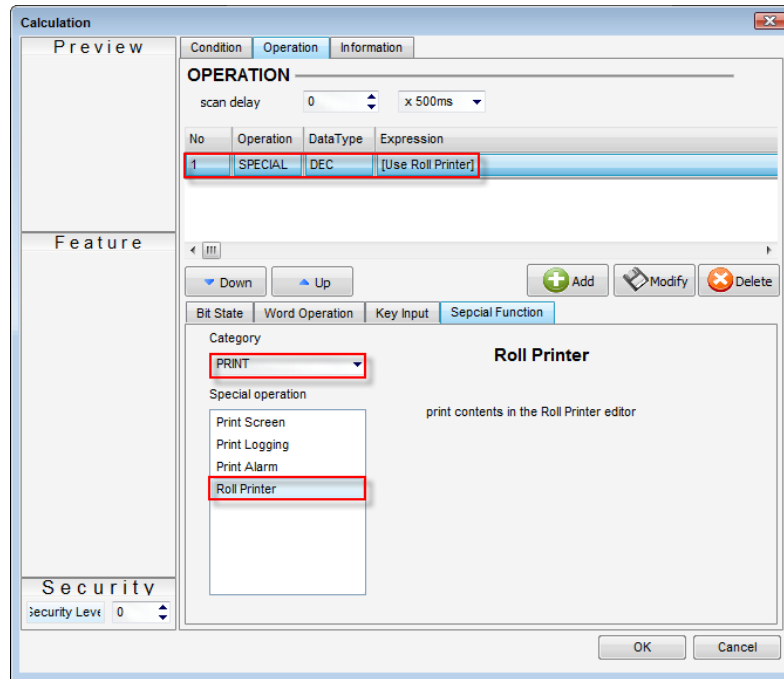
Set "Roll Printer" in [Special function] of [Operation] page of touch tag or operation tag.

Set "Roll Printer" by selecting [Special function] in [Operation] page of touch tag.



[Figure. Print button of touch tag]

Set the conditions in [Operation condition] page of operation tag, select [Special function] in [Operation] page as below figure.

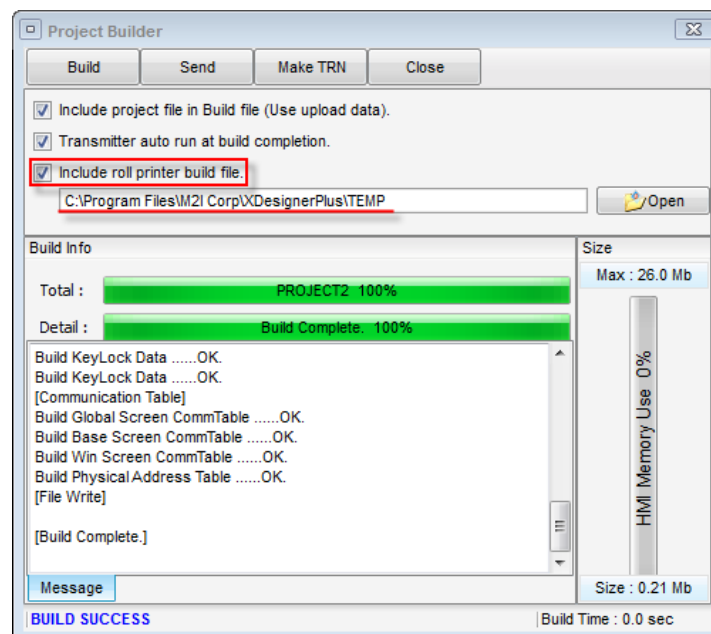


[Figure. Print function of operation tag]

(3) Transmission

Execute [Transmission]–[Build & transmit] menu, check [Include roll printer build file] option in [Project builder] screen and add [* .rbf] files. If save or compile [* .rbf] file in [Rollprinter editor], it is created in [C:\WProgram Files\WM2I Corp\WXDesignerPlus\TEMP].

Compile it after including the files and transmit it.



[Figure. Add rollprinter edit file]

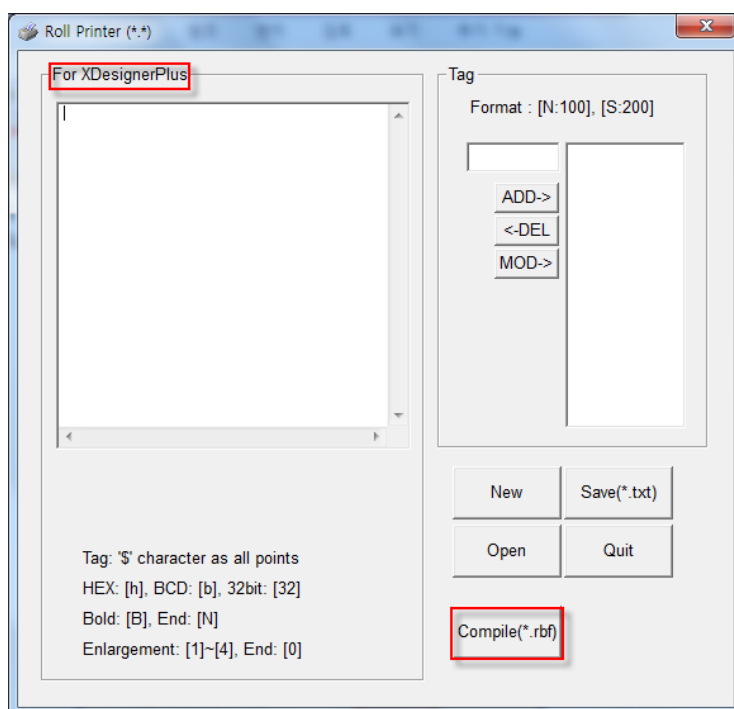
4.10.3 Roll Printer editor

Draw up the format and contents to print using roll printer.

Execute [All program]–[M2I Corp]–[XDesignerPlus]–[RollPrinter] in [Start] program.

It composes of [Edit part] at left and [Tag registering part] at right.

Left editing parts are the parts to be drawn up as the text to be printed, tag registering parts are the setting parts for types and address of each tag.



[Figure. Roll printer editor]

(1) Drawing up of the text

First, draw up the text. The text is drawn up as the user wants to print. Can print it as the text is.

How to use and edit tags in the text is as the followings.

① Shows tag

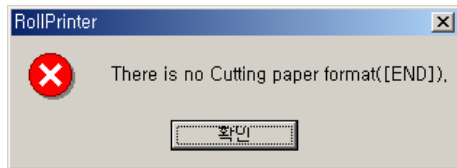
Can use the number tag and character tag.

In case of number tag, shows '\$' symbol as many digits as total digits, in case of character line, as many as character line.

Can use the command before '\$' of tag.

No.	Command	Explanation
1	[32]	Use it when data size is 32 bit in number tag. Then, values of 32 bit can be printed.
2	[h]	Use it when data type is HEX data in number tag. Then, hexadecimal is printed.
3	[b]	Used it when data type is BCD data in number tag. If so, values of BCD are printed.

Following commands can be used in the text.

No.	Command	Explanation
1	[B]	When needs to mark the words of the text in bold, use it before the character line. Add the command [B] before the character line to mark in bold, add the command [N] after the character line in bold. [B] means 'Bold', [N] means 'Normal'.
2	[N]	When needs to mark the text in bold, use it at the end of the character line.
3	[0]	The size of basic character. After enlarges the characters and needs to return it back to the basic characters, use [0] at the end.
4	[1]	Enlarge the width and length of basic characters two times.
5	[2]	Enlarge the width and length of basic characters three times.
6	[3]	Enlarge the width and length of basic characters four times.
7	[4]	Enlarge the width and length of basic characters five times.
8	[END]	It is the command to cut the paper of Roll printer. Use it at the end of the text definitely. Following error message gets shown if the command [END] is missed in the text. 



Note

주의

- * The command [B], [N] [0]~[4] and [END] may not be supported by the printer. Check it out with the manufacturer of printer.
- * Because the command is not printed, be careful when writing the text. That is, when the command is used, the characters are printed ahead of their original position as many digits of command.
- * Given that maximum numbers of characters which can be input are different along the type of printer, check it out before use.
- * The command can be applied though they are used one after another.

If write "[1][B]AA", it marks as "AA" in two times of size.

If write "[32][h]\$\$\$\$\$\$\$", it means that address data of number tag is [32bit] and hexadecimal.

(2) Input of tag

Input tag address after writing the text. The reason for that is it can be input as many number of tags.

When tag is input before the text, the tag is not input.

The address of tag is to be input in tag address input column by the form of [N:100], [S:200].

“N” means Numeric Tag. “S” means String Tag.

Input the internal address after colon(:). Roll printer supports current internal address only.

[N:100] means the value of number tag which uses the internal address 100.

After input, add the input tag address to list box by pressing [ADD] button. There are three buttons under the tag address input column. The operation of three buttons is as followings.

Button	Explanation
ADD	After check if the input tag address in tag input column is correct along the form, add the address to the right of list box. If input form is not correct, display error message and input again. When wants to the tag address in the middle of tag address added to the list, select the center part of the list, press [ADD] button after writing new tag address in tag input window. Then, newly-input tag address is added after the tag address selected from the list.
MOD	Edit the input tag address. After selecting tag address which needs to be corrected in the list, if correct the tag address in [Tag input window] and press [MOD] button, the selected tag address is changed to the corrected tag address.
DEL	Delete the input tag address. After selecting the tag address which needs to be deleted in the list, the tag address gets deleted if press [DEL] button.

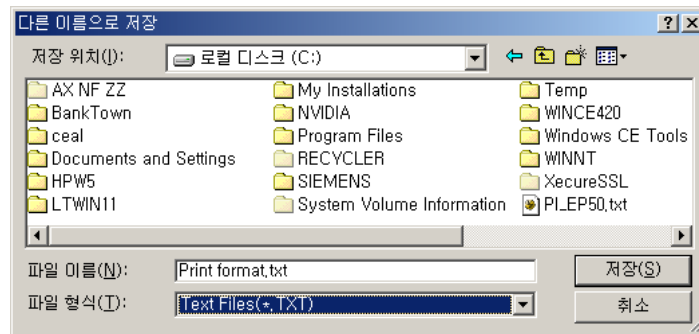
If the input form of tag is incorrect, display the following error and input it again.

NO	error	Content
1	There is no text!	There is no content input into the text, When tag address in input.
2	First brackets '[' is missing!	When there is no first square bracket
3	Indication of Numeric Tag and String Tag is error!	When the character is input other than 'N' meaning number tag and 'S' meaning character tag.
4	Colon(:) is missing!	When colon(:) is not input
5	System buffer address is missing!	When the internal address is missed
6	System buffer address is error!	When the internal address is input incorrectly
7	Last brackets ']' is missing!	When there is no square bracket
8	All tags are already input!	When tag address is input more than the input in the text

(3) Saving

After input the text and tag correctly, press [Save] button at right bottom.

In case of opening the already-saved file, the file name is displayed at the upper of roll printer editor.
When the content is edited by opening the file, the changed contents are overwritten. When it is not saved, it executes the saving routine such as following, and input contents gets saved as [* .TXT] file.



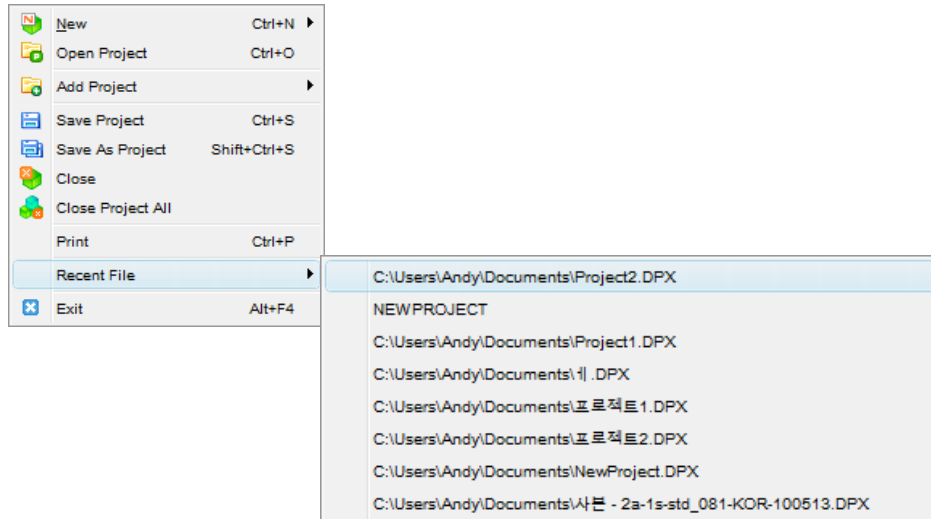
[Figure. Saving]

Button	Explanation
New	Enables to re-input by deleting all items of the editor.
Save	Saves the contents of editor as text file, creates the file to transmit internally at a time.
Open	Reads text file, shows the contents of read file in items of editor.
Quit	Quit the editor of roll printer.
Compile(*.rbf)	<p>When transmitting it from XDesignerPlus, creates [* .rbf] to include.</p> <p>[* .rbf] file is created at [C:\WProgram Files\WM2I Corp\WXDesignerPlus\WTEMP].</p> <p>Definitely Compile has to be implemented to use print function.</p>

4.11 Recent file

It shows the list of recently-open project file. List can be saved up to maximum ten lists.

If select the project to open in the list, the list is open immediately.



[Figure. Select recent file in menu]

4.12 Exit (Alt + F4)

Exit XDesignerPlus program

Select [File]–[Exit] in menu, or press [X] button at right upper of XDesignerPlus screen.



[Figure. Exit by pressing [X] button]

If the project contains the changed parts out of open projects, the message asking if save or not one by one. Save it and exit the program.

CHAPTER 5 Edit menu

CHAPTER 5 – Edit menu

Explain [Edit] menu.

Edit menu provides with the functions of copying and pasting Draw/Tag, rotation, sorting, group/release during editing project screen so that more convenient and correct edit can be done.

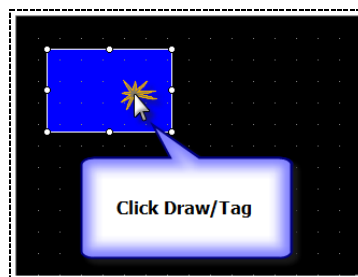
5.1 Select

5.1.1 General selection

Select all Draw/Tag registered in edit screen by clicking left button of mouse.

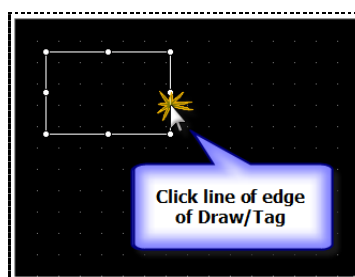
Selecting method is different along whether figure or touch tag is filled or not.

In case of Draw/Tag which has the property of filling, it can be selected if clicks any place in the range.



[Figure. Select Draw/Tag with property of filling]

If there is no property of filling, the selection is possible if selects the line with line of edge.

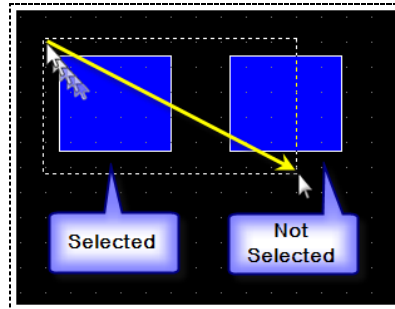


[Figure. Select Draw/Tag without property of filling]

5.1.2 Select range

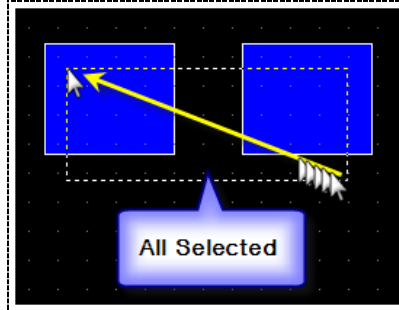
It is the selecting method which selects by square dotted line displayed when drags mouse in edit screen. There are two way to select the range. If use two methods along editing situation, can select or release Draw/Tag easier.

1. It is selected only when the range is selected from left to right direction, entire Draw/Tag within the range is included.



[Figure. Select only Draw/Tag including the whole]

2. Select all Draw/Tag within a range of right to left direction for selection.



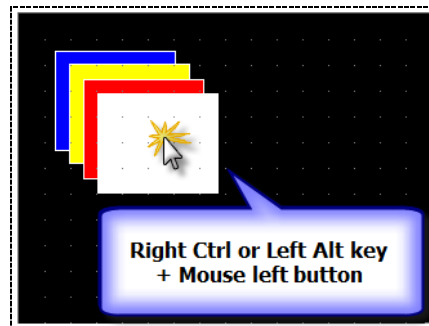
[Figure. Select Draw/Tag including some parts]

5.1.3 Selection of overlapped Draw/Tag

Sometimes, it is difficult to select Draw/Tag when more than two Draw/Tag are overlapped.

When multiple figures are overlapped like [Figure. Select the overlapped figures], the figures located at the places are selected in sequence alternately whenever clicks.

If there is no right Ctrl key, can use left Alt key.

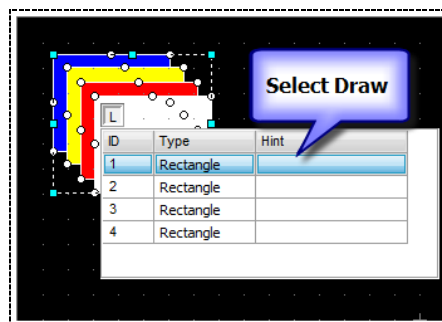


[Figure. Select the overlapped figures]

5.1.4 Selecting the overlapped Draw/Tag using POP-UP menu

When Draw/Tag are overlapped, can select it by using popup menu in order to select the Draw/Tag separately.

If selects and double-clicks all figures and tags using range selection, popup menu which shows the selected list is displayed such as [Figure. Select popup menu]. If selects Draw/Tag in the list in sequence, can select Draw/Tag easily. But, the property edit for selected Draw/Tag is possible.



[Figure. Select popup menu]

5.1.5 Multiple section and release POP-UP

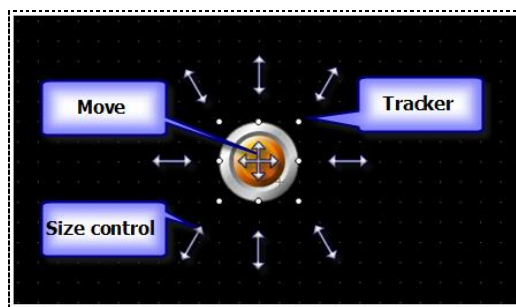
If selects other Draw/Tag with [Shift] key pressed at the condition of selecting Draw/Tag, can select or release figures additionally.

5.2 Move and size change

5.2.1 Move and size change using mouse

If Draw/Tag are selected, the tracker is marked as [Figure. Tracker and mouse cursor]. Given the tracker has 8 directions, can change its size if user selects and drag the tracker to the direction with left button of mouse pressed.

If mouse cursor is placed above Draw/Tag with property of filling or above the edge of Draw/Tag without property of filling, the cursor is changed to arrow-shaped cross and can move it to the place dragging with left button pressed.



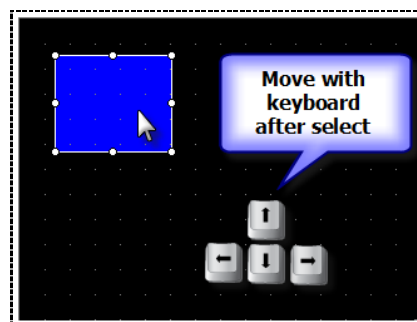
[Figure. Tracker and mouse cursor]

5.2.2 Move and size change using keyboard

Can move figure by pixel unit using arrow keys of keyboard when Draw/Tag are selected.

Also, if press space bar, moving unit is changed from pixel to lattice shape unit in the screen.

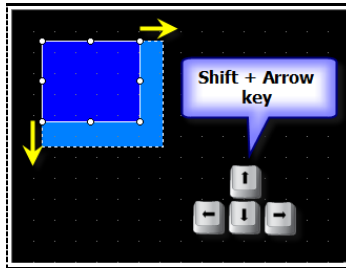
Unit change is changed by each pressing of space bar.



[Figure. Move Draw/Tag with keyboard]

If press arrow keys with Shift key of keyboard pressed, sizes of Draw/Tag can be changed.

Size change is possible to the direction as right X axis and downward Y axis.

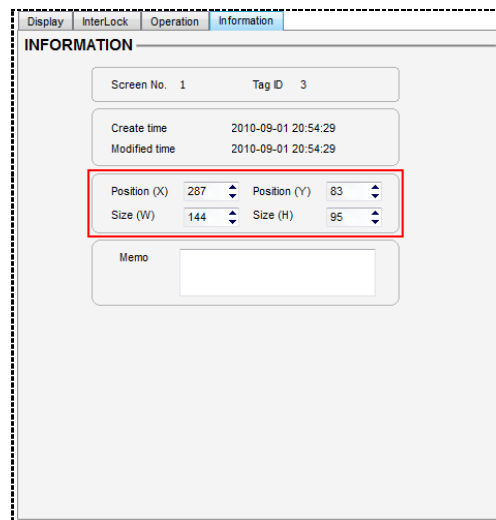


[Figure. Change the sizes of Draw/Tagwith keyboard]

5.2.3 Position and size change in Information page

If changes the coordinates information and size information in [Information] of tag property, the position and size are changed.

Left and upper tracker shown in tag becomes the standard of the coordinates and its unit is pixel.

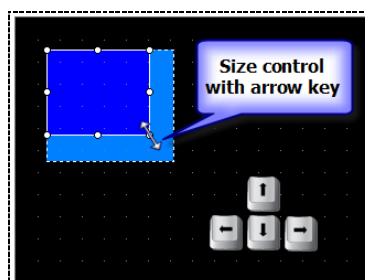


[Figure. Move and size change in property window]

5.2.4 Size change using keyboard and mouse

Can change size of Draw/Tag using keyboard and mouse simultaneously.

If places mouse cursor above tracker of the selected Draw/Tag, the cursor is changed to the arrow shape. At this time, if uses the arrow keys of keyboard, its size is changed.



[Figure. Size change using keyboard and mouse]

5.3 Undo & Redo

5.3.1 Undo (Ctrl + Z)

Can cancel the editing such as all moving of Draw/Tag, copy, paste and delete done in project edit screen in sequence. It is possible up to 50 times for each screen.

Select [Edit]–[Undo] of menu or [Undo] of toolbar.

5.3.2 Redo (Ctrl + R)

Can return it the original status in sequence which is very before [Undo] operated in project edit screen. . It is possible up to 50 times for each screen. Select [Edit]–[Redo] of menu or [Redo] of toolbar.

5.4 Select All

Select all figures and tags registered in screen. Select [Edit]–[Select All] of menu in edit screen, or [Select All] of popup menu which is appeared upon clicking right button of mouse or toolbar. Can select all if press [Ctrl + A] of keyboard in screen as shortcut key.

5.5 Coy & Paste

5.5.1 Cut (Ctrl + X)

Cut is the same function as implementing copy and cut in sequence.

Select Draw/Tagand [Edit]–[Cut] of menu, or [Cut] of popup menu appeared upon pressing right button of mouse or toolbar.

If executes cut, the selected Draw/Tagare saved in Windows clipboard.

5.5.2 Copy (Ctrl + C)

When needs to copies of Draw/Tag, use copy function conveniently.

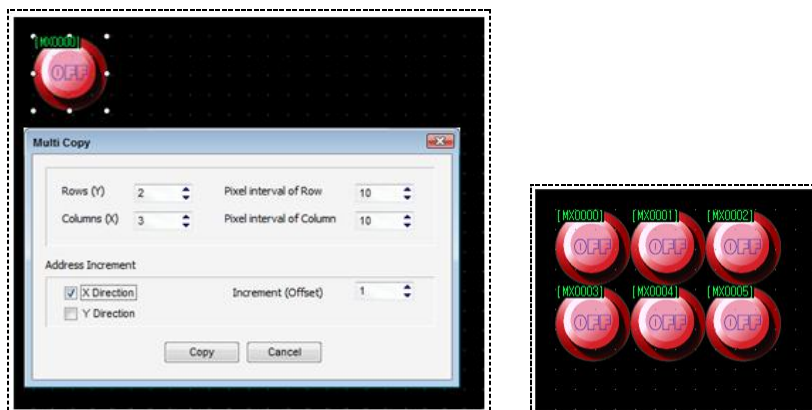
Select Draw/Tagand [Edit]–[Copy] of menu, or [Copy] of popup menu appeared upon pressing right button of mouse or toolbar.

If executes copy, the selected Draw/Tagare saved in Windows clipboard till next execution of copy or cut.

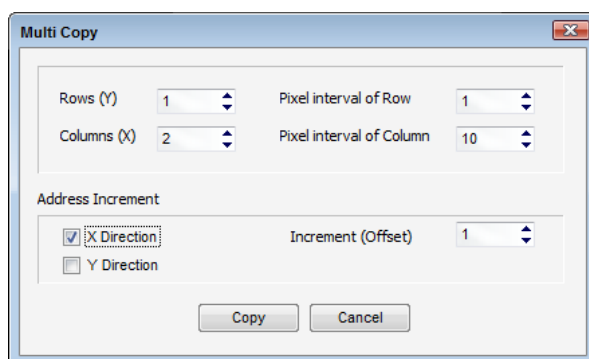
5.5.3 Multiple copy (Ctrl + T)

When needs to copy one or more than one Draw/Tag several times, it is the function which can be used conveniently. In case of tag, can increase the address used in tag along options.

If selects tags, [Edit]–[Multiple copy] of menu, or clicks the icon [Multiple copy] of toolbar, [Multiple copy] gets shown as [Figure. Multiple copy].



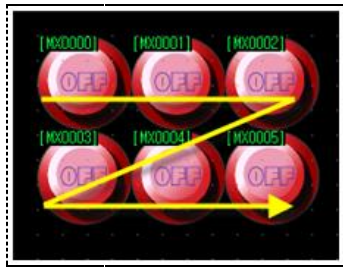
[Figure. Multiple copy]



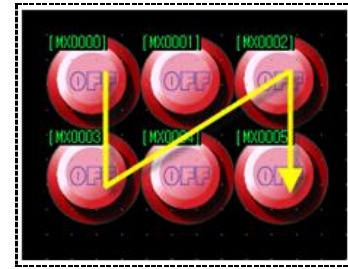
[Figure. Multiple copy setting screen]

Multiple copy	Explanation
Rows (Y)	Y direction is increased to length direction as number of setting.
Pixel interval of Row	Sets the gap (pixel) between objects to be copied regarding Y direction
Columns (X)	X direction is increased to width direction as number of setting.
Pixel interval of Column	Sets the gap (pixel) between objects to be copied regarding X direction
Address increment	<p>The address of copied object is increased as much [Added value] in the set address automatically. If checks [X direction], it is increased to X direction, checks [Y direction], it is increased to Y direction.</p> <p>Ex) The address of created object becomes [MX0000, MX0001, MX0002, MX0003, MX0004] in sequence if the address of original object is 5 and increasing value is one.</p>

[X direction] is the address-increasing direction with priority of width direction in multiple copy dialog window, [Y direction] is the address-increasing direction with priority.



[Figure. X direction address increased]



[Figure. Y direction address incased]

5.5.4 Paste (Ctrl + V)

It is the function to insert the Draw/Tag saved in the clipboard from copy, cut to the place user wants to place.

Select [Edit]–[Paste] of menu, or [Paste] of popup menu appeared upon pressing right button of mouse or toolbar.

If executes paste with copy or cut is not implemented, nothing is executed.

5.5.5 Paste it to the same position (Ctrl + Shift + V)

In case of paste explained previously. Must designate the position to paste Draw/Tag with mouse.

[Paste(Same Original Position)] is the function to insert it to the same position as original one.

Select [Edit]–[Paste(Same Original Position)] of menu from screen to paste, or [Paste(Same Original Position)] of popup menu appeared upon pressing right button of mouse or toolbar.

5.5.6 Delete

Delete the selected Draw/Tag.

Select the object to delete and [Edit]–[Delete] of menu, or [Delete] of popup menu appeared upon pressing right button of mouse or toolbar.

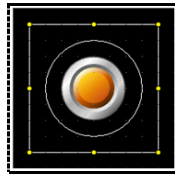
5.6 Group

5.6.1 Create group (Ctrl + G)

Can do edit works by designating multiple Draw/Tag.

Select more than two Draw/Tag and [Edit]–[Group] of menu, or [Group] of popup menu appeared upon pressing right button of mouse or toolbar.

The tracker of designated Draw/Tag is marked in yellow.



[Figure. Selected condition as group]

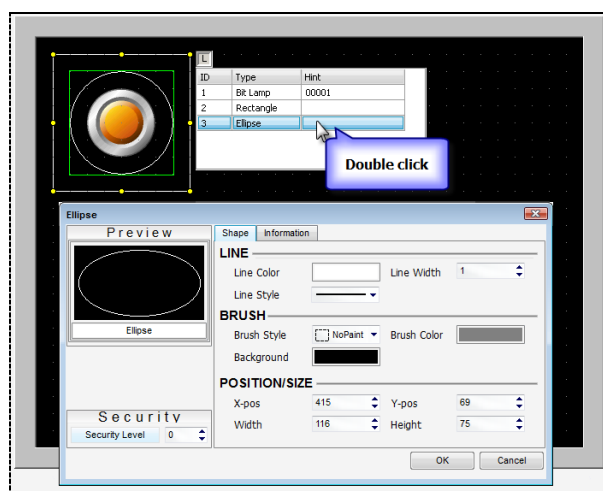
5.6.2 Release group (Ctrl + U)

Release bound Draw/Tag in group. Select [Edit]–[Group] of menu, or [Group] of popup menu appeared upon pressing right button of mouse or toolbar.

5.6.3 Edit Draw/Tagin group

Can change the color or address without releasing bound Draw/Tagin group.

If selects group and double-clicks it with left button of mouse, it displays the list of Draw/Tagbound in group as [Figure. Edit group property]. If double-clicks Draw/Tagto change their property in the list, import property edit screen.



[Figure. Edit group property]

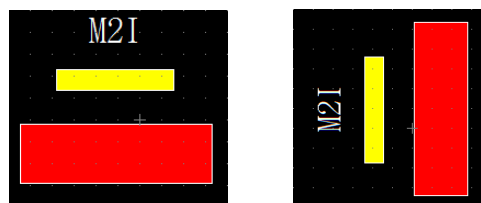
5.7 Rotate

It is the function to rotate Draw/Tagto left or right.

Select Draw/Tagand [Edit]–[Rotate] of menu, or [Rotate] of popup menu appeared upon pressing right button of mouse or toolbar.

(1) Rotate Left (<)

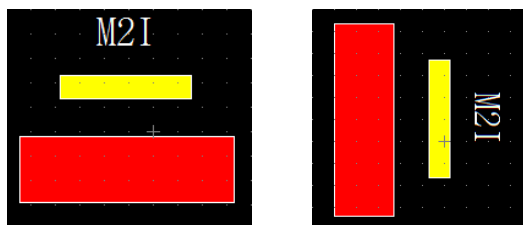
Rotate the selected Draw/Tagto left by 90°.



[Figure. Rotate Left]

(2) Rotate Right (>)

Rotate the selected Draw/Tagto left by 90°.



[Figure. Rotate Right]

(3) Cancel Rotate (/)

Return the rotated Draw/Tagto the original condition.

5.8 Property

Use it when executing property edit window to change the property of Draw/Tag.

Select Draw/Tag and [Edit]–[Property] of menu, or [Property] of popup menu appeared upon pressing right button of mouse or toolbar.

As normal method, double-click Draw/Tag to edit.

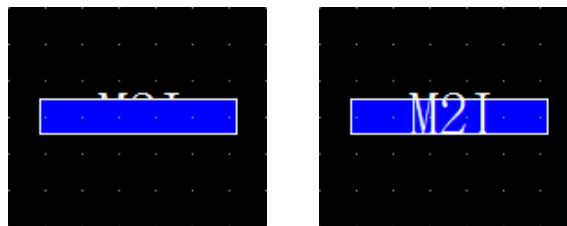
5.9 Align

XDesignPlus provides with various sorting function. More simple and correct edit is possible using edit function.

Select Draw/Tag and the desire sorting method in [Edit]–[Align] of menu, or sorting icon in upper toolbar or select it in popup menu after clicking right bottom of mouse.

(1) Send Front End (Ctrl + Home)

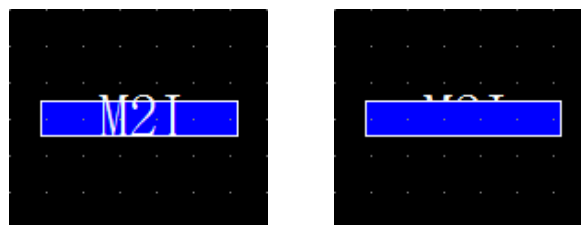
When one Draw/Tag is placed under others by overlapping, send most forward.



[Figure. Send Front End]

(2) Send Back End (Ctrl + End)

When one Draw/Tag is placed over others by overlapping, send most backward.



[Figure. Send backward]

(3) Send Front once (Home)

It is the same operation as [Send Front End], but it moves once when multiple objects are overlapped.

(4) Send Back once (End)

It is the same operation as [Send Back End], but it moves once when multiple objects are overlapped.

(5) Align Left (Ctrl + Shift + ←)

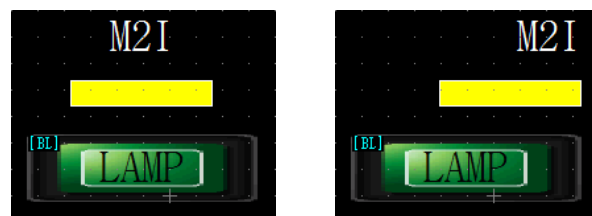
Move them based on Draw/Tag placed at most left position out of the selected Draw/Tag.



[Figure. Align Left]

(6) Align Right (Ctrl + Shift + →)

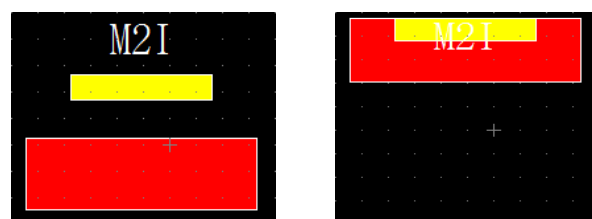
Move them based on Draw/Tag placed at most right position out of the selected Draw/Tag.



[Figure. Align Right]

(7) Align Top (Ctrl + Shift + ↑)

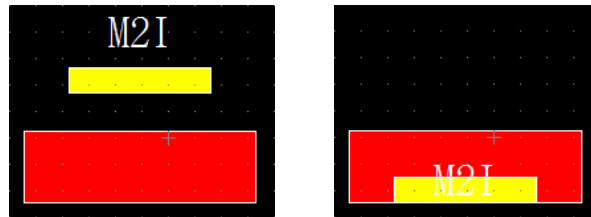
Move them based on Draw/Tag placed at most upper position out of the selected Draw/Tag.



[Figure. Align Top]

(8) Align Bottom (Ctrl + Shift + ↓)

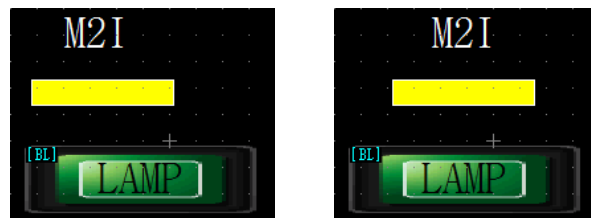
Move them based on Draw/Tag placed at lowest position out of the selected Draw/Tag.



[Figure. Align Bottom]

(9) Align Center (Ctrl + Shift + C)

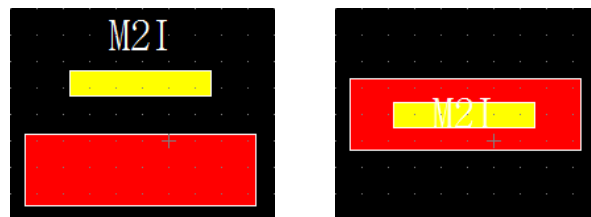
Move the selected Draw/Tag to the center so that they can match center standard of Y axis.



[Figure. Align Center]

(10) Align Middle (Ctrl + Shift + M)

Move the selected Draw/Tag to the middle so that they can match center standard of Y axis.



[Figure. Align Middle]

(11) Automatic Horizontal Space

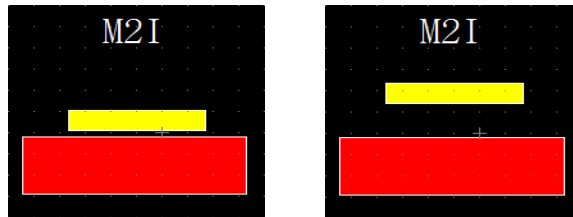
Move the selected Draw/Tag so that their horizontal width gap can be the same.



[Figure. Automatic Horizontal Space]

(12) Automatic Vertical Space

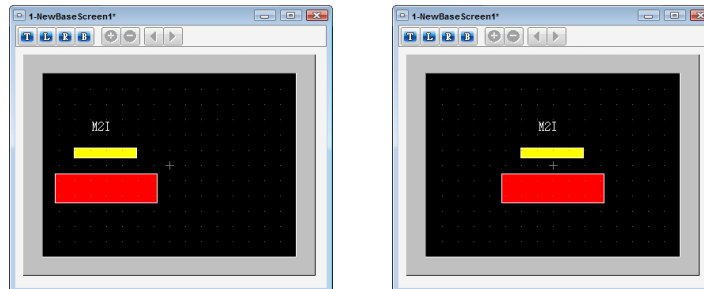
Move the selected Draw/Tag so that their vertical length gap can be the same.



[Figure. Automatic Draw/Tag ertical Space]

(13) Center in window Horizontal

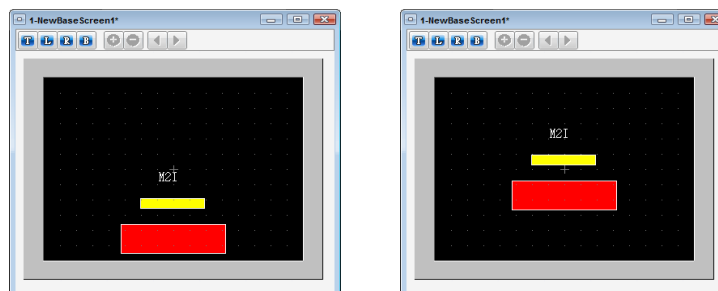
Move the selected Draw/Tag to center position horizontally.



[그림. Center in window Horizontal]

(14) Center in window Vertical

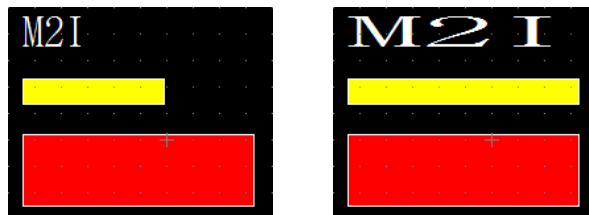
Move the selected Draw/Tag to center position vertically.



[Figure. Center in window Vertical]

(15) Width : Grow to largest

Match the selected Draw/Tag to its largest width.



[Figure. Width : Grow to largest]

(16) Width : Shrink to smallest

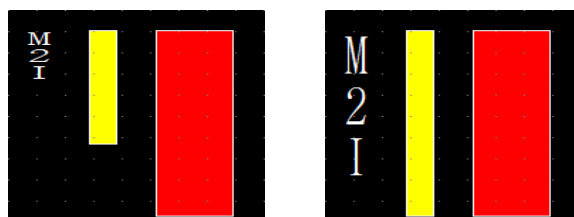
Match the selected Draw/Tag to its smallest width.



[Figure. Width : Shrink to smallest]

(17) Height : Grow to largest

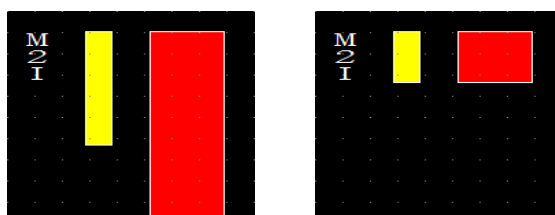
Match the selected Draw/Tag to its largest length.



[Figure. Height : Grow to]

(18) Height : Shrink to smallest

Match the selected Draw/Tag to its smallest length.



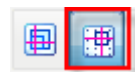
[Figure. Matching to smallest length]

5.10 Snap

Snap in dictionary is clicking sound. The function of snap called magnet is the function of attaching feature to a certain standard like a magnet when drawing figure or tag or move or change the size.

5.10.1 Grid snap

When grid view option of edit screen is used, grid snap is the function to edit the move of Draw/Tag and size change unit by lattice unit. When using mouse, moving unit of mouse pointer is not by pixel but by gap between grid lattices, and when using keyboard, it moves along grid lattice upon pressing the arrow keys.



[Figure. Grid snap of toolbar]



Note When wants to execute fine movement in activated grid snap condition, move mouse with [Ctrl] key pressed. Also, when wants to execute fine movement, it is converted [Fine movement] ↔ [Grid snap] upon each press of [Space] key.

5.10.2 Object snap

While grid snap is accomplished by already-fixed grid lattice unit, object snap is the function that can snap it based on the left or upper side of Draw/Tag which user already registered in screen.

There are the options related with snap at bottom of [Tool]–[Edit option] of menu.

In case of object snap, can display snap point with line along the option.



[Figure. Object snap of toolbar]

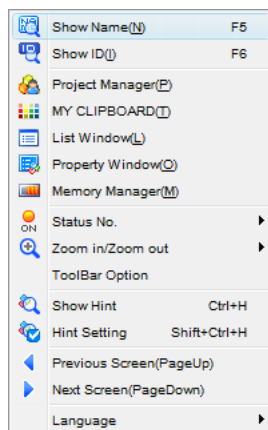
CHAPTER 6 View menu

CHAPTER 6 – View menu

Explain [View] menu.

View menu enables the left and right docking windows of XDesignerPlus program to be shown or hidden.

Also, can set various view types of screen and select the language of program.

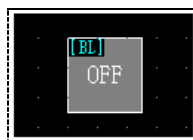


[Figure. View Menu]

6.1 View tag name (F5)

Popup help is displayed at left upper of registered screen explaining tag. Tag name is displayed in this popup help.

.



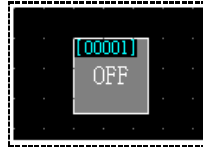
[Figure. Bit lamp and tag name]

Display of tag name is as following chart.

Tag	Mark in English	Mark of tag name
Bit lamp	Bit Lamp	[BL]
Word lamp	Word Lamp	[WL]
N Lamp	N-State Lamp	[NL]
Touch	Touch	[T]
Touch+ Bit Lamp	Touch+ Bit Lamp	[TL]
Touch+ Word Lamp	Touch+ Word Lamp	[TW]
터치+N Lamp	Touch+ N-State Lamp	[TN]
Numeric	Numeric	[N]
String	String	[S]
Keypad Display Numeric	Keypad Display Numeric	[NK]
Keypad Display String	Keypad Display String	[CK]
Bit Message	Bit Message	[MB]
Word Message	Word Message	[MW]
Bit Window	Bit Window	[WB]
Word Window	Word Window	[WW]
Bit Parts	Bit Parts	[BP]
Word Parts	Word Parts	[WP]
Alarm	Alarm	[AL]
Alarm extension	AlarmEx	[ALEX]
Bit Window	Log Table	[LO]
Word Window	EventLog View	[EVLV]
Bar Graph	Bar Graph	[GRA]
Linear Graph	Linear Graph	[GRB]
Extended graph	Graph Ex	[GEX]
Record	Record	[REC]
X/Y chart A	X/Y chart A	[XY]
X/Y chart B	X/Y chart B	[XY2]
Calculation	Calculation	[CA]
Communications	Comm	[CO]
Clock	Clock	[CL]
File list	File List	[LIST]
Document viewer	DocViewer	[DV]
Slide	Slide	[SL]

6.2 View tag ID (F6)

Popup help is displayed at left upper of registered screen explaining tag. Tag ID is displayed in this popup help.



[Figure. Tag ID of bit lamp]

[ID] is given number along registering sequence of figure and tag in screen. ID is displayed at [Register information] in property of figure or tag. The figure or tag which first registers is displayed as [00001] and second register is displayed as [00002].

6.3 Docking window

Docking means to attract and attach like magnet.

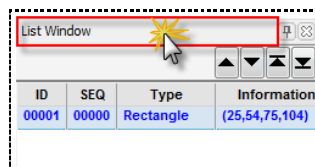
Functional docking window provided in XDesignerPlus program consists of [Project manager], [List window], [Memory manager] at left and [My clipboard], [Property window] at right.

6.3.1 Treat docking window

Docking window can be all used in XDesignerPlus program by docking or separation, can be shown or hidden as the occasion demands.

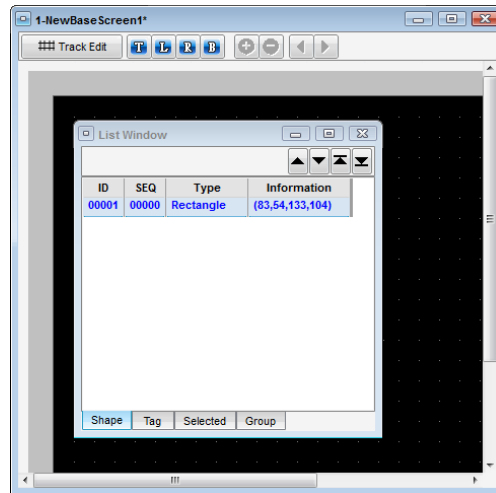
(1) Separating docking window

Fixed docking window can be separated by mouse dragging easily.



[Figure. Separating docking window]

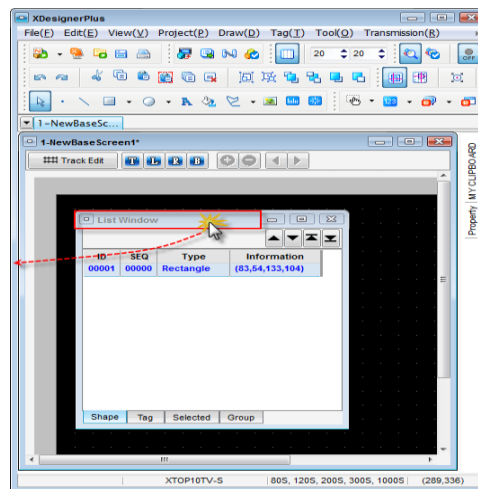
If clicks [Title] part of the fixed list window, moves it to outside by mouse dragging, docking window gets separated as below figure.



[Figure. Separating docking window]

(2) Fixing docking window

Separated docking window gets docked if [Drags] [Title] part and [drops] to vertical list part as the same way of separating fixed docking window.



[Figure. Fixing docking window]

(3) View and hide docking window

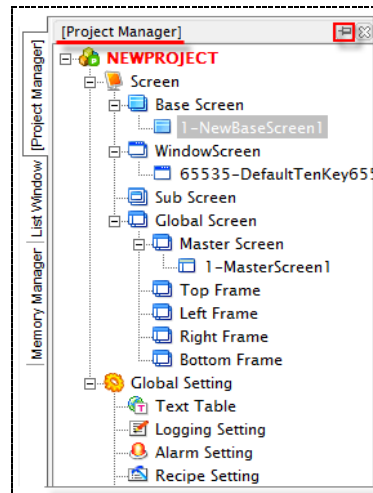
Docking window gets shown if selects it in [View] menu.

Given there are many kinds of docking windows, can use both left and right docking windows by executing [View/hide] after docking as the occasion demands.

- View and hide left docking window

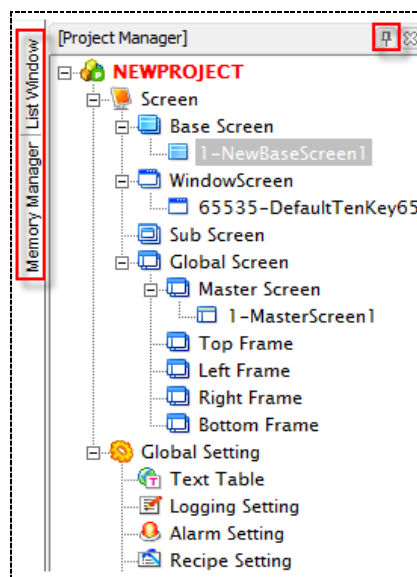
There are [Project manager], [List window] and [Memory manager] at left docking window. If selects this window in [View] menu, registers and executes docking, the vertical list gets shown at left.

If clicks the vertical list, the window gets shown as following figure.



[Figure. View left docking window]

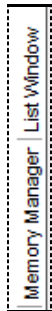
But, the window gets closed at the moment mouse clicks other position because this condition is not fixed. When wants to keep viewing the open window in fixed mode continuously, click the picture of a tack (📌) are right upper. Then, the picture of a tack is changed to the fixed shape (📌) and can make the window visible.



[Figure. View left docking window]

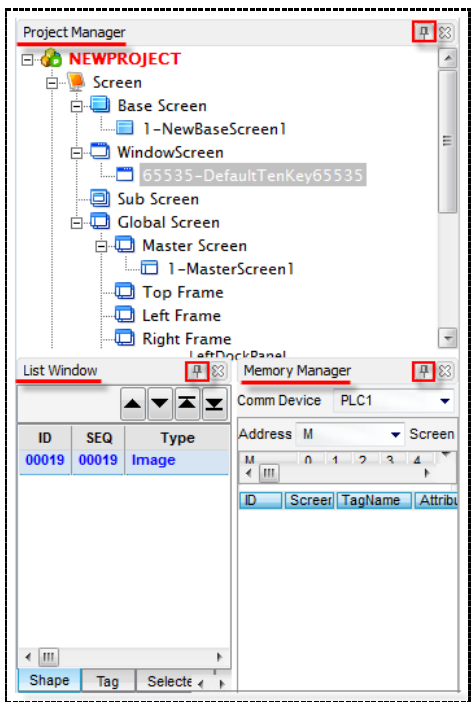
Can recognize that [Project manager] is open because the title called [Project] is specified at upper side. There left [Memory] and [List window] omitting [Project] in the vertical list.

Can hide 3 kinds of all fixed tacks (📌) by clicking them at left docking window.



[Figure. Hidden status of left docking window]

Also, can view 3 kinds of all tacks (📌) by clicking them at right upper of docking window.



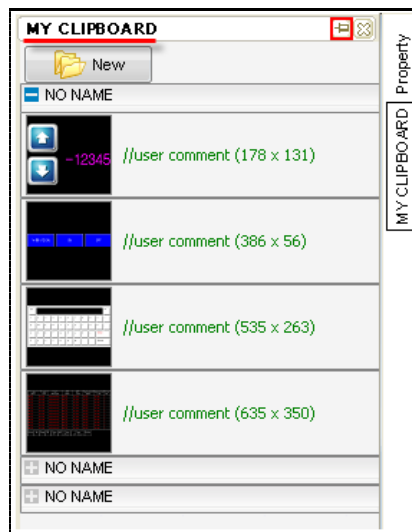
[Figure. All open status of left docking window]

The position of docking window can be changed to match the user by dragging the upper part having title by mouse.

- View and hide right docking window

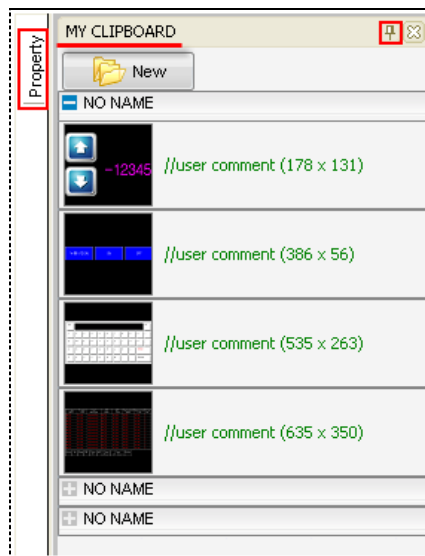
There are [My clipboard], [Property window] at left docking window. When exit it, select it in [View] menu. If registers and executes docking, the list gets appeared at right side.

If clicks the vertical list, the window gets shown as following figure.



[Figure. View right docking window]

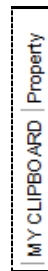
But, the window gets closed at the moment mouse clicks other position because this condition is not fixed. When wants to keep viewing the open window in fixed mode continuously, click the picture of a tack (📌) are right upper. Then, the picture of a tack is changed to the fixed shape (📌) and can make the window visible.



[Figure. View right docking window]

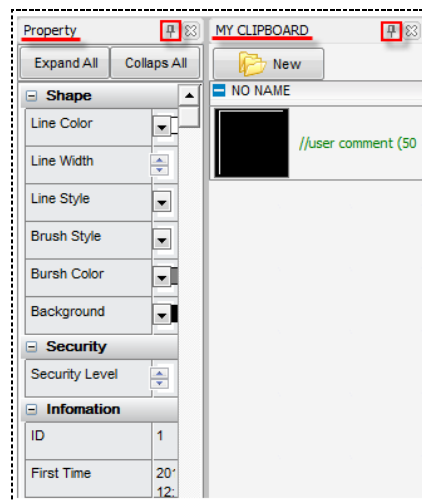
The title called [My clipboard] is specified at upper part, there left [Property] window left omitting [My clipboard] in the vertical list.

Right docking window can be hidden by clicking 2 kinds of all tacks.



[Figure. Hiding status of whole right docking window]

Also, can keep viewing 2 kinds of docking window by clicking tack(📌) at right upper part.

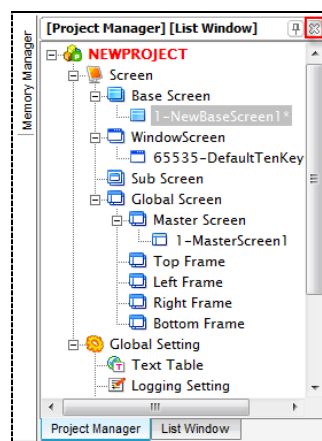


[Figure. Open status of all right docking window]

(4) Remove docking window

If wants to exit docking window, press [X] button at right upper part.

If press [X] button at below figure, open project manager and list window are exited.

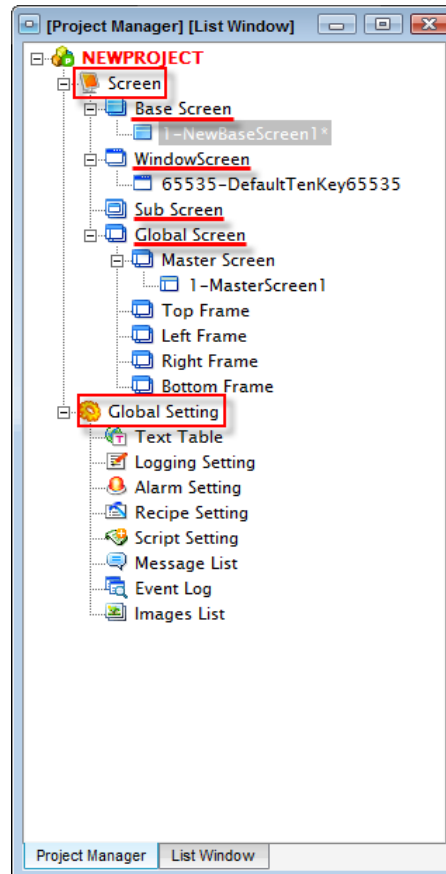


[Figure. Remove docking window]

6.4 Project manager

[Project manager] is left docking window.

[Project manager] is the window that manages screen of project and situation of entire setting at a look. If executes the program, creates new project or open existing project, the screen and list of entire setting gets shown.



[Figure. Project Manager]

6.4.1 Screen part

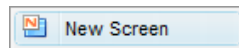
Can recognize the screen composition of project at a look.

It consists of base screen, window screen, subscreen and global screen by tree structure.

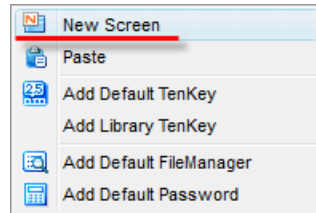
(Refer to [3, 4] of [chapter 3] regarding each screen for more details.)

(1) Create screen

If clicks base screen, window screen, subscreen, upper frame, left frame, right frame and lower frame in [Project manager] and press right button of mouse, popup menu [New screen] appears.



[Figure. Popup menu of base screen, subscreen, frame screen]

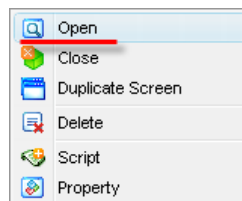


[Figure. Popup menu of window screen]

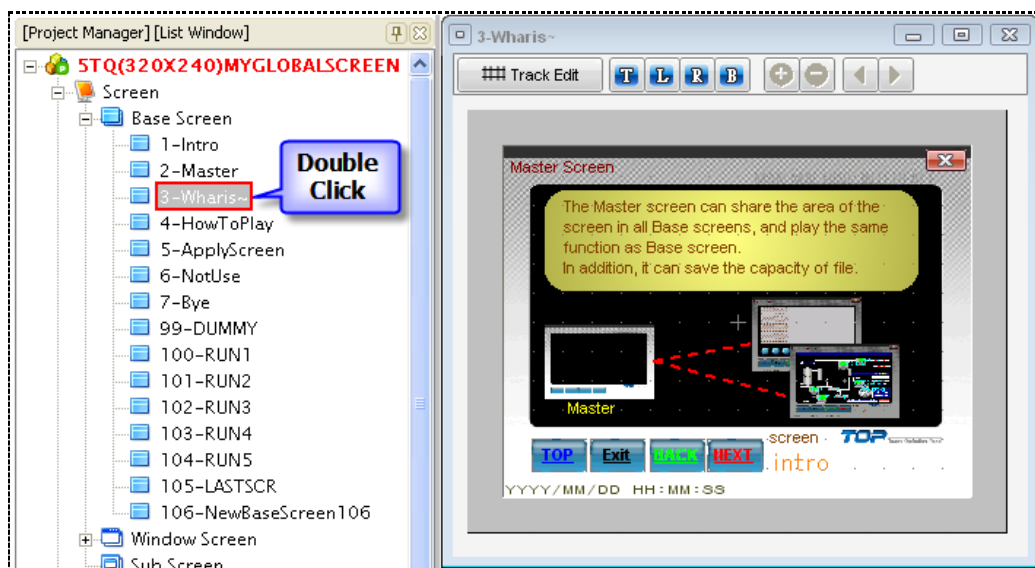
If press new screen in popup menu, new screen appears along type of screen.

(2) Open screen

The screen of project gets open if selects [Open] in popup menu which appears upon press of right button of mouse after clicking screen name, or double-clicks the name of screen.



[Figure. Select [Open] in popup menu of screen name]



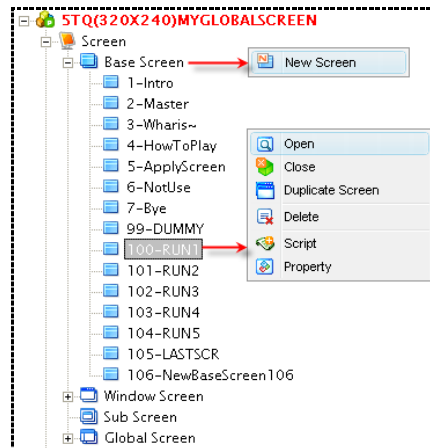
[Figure. Double-click screen name]

(3) Popup menu

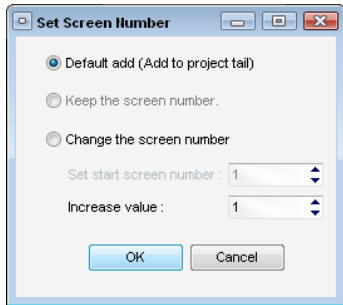
If press [Right button of mouse] after selecting the list, popup menu gets appears.

Popup menu gets different along the type of screen.

- **Popup menu of base screen**

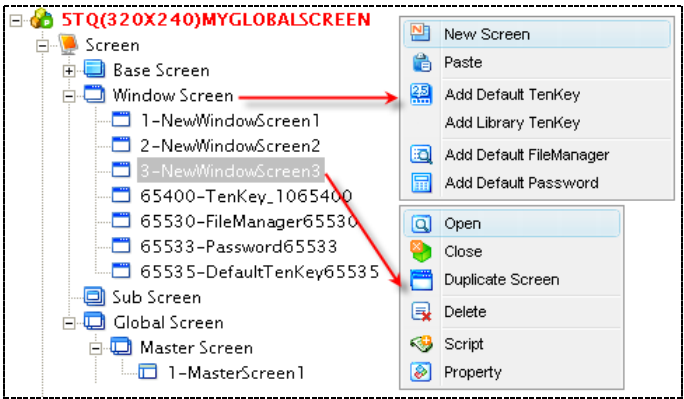


[Figure. Popup Menu of Base Screen]

Popup menu	Explanation
New screen	Create new base screen.
Open	Open the selected base screen.
Close	Close the selected base screen.
Screen copy	<p>Copy the selected base screen.</p> <p>[Screen number setting] screen appears if press menu. It sets screen number to be created copied from this screen.</p> <p>[Automatic add] adds the second largest number out of the currently registered base screen number. [Screen number change] adds the copied screen to input number by input [Start screen number].</p> 
Delete	Delete the selected base screen.
Script	Set the script to be applied to the selected base screen only.


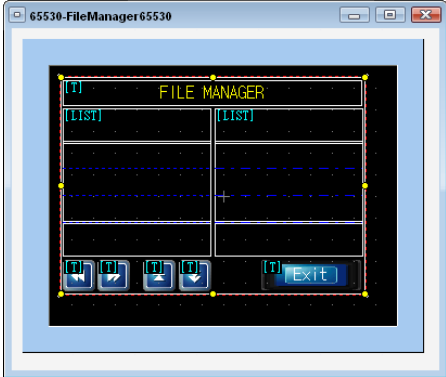
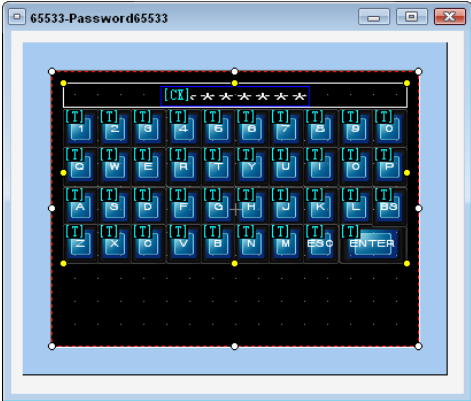
Property	Show the property of selected base screen.
----------	--

- Popup menu of **window** screen



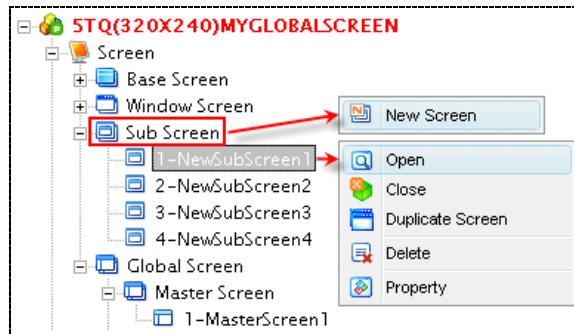
[Figure. Popup menu of window screen]

Popup menu	Explanation
New screen	Create new window screen.
Add Default Tenkey	<p>Add automatic Tenkey window screen</p> <p>Automatic Tenkey window screen is created automatically, but it can be created using this menu in case of deleting automatic Tenkey window screen. Automatic Tenkey window screen is used in [number/character key display tag].</p> <p>(Refer to [19.4.1] of [chapter 19] regarding how to use automatic Tenkey window.)</p>
Add Library Tenkey	<p>Add the registered Tenkey(keypad) window screen in library.</p> <p>Several shape of Tenkey is registered by dividing small/large. Select Tenkey to register in window screen, input [Window screen] and press [Add] button at lower part. Window number which can register in library Tenkey fixed as number [65400~65499].</p>

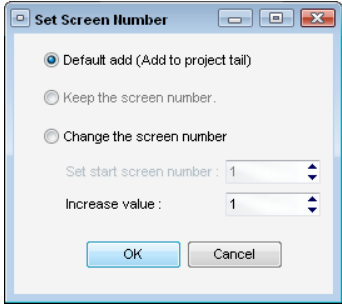
	
Add file manager window	<p>Add file manager window screen</p>  <p>(☞ Refer to [40.6] of [chapter 40] regarding how to use file manager.)</p>
Add password window	<p>Add password window screen</p> <p>Password window screen is used to input password when [password setting] function is applied to project. Touch password-input part at top area, input password using character keypad and press [ENTER] key.</p>  <p>(☞ Refer to [7.10] of [chapter 7] regarding password setting and window screen.)</p>
Open	Open selected window screen.
Close	Close selected window screen.
Copy screen	Copy selected window screen.

Delete	Delete selected window screen.
Script	Set script to be applied to selected window screen only.
Property	Show property of selected window screen.

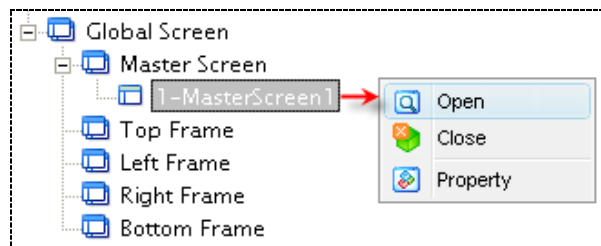
- **Popup menu of subscreen**



[Figure. Popup menu of subscreen]

Popup menu	Explanation
New screen	Create new subscreen.
Open	Open selected subscreen.
Close	Close selected subscreen.
Copy screen	<p>Copy selected subscreen.</p> <p>If press menu, [Screen number setting] screen appears. It sets newly-created screen number to be copied to this screen.</p> <p>[Automatic add] adds the copied screen to the second largest number out of the currently registered subscreen number. [Screen number change] adds the copied screen to input number by input [Start screen number].</p> 
Delete	Delete selected subscreen.
Property	Shows property of selected subscreen.

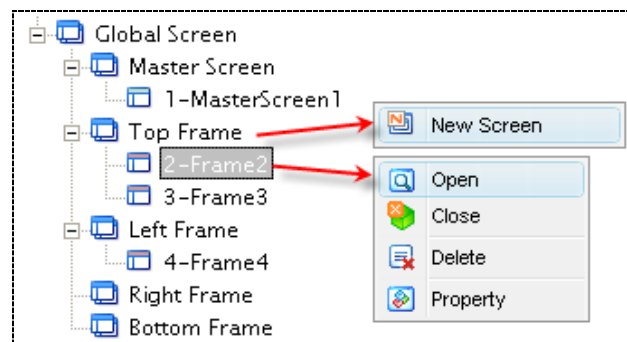
- Popup menu of master screen



[Figure. Popup menu of master screen]

Popup menu	Explanation
Open	Open master screen.
Close	Close master screen.
Property	Show property of master screen.

- Popup menu of frame screen



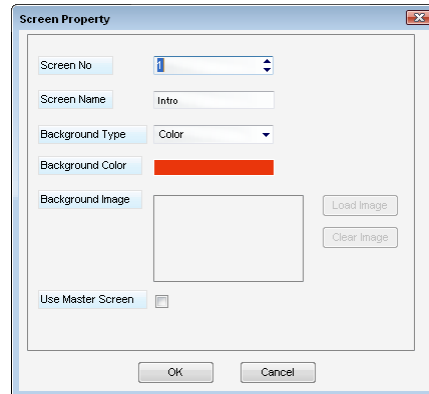
[Figure. Popup menu of frame screen]

Popup menu	Explanation
New screen	Create new frame screen.
Open	Open selected frame screen.
Close	Close selected frame screen.
Delete	Delete selected frame screen.
Property	Show property of selected frame screen.


(4) Screen property

Explain [Property] of each screen

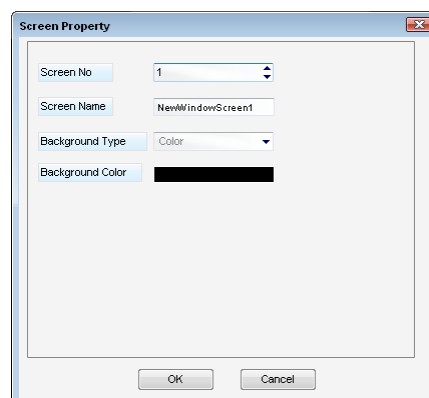
- Property of base screen



[Figure. Screen property of base screen]

Property	Explanation
Screen number	Designate screen number of base screen.
Screen name	Designate name of base screen.
Background type	Select background type of base screen.  Type of background is two kinds, [Color] and [Image].
Background color	In case of selecting [Color] as [Background type], select color.
Background image	In case of selecting [Image] as [Background type], import the image(*.bmp, *.jpg, *.jpeg) to use as background by press [Import] button.
User master screen	Check if using master screen.

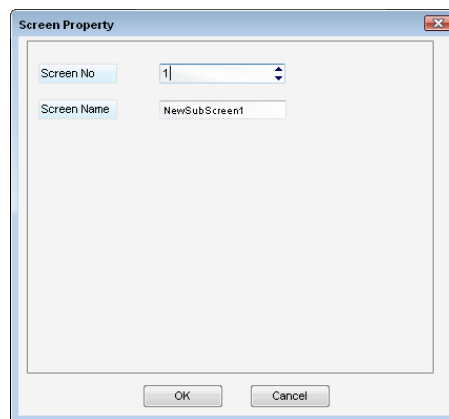
- Property of window screen



[Figure. Screen property of window screen]

Property	Explanation
Screen number	Designate screen number of window screen.
Screen name	Designate name of window screen.
Background type	Select background type of window screen. Given that [Color] is only available for background type of window screen, it is fixed as [Color].
Background color	Select color to be used as background.

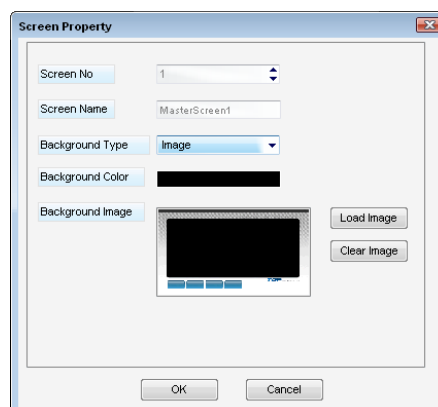
- Property of subscreen




[Figure. Screen property of subscreen]

Property	Explanation
Screen number	Designate screen number of subscreen.
Screen name	Designate name of subscreen.

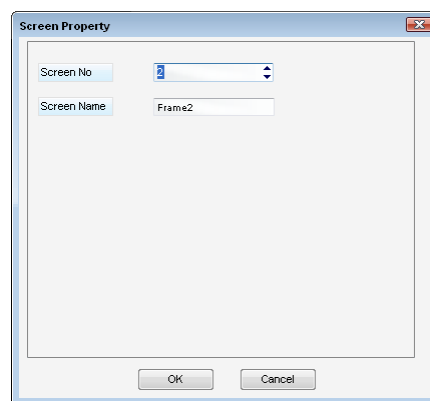
- Property of master screen



[Figure. Screen property of master screen]

Property	Explanation
Screen number	Show screen number of master screen. Cannot change screen number because master screen is one.
Screen name	Show name of master screen. Cannot change screen name because master screen is one.
Background type	Select background type of master screen. <div>  </div> Type of background has two kinds [Color] and [Image].
Background color	Select color in case of selecting [Color] as [Background type].
Background image	In case of selecting [Image] as [Background type], import the image(*.bmp, *.jpg, *.jpeg) to use as background by press [Import] button.

- Property of frame screen



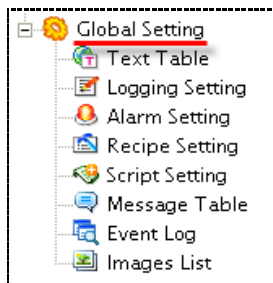
[Figure. Screen property of frame screen]

Property	Explanation
Screen number	Designate screen number of frame screen.
Screen name	Designate name of frame screen.


6.4.2 Global setting

Common setting to be applied to entire project

If double-click each list, the setting screen appears.



[Figure. Entire setting part]

Entire setting	Explanation
Text Table	Set multiple language table. (Refer to [7.3] of [Chapter 7] regarding Text Table.)
Logging setting	Set logging data. (Refer to [7.4] of [Chapter 7] regarding logging setting.)
Alarm setting	Set alarm data. (Refer to [7.5] of [Chapter 7] regarding alarm setting.)
Recipe setting	Set recipe data. (Refer to [7.6] of [Chapter 7] regarding recipe setting.)
Script Setting	Set script. (Refer to [7.7] of [Chapter 7] regarding script setting.)
Message table	Set message data. (Refer to [7.8] of [Chapter 7] regarding message table setting.)
Event Log	(Refer to [7.9] of [Chapter 7] regarding eventlog.)
Image List	Register image list to use in part tag. Add image using popup menu  button of mouse right button. (Refer to [Chapter 25~26] regarding part tag.)

6.5 My clipboard

My clipboard is right docking window.

My clipboard is a kind of library which registers the bundle of frequently-used figures or tags.

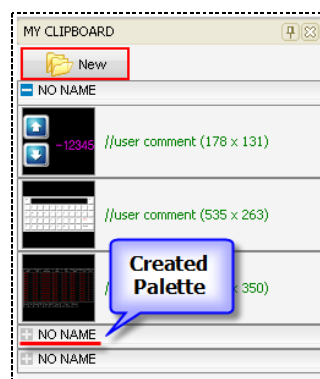
Registered list in my clipboard can be used by taking it out to screen using [Drag & drop] of mouse.

6.5.1 Palette

[Palette] is the space to put in the bundle of frequently-used figure or tag.

[Palette] can be created multiple without limit on number.

(1) Create/delete new palette



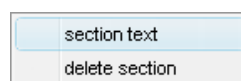
[Figure. Create new palette]

Create [Palette] at upper area by pressing  button.

If the palette is created, [NO NAME] is created at lower part of palette list.

Select the created [Palette], if press right button of mouse, popup menu appears.

Change name of [Palette] with this popup menu, delete unused popup menu appears.






[Figure. Popup menu of palette]

Popup menu	Explanation
Section text	Change name of palette.
Delete section	Delete palette. If delete palette, items in palette are deleted either.

(2) Close/open of palette

Can open, view and close palette using [+], [-] buttons at left of palette.

Button	Explanation
	Closing status of palette without item.
	Closing status of palette with items.
	Open status of palette with items.

6.5.2 Item

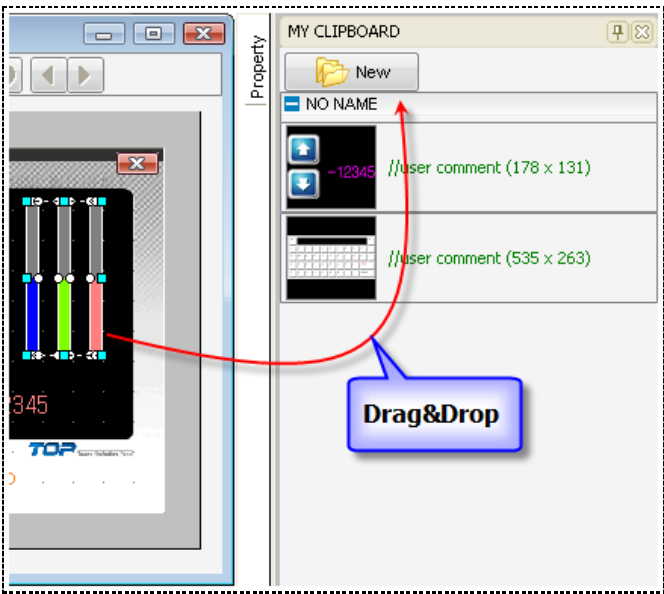
[Item] means the bundle of frequently-used figure or tag which is registered in [Palette].

[Item] can be added to [Palette] easily, [Item] registered in [Palette] can be taken out and registered.

(1) Register item in palette

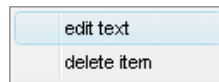
[Drag] figures or tags to register as [Item] and [Drop] it in [Palette].

Number of [Item] to register in one [Palette] has no limit.



[Figure. Register item]

If change item name, or delete unused item after registering item, select item and execute popup menu with right button of mouse.



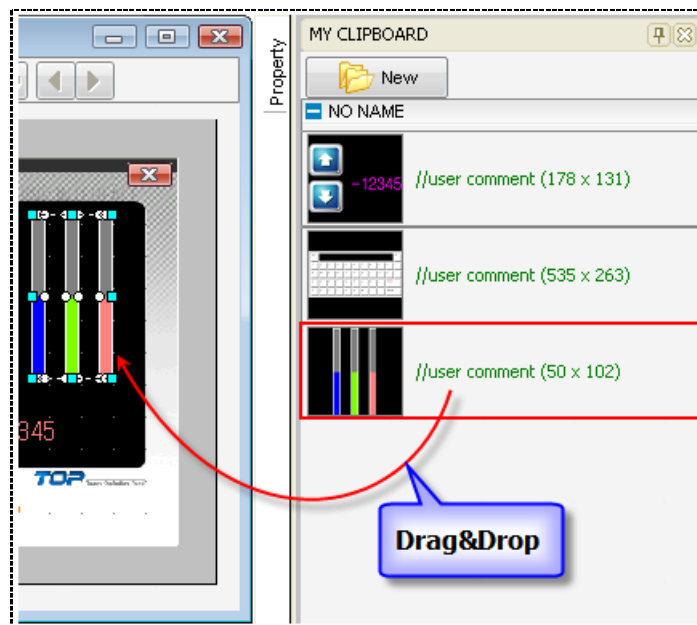
[Figure. Item popup menu]

Popup menu	Explanation
Edit text	Change TEXT (name) of item.
Delete item	Delete item from palette.

(2) Use registered item

How to use the registered item to [My clipboard] is as followings.

Select item to register in screen, [Drag & drop] it to [Edit screen].



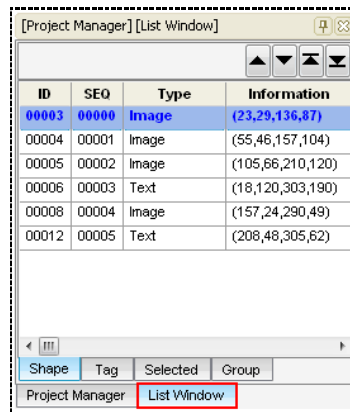
[Figure. Screen register of item]

6.6 List window

[List window] is left docking window.

List window shows the registered list of figure/tag/selection/group in the current edit screen.

If wants to view list window, select [List window] at low part of left docking window, or execute [List window] in [View] menu.



[Figure. List window]

6.6.1 Composition of list window

(1) Type of page





List window consists of figure/tag/selection/group pages.

Page	Explanation
Shape	List of figure registered in activated screen.
Tag	List of tag registered in activated screen.
Select	List of figure/tag/group registered in activated screen.
Group	List of group registered in activated screen.

(2) Property of list

Each list shows ID, SEQ, Type, and Information.

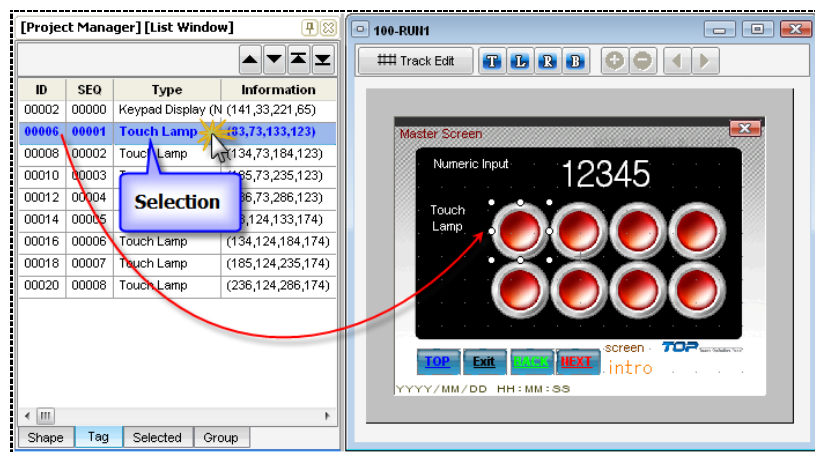
Property of list	Explanation
ID	Show ID of figure/tag/group. ID is the sequential number registered in screen.
SEQ	SEQ is execution sequence standing for Sequence.

	SEQ can be changed using     buttons at right upper.
Type	Display [figure type/tag type/group].
Information	Display position information of (Left, Top, Right, and Bottom).

6.6.2 Selection of tag/tag/group

If select figure/tag/group in list window, the figure/tag/group is selected in edit screen.

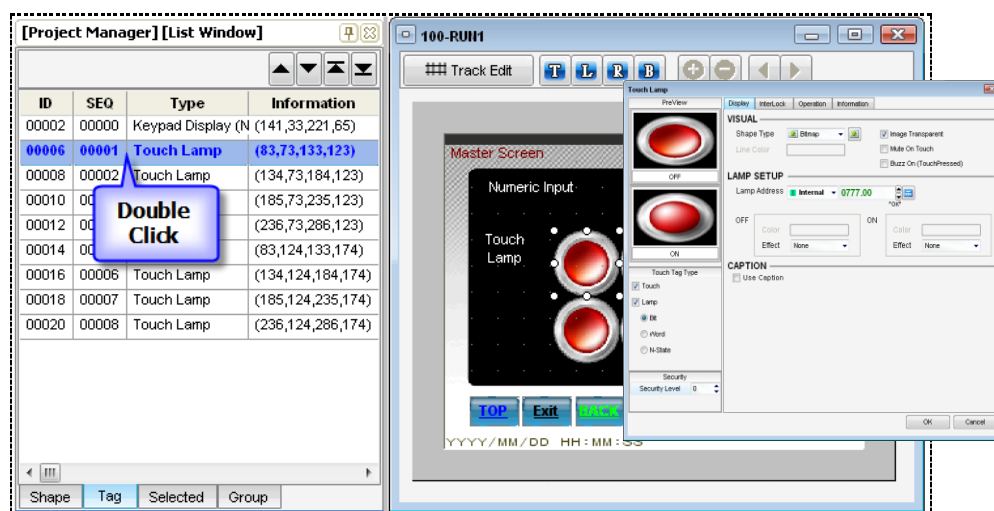
Selected figure/tag/group is displayed in green boundary as below figure.



[Figure. Select it from list window]

6.6.3 View property of figure/tag/group

If double-click the items of list window, [Property] screen of the tag/figure is imported immediately.

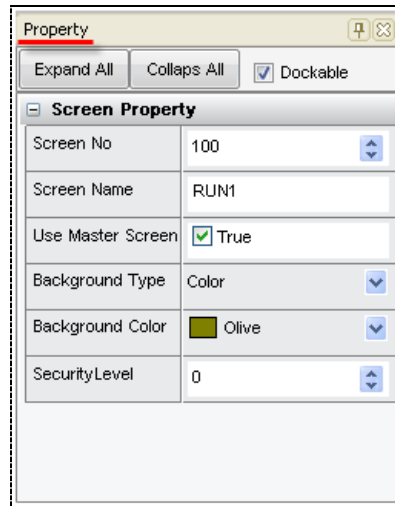


[Figure. Import property screen from list window]

6.7 Property window

[Property window] is right docking window.






Property window shows screen property, tag registered in screen and property of figure, and enables to be edited.



[Figure. Property window]

6.7.1 Composition of property window

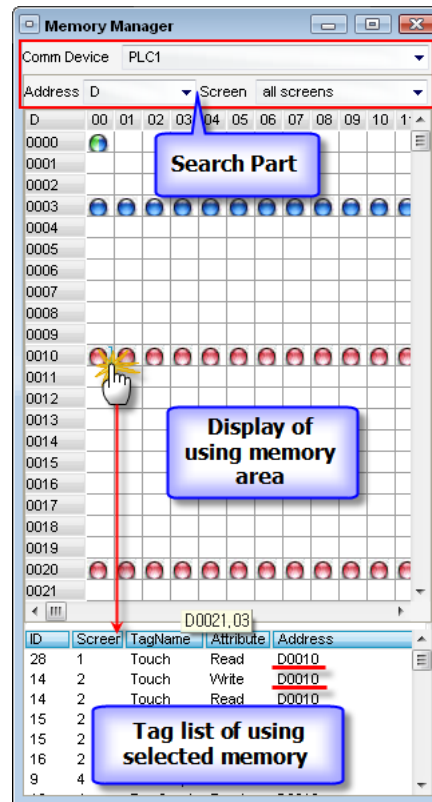
Explain detailed contents of property window.

Detailed composition	Explanation
	Display that property window is not fixed, property window gets fixed if press this button.
	Display that property window is fixed, property window gets hidden if press this button.
	Exit property window.
Unfold all	Unfold and show all property.
Fold all	Fold and hide all property.
Docking possible	Can dock property window to right if checks, if not checks, property window gets separated and cannot be docked.
	Invisible status because list of property is folded, if press this button, property list gets visible.
	Visible status because list of property is unfolded, if press this button, property list gets invisible.

6.8 Memory manager

[Memory manager] is right docking window.

Memory manager displays the address used in screen as physical boundary.



[Figure. Memory manager]

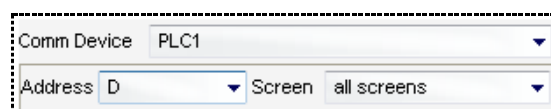
6.8.1 Memory manger composition

Memory manager consists of three parts.

1. Searching parts selecting communications unit, address and screen
2. Boundary showing memory boundary of used address along searching parts as color glass bead
3. If click color glass bead, parts showing tag list using the address

(1) Searching part

Designate memory part to show.



[Figure. Searching part]

Searching part	Explanation
Comm Device	<p>Select address type to view memory use status</p> <div style="border: 1px solid black; padding: 2px; margin: 10px 0;"> <div style="background-color: #e6f2ff; padding: 2px;">PLC1</div> <div style="padding: 2px;">[Internal]</div> </div> <p>[PLC1] is to review memory use status of PLC address, [Internal] is to review memory use status of touch screen internal address.</p> <p>One touch screen can communicate with multiple PLC. In case of communicating with PLC 1unit, there is PLC1 only, communicating with PLC 2units, there are PLC1 , PLC2.</p>
Address	If select PLC address, select address boundary. Address boundary is different for each PLC.
Screen	<p>Can view address used in entire screen or address used in one screen.</p> <p>Select [all screens] for entire screen, select the screen to view one screen.</p>





(2) Memory use status displaying part

Address by word unit is enumerated in [Vertical] of address boundary, and '0bit to 15bit' are enumerated in [Horizontal]. Address used in project is displayed in round bead.

One bead means one bit address. So, address used by word is displayed with all beads ranging from 0bit to 15bit, address used by bit is displayed with one bead for one bit.

Address marking gets different for selected PLC and type of address. When address consists of [8bit] unit, number of width column is eight, In case of address of [32bit] unit, number of width column is 32.

Bead is specified by color and its property is displayed as following chart.

Shape	Class	Explanation
 (Green)	Read property	Green bead is displayed when address used in tag is used as read address. [Read address] is data for reading only to show in touch screen.
 (Blue)	Write property	Blue bead is displayed when address used in tag is used as write address. [Write address] is data for writing in controller after receiving data from touch screen.
 (Green/Blue)	Read/write property	Bead in half green and half blue is displayed when address used in tag is used for both read/write operation. [Read/write address] is the address to display data of controller in touch screen as well as writing data in controller receiving data from touch screen.
 (Red)	Repeat property	Red bead is displayed when the address is used in more than 2 tags.

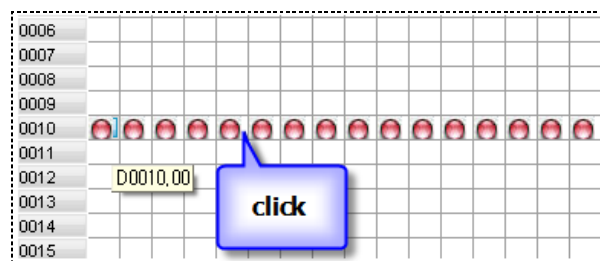


Note [Read/write] property of memory manager is the property about tag operation in touch screen. It has nothing to do with address property of actual PLC.

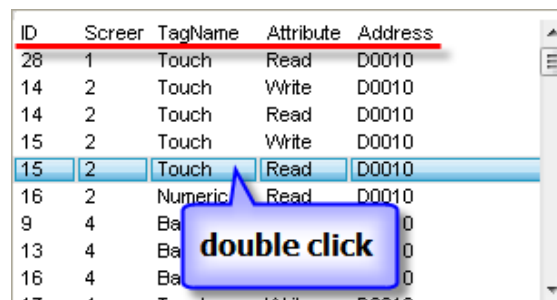
For example, [X] address of certain PLC is the read only bit address in PLC, but this address becomes [Read/write property] when it is used in [Number key display]. [Number key display] tag inputs data to PLC, displays input data in screen. So, set address is used for [Read/write property] because both input and display are done at a time.

(3) Display tag list

If clicks bead, the screen which used the address and the tag information gets displayed at lower part of memory manager. This function enables tags using the address to be found easily.



[Figure. Bead click of memory manager]



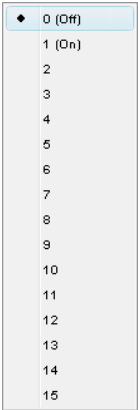
[Figure. Display tag list of memory manager]

If [Double-click] the list above, it selects the tag by moving to the position.

Tag information	Explanation
ID	ID of tag.
Screen	Screen number which tag registered.
Tag name	Name of tag.
Property	Property [Read address/write address] of address which tag used.
Address	Address which tag used.

6.9 Status number

[Status number] is the function which displays the shape of tag as operated in actual touch screen along data status of address set in tag.



[Figure. Status number]

In case of bit address, it displays tag along [ON/OFF] status.

[ON status] displays the shape of tag when tag data is [ON].

[OFF status] displays the shape of tag when tag data is [OFF].

In case of word address, it displays status of tag along [ON/OFF] status ranging from first 00bit to last 15bit.

Also, it reviews status of tag up to 16th along set sequence using [0~15] status in word lamp, N lamp and word message.

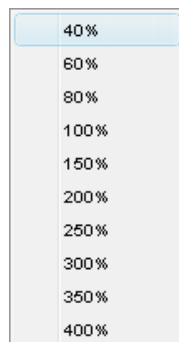
It can set status number in the same way as toolbar of below figure.



[Figure. Status number of toolbar]

6.10 Zoom in/Zoom out

Can review the edit screen of project by zoom in/zoom out.



[Figure. Enlarge/shrink in menu]

Can view it by shrinking 40%~80% and enlarging 150%~400%.




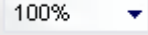
100% is the original size.

Enlarge/shrink is available with [Ctrl key] pressed with mouse wheel.

Also, enlarge/shrink can be set in toolbar.

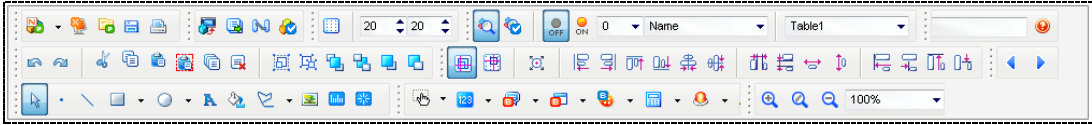


[Figure. Enlarge/shrink in toolbar]

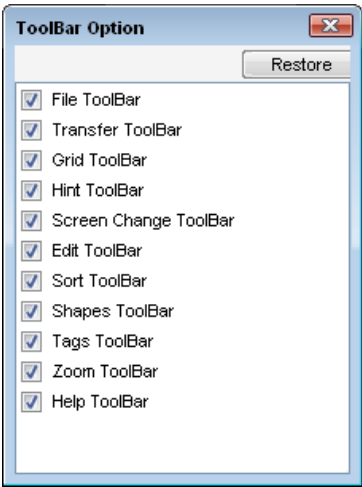
Toolbar picture	Function
	Starting from 100%, gets enlarged by [+20%].
	Starting from 100%, gets shrank by [-20%].
	Return to the original size, 100%.
	Can show how much % gets enlarged/shrank and can be set to the desire %.

6.11 Toolbar option

Toolbar option enables toolbar to be edited.
Frequently-used function can be used only out of 11 composed toolbar.



[Figure. Toolbar]



[Figure. Toolbar option]

Also, if press shortcut key (Ctrl + W), can hide or show toolbar totally.

6.12 Show Hint (Ctrl + H)

Hint is [Hint Option]. Hint Option is the explanation attached to the tag above.



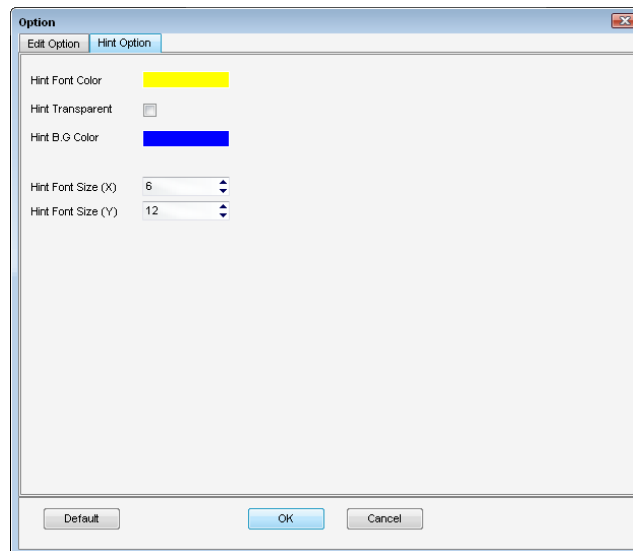
[Figure. Hint]

[Show Hint] menu can set if view Hint Option or not.
Once executed, hint gets displayed, executed once again, hint is not displayed.

6.13 Hint Setting (Shift + Ctrl + H)

Set [Character/background color/size] of hint.

It is the same as [Tool]–[Edit option]–[Hint Option].



[Figure. Hint Setting]

6.14 Previous screen (PageUp)

It moves from open base screen, window screen, subscreen and global screen to previous screen.

6.15 Next screen (PageDown)

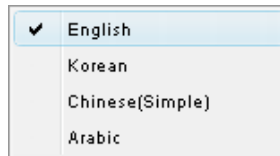
It moves from open base screen, window screen, subscreen and global screen to next screen.

6.16 Language

Select the language to show in XDesignerPlus program.

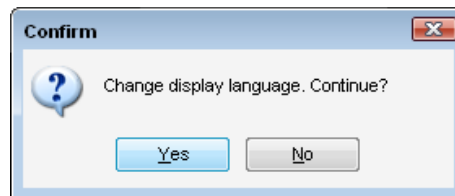
If installs and executes it first, it is displayed in English.

If wants to change it to Korean or Chinese, select [View]–[Language].



[Figure. Language]

If selects the language, shows confirmation message as following.



[Figure. Confirmation message about changing display language]

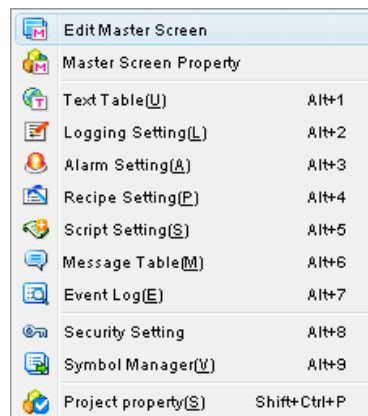
If selects [Yes] button, it gets changed to the set language.

CHAPTER 7 Project Menu

CHAPTER 7 – Project Menu

Explain [Project] menu.

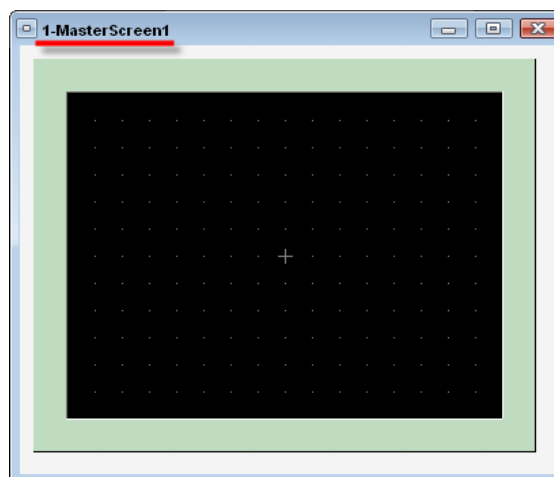
Project menu is the part to apply it to entire project.



[Figure. Project menu]

7.1 Edit Master Screen

Can open and show master screen, edit it.



[Figure. Master screen]

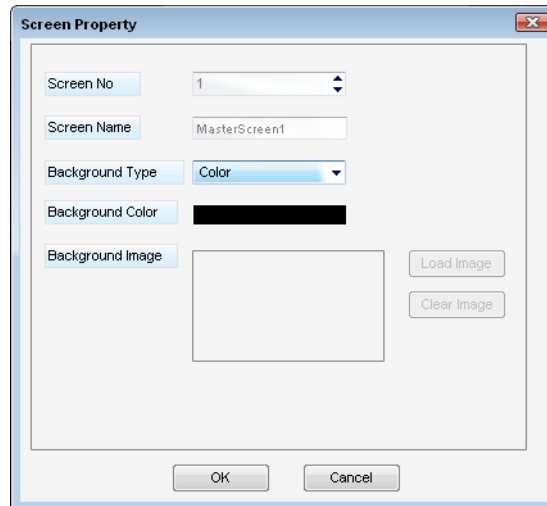
[Master screen] embodies figure/tag commonly used in base screen, is the global screen used and applied to each base screen.

(☞ Refer to [3.4.4] of [Chapter 3] regarding how to use master screen.)

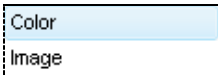
7.2 Master Screen Property

Can show the property of master screen.

Can change background of master screen in property screen.



[Figure. Screen property of master screen]

Property	Explanation
Screen No	Can show the number of master screen. Cannot change screen number because master screen is one.
Screen name	Can show name of master screen. Cannot change screen number because master screen is one.
Background type	Select background type of master screen.  Type of background is two kinds, [Color] and [Image].
Background color	Select color in case of selecting [Color] as [Background type].
Background image	In case of selecting [Image] as [Background type], import image (*.bmp, *.jpg, *.jpeg) to use as background by pressing [Import] button.

7.3 Text Table

Text Table is the same as multiple table as entire setting of [Project manager].

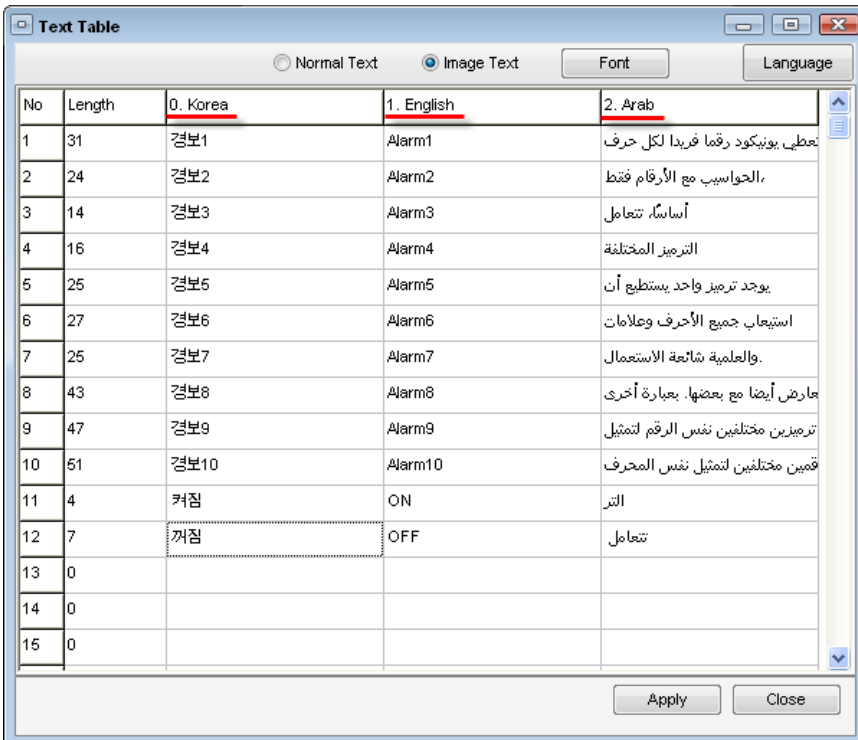
Multiple language function is used when displaying the design project of touch screen.

How to use multiple languages is as following.

1. Register all characters used in project along each language in [Text table].
2. Set input all parts in project as [Text table].
3. Can set data of [_MULTI_LANG] as special address along language to display.

7.3.1 Draw up Text Table

Draw up Text Table.



No	Length	0. Korea	1. English	2. Arab
1	31	경보1	Alarm1	يعطي يونيكود رقما فريدا لكل حرف
2	24	경보2	Alarm2	، الخوايب مع الأرقام فقط
3	14	경보3	Alarm3	أساسا، تتعامل
4	16	경보4	Alarm4	الترميز المختلفة
5	25	경보5	Alarm5	يوجد ترميز واحد يستطيع أن
6	27	경보6	Alarm6	استيعاب جميع الأحرف وعلامات
7	25	경보7	Alarm7	والعلمية شائعة الاستعمال
8	43	경보8	Alarm8	عارض أيضا مع بعضها. بعبارة أخرى
9	47	경보9	Alarm9	ترميزين مختلفين نفس الرقم لتمثيل
10	51	경보10	Alarm10	قامين مختلفين لتمثيل نفس المحرف
11	4	켜짐	ON	التر
12	7	꺼짐	OFF	تتعامل
13	0			
14	0			
15	0			


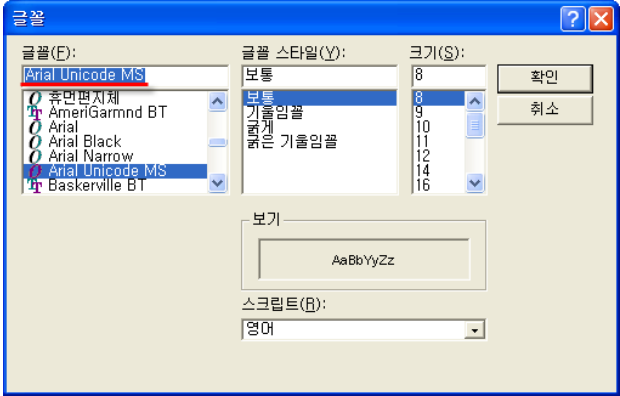
[Figure. Text Table]

(1) Select font to display


Set if displays multiple language as the character line in project or image character.

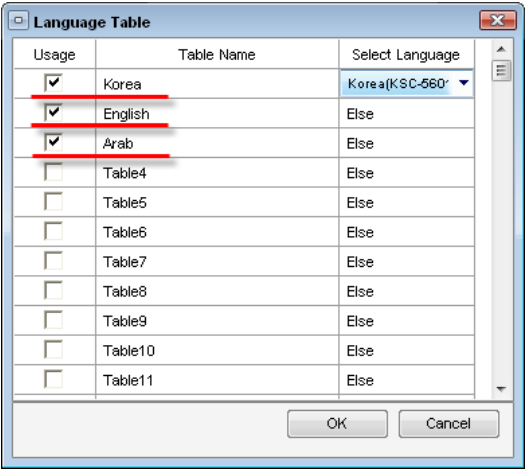


[Figure. Select font]

Font	Explanation
Normal Text	<p>User character line displays characters with fonts provided by internal touch screen.</p> <p>Font provided from internal touch screen is limited to [English, Korean, and Chinese]. So, needs to set it to image character with other languages except [English, Korean, and Chinese] in multiple language tables.</p> <p>Also, cannot use [English, Korean, Chinese] simultaneously, can use [Chinese and English] or [Korean and English].</p> <p>In case of using Chinese, have to download Chinese font in touch screen. Also, needs to register Chinese to first column in multiple language tables.</p>
Image Text	<p>Image character displays characters with font provided from PC.</p> <p>Set font to use as below figure by pressing  button,</p>  <p>Image characters can use various languages which is different from characters.</p> <p>But, given that specific font may not be displayed, can show any language safely if selects font which's name has the word [Unicode] in font name.</p>

(2) Setting Table

First, compose table by pressing  button at upper right.
In case of table setting, create the table as many language as number of language to use, designate names to each created table.



[Figure. Setting Table]

Language Table	Explanation
Usage	Check number of language to use. Register other language up to maximum 16.
Table Name	Table name is selected from [Select Language], or set input in manual.
Select Language	Select language to use out of Korean, Chinese, Japanese and other languages. Language selection is for setting table name. <div><div>Korea</div><div>China</div><div>Japan</div><div>Else</div></div>

After finishing setting, press [Confirm] button.

(3) Input character per language

Needs to register all character line used in project.

Input character line per language, or copy and paste it in excel file.

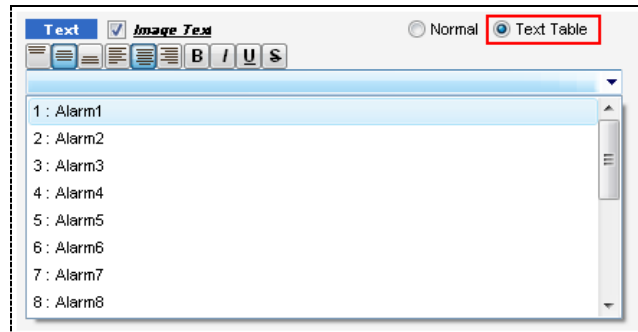
No	Length	0. Korea(KSC-5601)	1. English	2. Arab
1	31	경보1	Alarm1	تعطى يونيكود رقما فريدا لكل حرف
2	24	경보2	Alarm2	الحواسيب مع الأرقام فقط
3	14	경보3	Alarm3	أساساً، تتعامل
4	16	경보4	Alarm4	الترميز المختلفة
5	25	경보5	Alarm5	يوجد ترميز واحد يستطيع أن
6	27	경보6	Alarm6	استيعاب جميع الأحرف وعلامات
7	25	경보7	Alarm7	والعلمية شائعة الاستعمال
8	43	경보8	Alarm8	عارض أيضا مع بعضها، بعبارة أخرى
9	47	경보9	Alarm9	ترميزين مختلفين نفس الرقم لتمثيل
10	51	경보10	Alarm10	قامين مختلفين لتمثيل نفس المحرف
11	4	켜짐	ON	التر
12	7	꺼짐	OFF	تتعامل
13	0			
14	0			
15	0			

[Figure. Input character line per language]

Title	Explanation
No.	Sequential number to the registered character line. Can register character line up to maximum 10000.
Length	Longest character line out of character line per language. If press [Apply] button after input character line, next message appears and set it automatically. <div> </div> If press [Yes] button, the length of the longest character line is registered.
[Table number.Table name]	[Table number] is marked before [Table name] in [Table setting]. Table number becomes conditional data to select language.

7.3.2 Setting it to Text Table in project

Character line-input part enables character registered in multiple language tables to be selected by selecting all [Text table]. The list of multiple language tables consists of character line of the first table.



[Figure. Setting multiple language in project]

7.3.3 Select language to display

Can change language to display by changing data of special address [_MULTI_LANG] during operation.

No	Length	0. English	1. Korea(KSC-5601)	2. Arab
1	31	Alarm1	경보1	عطى يوتيكود رقما فريدا لكل حرف
2	24	Alarm2	경보2	الحواسيب مع الأرقام فقط

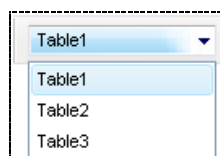
[Figure. Table number]

If [Table number] in column name of multiple language table is the same as data of special address [_MULTI_LANG], it displays the language of the column.

Taking the chart above as an example, if data of [_MULTI_LANG] is [0], it is displayed in English, [1] in Korean, [2] in Arabic.

7.3.4 Check by language in edit screen

Toolbar is used when needs to check the screen per language in edit screen.



[Figure. Table toolbar]

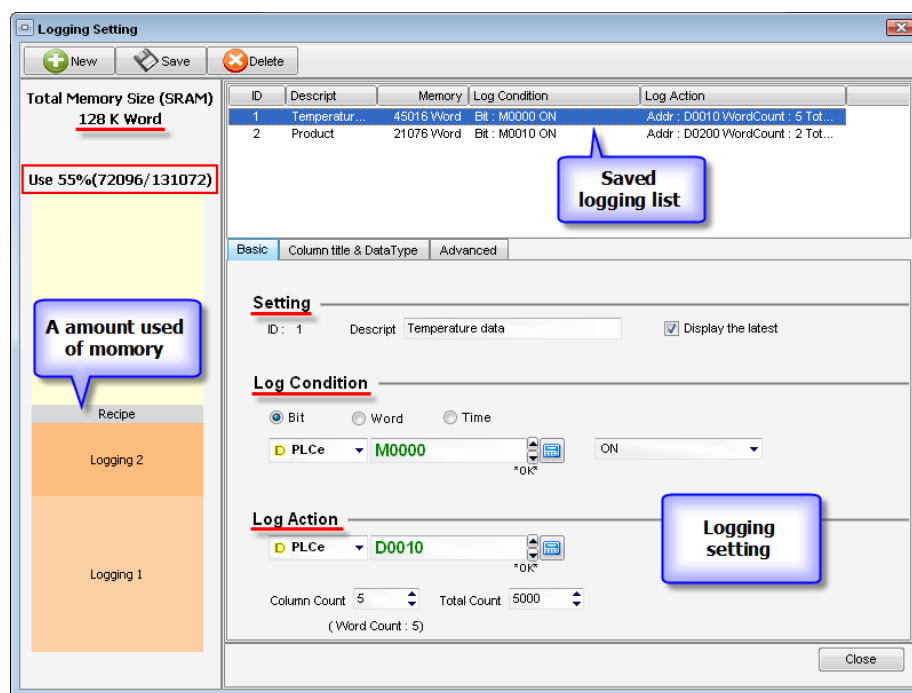
Language set in multiple language tables is displayed along selected table.

7.4 Logging setting

Logging is the function of recording data.


PLC or specific data of internal address is recorded along condition.

Save is executed in internal memory of touch screen, or can save it by installing CF memory card.




[Figure. Logging setting]

7.4.1 Basic item page

After setting basic item page composing of [Setting part], [Logging condition part] and [Logging operating part], press  button at upper part and save logging.

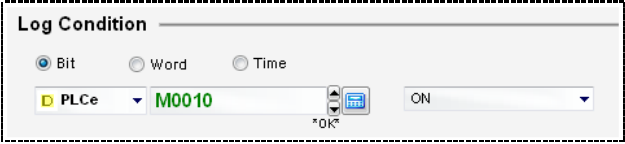
(1) Setting part

Setting	Explanation
ID	ID means logging number. ID is set in sequence automatically. Logging can be set up to eight. That is, ID can be set [1~8]. If needs to save logging ID [1], logging ID [2] newly, press  button at upper part.
Descript	Input explanation about each logging.
Display the latest	Normally first data out of logging data is saved at first line, recent logging is saved at next line. If checks [Save recent logging first], enables recent logging to be saved at most upper part by converting saving sequence of logging.

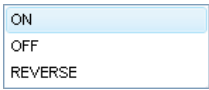
(2) Conditional logging part

Set condition of creating logging. That is, it sets recording condition of data.
Select one condition out of [Bit condition], [Word condition] and [Time condition].

- Bit condition



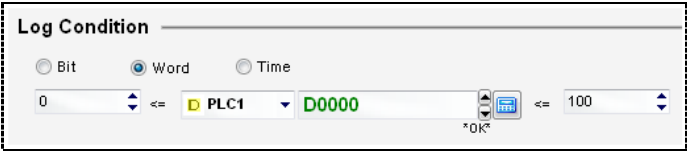
[Figure. Bit condition]



[Figure. Bit condition]

When bit condition is to input bit address, and data of the bit address meets set [ON/OFF/REVERSE] condition, logging data is saved.

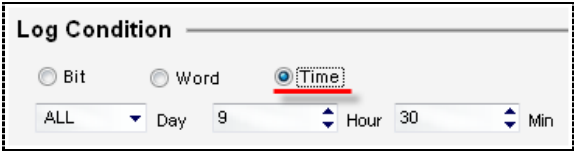
- Word condition



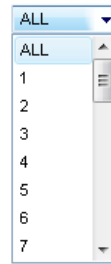
[Figure. Setting word condition of logging condition]

When Word Condition is to input word address, and data of the word address meets set range condition, logging data is saved.

- Time condition



[Figure. Time condition setting of logging condition]



[Figure. Date of time condition]

Time condition is that logging data is saved on the designated data and time.

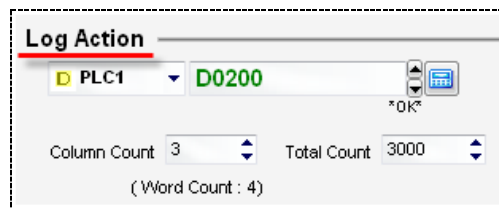
[Day] means date, can be set as first day~31st day.

[ALL] means every day. Input time in [Hour] and [Minute].

If time is set as figure above, logging data is save at [9:30 everyday].

(3) Logging operating part

Set boundary to record with logging data.



[Figure. Logging operation setting]

Setting	Explanation
Address	Set start address of PLC as logging data or start address of internal address. Given that logging is saved by word (16bit) basically, supposed to input word address.
Column Count	Number of logging data, Set how many columns to save by setting address as start address.
Word Count	Number of actually used word If displays how many word address is recorded with input address as start address.
Total Count	Total number of logging data. Whenever logging condition is met, logging data is saved up to maximum number. If new logging data occurs after maximum whole number, the oldest logging data gets deleted, new logging data is saved. But in case of saving in CF memory card, can save set capacity with nothing to do with total number.

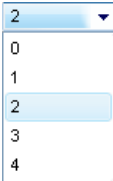

7.4.2 Name of column and page of data type

After setting in basic item page, set column name & data type page.

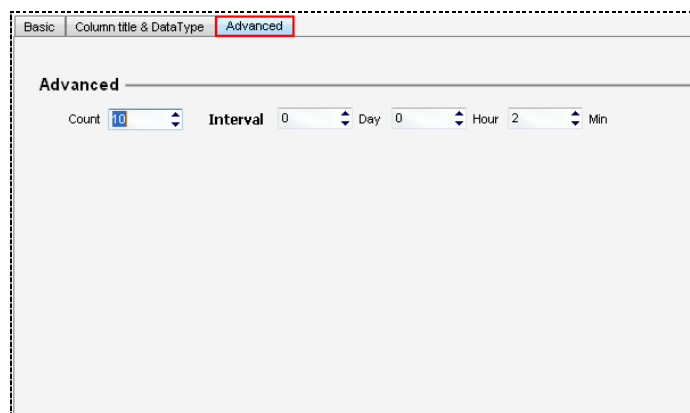
Logging data is recorded according to column property set in column name & data type page.

Date	Time	Temperature	W2	W2
2010-09-06	16:18:10	2	40731	85442

[Figure. Column title & Data Type setting]

Column property	Explanation
Column No	<p>Column number starts from [0]. Date starts from column [0], time starts from column [1] and data starts from column [2].</p> 
Title	<p>Input each column name.</p> <p>If input column name, changed column name is saved when actual logging data is saved.</p>
Data type	<p>Set data type of each column.</p> <p>Select one out of [DEC] and [UDEC]. [DEC(Signed Decimal)] is signal decimal, [UDEC(Unsigned Decimal)] is no signal decimal.</p> 
Data size	<p>Set data size of each column.</p> <p>Select one out of [16bit] and [32 bit].</p>
Data length	<p>Data length is [Total number of digits] of each logging data.</p> <p>When data size is selected by 16 bit, select 1~5 digits,</p> <p>When data size is selected by 32 bit, select 1~10 digits.</p>
Decimal Places	<p>Can designate and display a decimal point in each logging data.</p>
Logging title & Format preview	<p>If set column property as above, Can recognize the saved shape of actual logging data as set in preview.</p>

Extended page is the additional function of logging setting.



[Figure. Extended page]

(1) Logging number and gap

It is the function which gives time gap and records the logging data as many as the designated [Number] additionally from when set logging condition in base item is met

[Number] is the number of logging to be added additionally.

[Gap] designates if makes logging or not with how much of time gap. Minimum unit is 1 minute.

For example, when it is set as above figure, logging data gets saved one time at the timing of meeting logging condition, and record logging data nine times more in two minutes gap, then record total ten times. That is, whenever logging condition is met, ten times of logging data.

(2) Number of word as used as characters

Logging data is saved as decimal number basically. But if set [Number of word used as character], initial parts of address set in [Logging operation] of basic item is saved as ASCII.

For example, if [Logging operating address] is address D200, [Number of column] is 5 and [Number of word used as character] is 2, address of D200 and D201 are saved as Ascii and address [D202~D204] are saved as number.

If data value of address D200 is [0x4142], data value of address D201 is [0x4344], column of logging data 1 is recorded [ab] and column 2 is recorded as [cd].

Given that [Word number used as character] can be recorded as character from column starting parts, recording center of column as character is impossible.

7.4.4 New/save/delete button

It is the button upper part creating and deleting logging.



[Figure. New/save/delete button]

Button	Explanation
New	Register new logging setting in logging list.
Save	Save logging list in setting content of logging.
Delete	Delete selected logging setting in logging list.

7.4.5 Logging list

It is the set list of logging.

Given logging operates along registered content of logging list, save it in logging list by pressing



button definitely if set logging.

ID	Descript	Memory	Log Condition	Log Action
1	Temperatur...	45016 Word	Bit : M0000 ON	Addr : D0010 WordCount : 5 Tot...
2	Product	24084 Word	Word : 0 =< D0000 =< 100	Addr : D0200 WordCount : 2 Tot...

[Figure. Logging list]

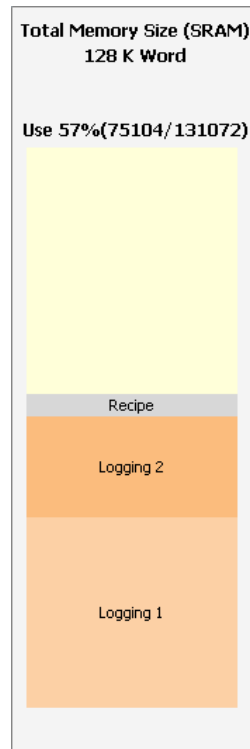
Menu	Explanation
ID	Logging number.
Descript	Logging script.
Memory	Memory use capacity of logging. Memory use capacity of logging is calculated by $[(\text{Word Count} + 4 \text{ word which is date and time data}) \times (\text{Total number} + \text{number of extended page})] + 4 \text{ Word}$. 4 words which are added at the end are the data touch screen uses internally.
Log Condition	Logging condition.
Log operation	Logging operation.

7.4.6 Display memory use capacity

Memory to use for saving data from touch screen or PLC is total 128K word(256KB[Byte]).

This memory is used for purpose of saving logging and recipe data.

Following figure displays current memory use capacity out of total memory.



[Figure. Memory use capacity]

7.4.7 View logging data

Logging data is saved in [*.CSV] file format.

This file can be open by Excel program or CF Viewer program in PC.

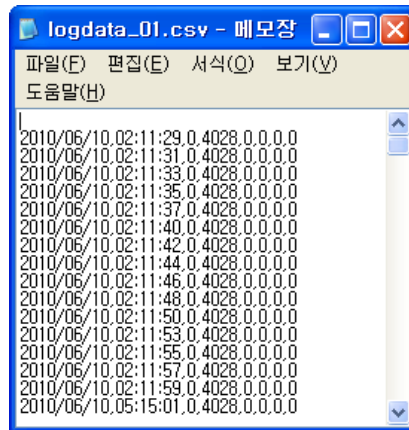
There are several ways regarding how to view logging data saved in touch screen memory.

1. Can view logging data after uploading in PC using Ethernet/USB/Serial cables.
2. Can view it by copying logging data to USB memory storage unit/CF memory card, mounting USB memory storage unit/CF memory card onto PC.
3. Can view it using number tag, logtable tag, extended graph tag, record tag in the screen of touch screen.

(1) Saved logging data type

Logging data is saved in [*.CSV] file format specified by [,] as below figure.

Logging data is saved in sequence of date, time and data.



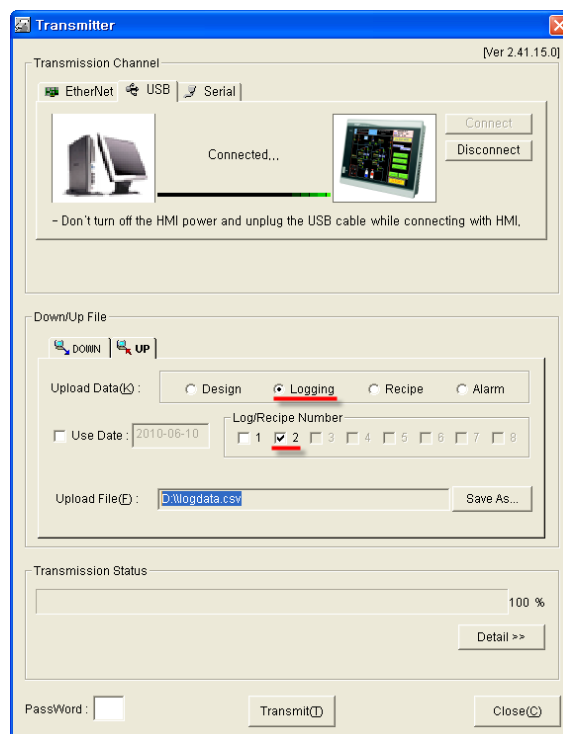
[Figure. Saved logging data]

(2) Upload logging data

Execute [Transmit]–[Execute transmitter] menu.

Select logging by designating upload(PC→XTOP) in transmitter.

Check logging number, designate saving route by pressing [Save as] button, upload is implemented if press [Transmit].



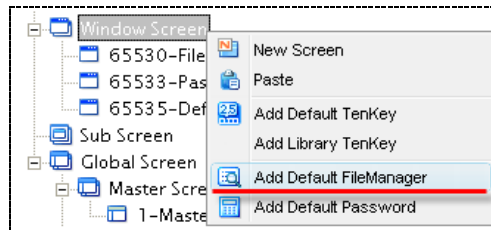
[Figure. Upload logging data]

(3) Copy logging data in USB/CF memory

Can view it by copying logging data in USB memory storage unit or CF memory card.

- Copy using file manager

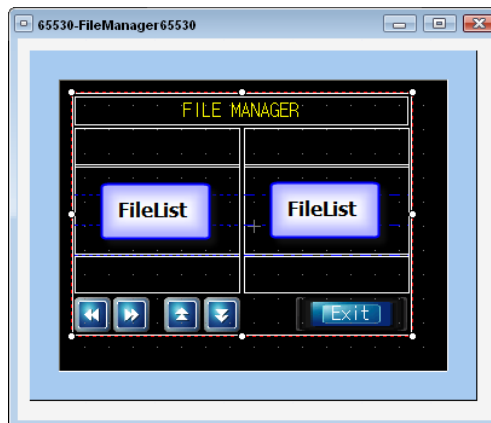
Can copy logging data in USB memory storage unit or CF memory card using file manager.



[Figure. Add file manager window]

After selecting window screen in [Project manager], if press right button of mouse, popup menu appears. Execute [File manager window] in this popup menu.

File manager window is as following.



[Figure. File manager window screen]

File manager window consists of 2 file list.

If select touch screen internal memory in left file list and USB memory storage unit or CF memory card in right file list, data in each memory is displayed in list below. Copy data to left using arrow button after selecting logging data of touch screen.

(Refer to [Chapter 40] regarding file list and file manager.)

- **Menu screen of touch screen**

Can copy logging data from menu screen of touch screen to USB memory storage unit.


After selecting [Logging] of [11. Save it to USB] in [Initial setting] of menu screen of touch screen, logging data is saved to USB memory storage unit if press [ENTER] button.

FAT16-formatted [USB memory storage unit] should be mounted in touch screen.

(4) Display logging data using tag

Can view logging data in real-time in touch screen using [number/logtable/extended graph/record].

Can view one logging data with [Number tag]. [Logtable tag] can view logging data in table format. [Extended graph tag] and [Record tag] can view changing trends of logging data in graph format.

( Refer to [Chapter 9~43] regarding how to use tag.)


7.4.8 Save logging data in CF memory card

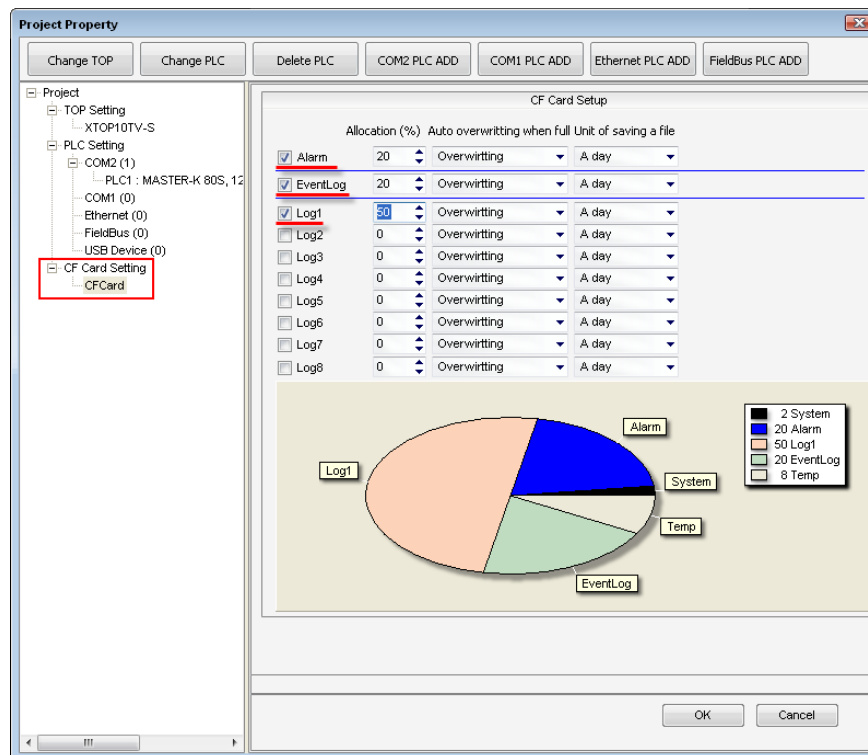
Logging data is saved in internal backup memory(256KB) of touch basically.

This memory keeps data as inactivated memory though power is cut.

But, given this memory capacity has limit, can save logging data in [CF memory card] in order to save more logging data.

How to use CF memory card is as following.

1. Execute format of CF memory card. It has to be formatted by FAT16 type to be recognized in touch screen. If not recognized, error message "CF Not FAT File Format" is displayed at upper part of touch screen.
2. Set CF memory card in [Project]–[Project setup].
( Refer to [7.12.5] of [Chapter 7] regarding how to set CF memory card.)



[Figure. Save setting of logging data in CF card]

7.5 Alarm setting

Set alarm list.

Alarm list is the list of several matters which happens in PLC.

If alarm is registered in alarm setting, it can be displayed in touch screen through alarm tag when outbreak of alarm.

Group	No	Address	Condition	Length	Contents
A	1		ON	0	

[Figure. Alarm setting]




7.5.1 Register alarm list

Input it to alarm list.

Group	No	Address	Condition	Length	Contents
A	1		ON	0	

[Figure. Register alarm list]

Input following data in each alarm list.

Property	Explanation
Group	<p>Group can be divided into total 26 groups ranging A~Z.</p>  <p>If press each [A~Z] buttons, registered alarm list is displayed.</p> <p>Can input alarm list to the group.</p>
No	<p>Number of alarm list marked in sequence.</p> <p>Alarm number is marked automatically without input.</p>
Address	<p>Monitoring address of alarm list. Address is bit address.</p>  <p>After double-clicking address input part, input monitoring address of each alarm list.</p>
Condition	<p>Condition of monitoring address.</p>  <p>After double-clicking condition input part, input ON/OFF condition.</p> <p>[ON] condition sounds alarm when data of monitoring address is ON.</p> <p>[OFF] condition sounds alarm when data of monitoring address is OFF.</p>
Length	<p>Length of alarm content.</p> <p>It is calculated and set as 1 character for English, 2 characters for Korean.</p>
Contents	<p>When sounding condition of alarm is met, it is character line to display.</p>

7.5.2 Select how to register alarm contents

Can select alarm content out of input in manual, character line table and image character.

☒ Direct Input

☐ Text Table

☐ Image Text

Font

Character	Explanation																																																												
Direct Input	Display alarm contents user directly input in alarm tag or extended alarm tag using font provided from inside of touch screen.																																																												
Text Table	<p>Use already-registered character line in multiple language tables as alarm contents.</p> <p>Select alarm contents in multiple language tables as following figure.</p> <table border="1"><thead><tr><th>Group</th><th>No</th><th>Address</th><th>Condition</th><th>Length</th><th>Contents</th></tr></thead><tbody><tr><td>A</td><td>1</td><td>(SYS)0000.00</td><td>ON</td><td>6</td><td>Alarm1</td></tr><tr><td>A</td><td>2</td><td>(SYS)0000.01</td><td>ON</td><td>6</td><td>2 : Alarm2</td></tr><tr><td>A</td><td>3</td><td>(SYS)0000.02</td><td>ON</td><td>6</td><td>2 : Alarm2</td></tr><tr><td>A</td><td>4</td><td>(SYS)0000.03</td><td>ON</td><td>6</td><td>3 : Alarm3</td></tr><tr><td>A</td><td>5</td><td>(SYS)0000.04</td><td>ON</td><td>6</td><td>4 : Alarm4</td></tr><tr><td>A</td><td>6</td><td>(SYS)0000.05</td><td>ON</td><td>6</td><td>5 : Alarm5</td></tr><tr><td>A</td><td>7</td><td>(SYS)0000.06</td><td>ON</td><td>6</td><td>6 : Alarm6</td></tr><tr><td>A</td><td>8</td><td>(SYS)0000.07</td><td>ON</td><td>6</td><td>7 : Alarm7</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>8 : Alarm8</td></tr></tbody></table> <p>Character line table cannot be used mixing with other character type.</p> <p>When alarm list input as already-direct input or image character is registered, existing alarm list gets deleted if changed to character line table. So, following message is displayed when change.</p> <div><div>Confirm</div><div><div></div><div>If Data is Not equal with sentence of TEXT-Table, it will be removed. Continue?</div></div><div><div>Yes</div><div>No</div></div></div>	Group	No	Address	Condition	Length	Contents	A	1	(SYS)0000.00	ON	6	Alarm1	A	2	(SYS)0000.01	ON	6	2 : Alarm2	A	3	(SYS)0000.02	ON	6	2 : Alarm2	A	4	(SYS)0000.03	ON	6	3 : Alarm3	A	5	(SYS)0000.04	ON	6	4 : Alarm4	A	6	(SYS)0000.05	ON	6	5 : Alarm5	A	7	(SYS)0000.06	ON	6	6 : Alarm6	A	8	(SYS)0000.07	ON	6	7 : Alarm7						8 : Alarm8
Group	No	Address	Condition	Length	Contents																																																								
A	1	(SYS)0000.00	ON	6	Alarm1																																																								
A	2	(SYS)0000.01	ON	6	2 : Alarm2																																																								
A	3	(SYS)0000.02	ON	6	2 : Alarm2																																																								
A	4	(SYS)0000.03	ON	6	3 : Alarm3																																																								
A	5	(SYS)0000.04	ON	6	4 : Alarm4																																																								
A	6	(SYS)0000.05	ON	6	5 : Alarm5																																																								
A	7	(SYS)0000.06	ON	6	6 : Alarm6																																																								
A	8	(SYS)0000.07	ON	6	7 : Alarm7																																																								
					8 : Alarm8																																																								
Image Text	Display alarm contents user directly input in alarm tag or extended alarm tag using various font of window.																																																												

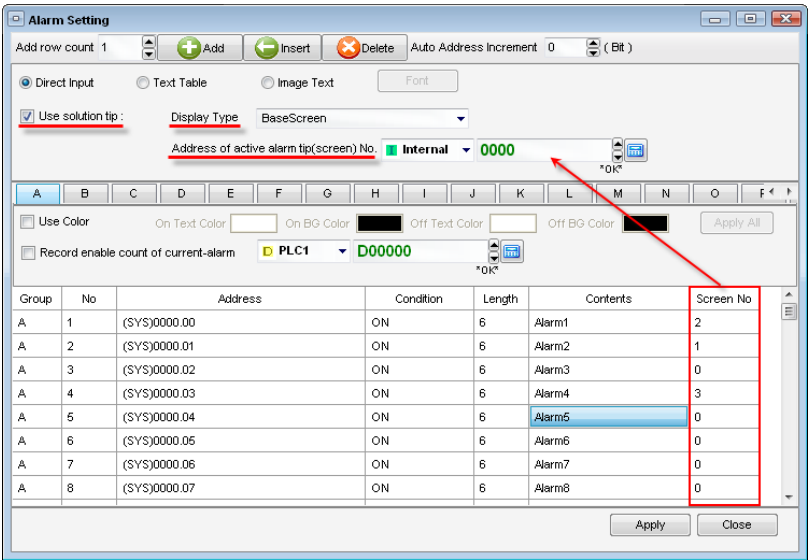
Contents of alarm can be input by multiple lines. If [ENTER] is pressed with [Ctrl] key press, can input the contents in next line.

7.5.3 Use Solution Tip

When alarm sounds, it enables to explain the [Solution Tip] against happened alarm, or moves it to screen which can take measures.

Function of [Solution Tip] is available in [Extended alarm] tag.
(☞ Refer to [Chapter 27~28] regarding how to use alarm and extended alarm tag.)

If checks [Use Solution Tip], [Screen No] is displayed in alarm list.



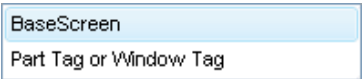
[Figure. Use Solution Tip]

Set function of [Use Solution Tip] as following

1. Select output type.
2. Designate address to save alarm measures screen number.
3. Register screen number per alarm list.

Can take measures along output type.

Display type is two kinds as following figure.



[Figure. Display type]

Display type	Explanation
Base screen	<p>Function which converts the screen to take measures against sounded alarm</p> <p>After selecting alarm to take measures out of sounded alarm out of extended alarm tag, it can be converted from [Screen No.] to set base screen number of the alarm if press [ENTER].</p>
Part tag or window tag	<p>Function which imports image, subscreen and window screen to take measures against sounded alarm.</p> <p>Set address same as [address of active alarm tip(screen) No.] by registering part tag or window tag in base screen.</p> <p>After selecting sounded alarm in extended alarm tag, set number is input to [address of active alarm tip(screen) No.] in [Screen No.] of the alarm if press [ENTER] of extended alarm tag. It enables this data to import image, subscreen and window screen in part tag or window tag.</p> <p>So, can import image or subscreen to take measure or window screen which has a button to take measures using part tag or window tag along each alarm.</p>

7.5.4 Record color information/number of alarm sound

(1) Applying color

Can register color in alarm list additionally.

Applying color is used when wants to apply different colors along each alarm.

If color is applied, color is displayed prior to color set in alarm or extended alarm tag when alarm is sounded.

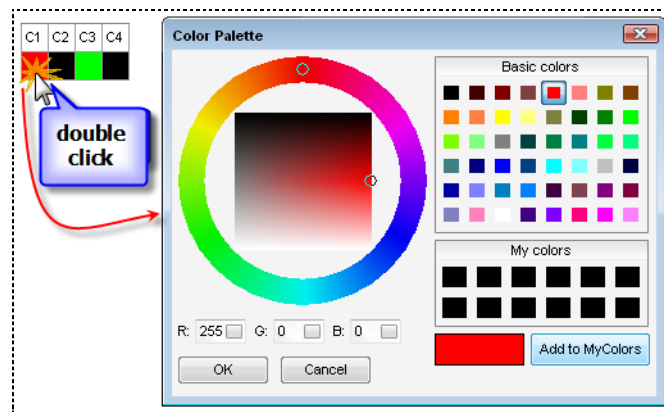
Group	No	Address	Condition	Length	Contents	Screen No	C1	C2	C3	C4
A	1	(SYS)0000.00	ON	6	Alarm1	2	Red	Black	Green	Black
A	2	(SYS)0000.01	ON	6	Alarm2	1	Yellow	Black	Green	Black

[Figure. Use color]

Color	Explanation
On Text Color (C1)	Font color of currently sounded alarm content.
On BG Color (C2)	Background color of currently sounded alarm content.
Off Text Color (C3)	Font color of currently released alarm content.
Off BG Color (C4)	Background color of currently released alarm content.
Apply All	Apply set color to the color of all alarm list.

If checks [Apply color], color information is added in each alarm list.

If wants to change color of color information, change the colors by double-clicking as below figure.



[Figure. Setting color]

(2) Record enable count of current-alarm



[Figure. Record enable count of current-alarm]

Record data of how many the sounded alarm cases there are into the designated address.

If display data of address [D0000] by registering number tag in touch screen, can display number of currently sounded alarm cases.

7.5.5 Edit alarm list

(1) Add/insert/delete

Add row count Auto Address Increment (Bit)

Add alarm	Explanation
Add row count <input type="text" value="1"/>	One alarm is recorded at first. Input number of added alarm as many registering number additionally. Can input maximum 1999 for each.
<input type="button" value="+ Add"/>	Register alarm as many added number of alarm.
<input type="button" value="← Insert"/>	Register alarm as many added number of alarm in middle of alarm list.
<input type="button" value="✕ Delete"/>	Delete alarm as occupied area in alarm list.
Auto address increment <input type="text" value="0"/> (Bit)	Register address with bit gap automatically.

(2) Copy/Paste

After selecting alarm list with dragging of mouse, can copy (Ctrl+C) and paste (Ctrl+V) to other group. Also, copied alarm list area can be pasted to Excel file or alarm list by copying the registered contents in Excel file and pasting them to alarm list.

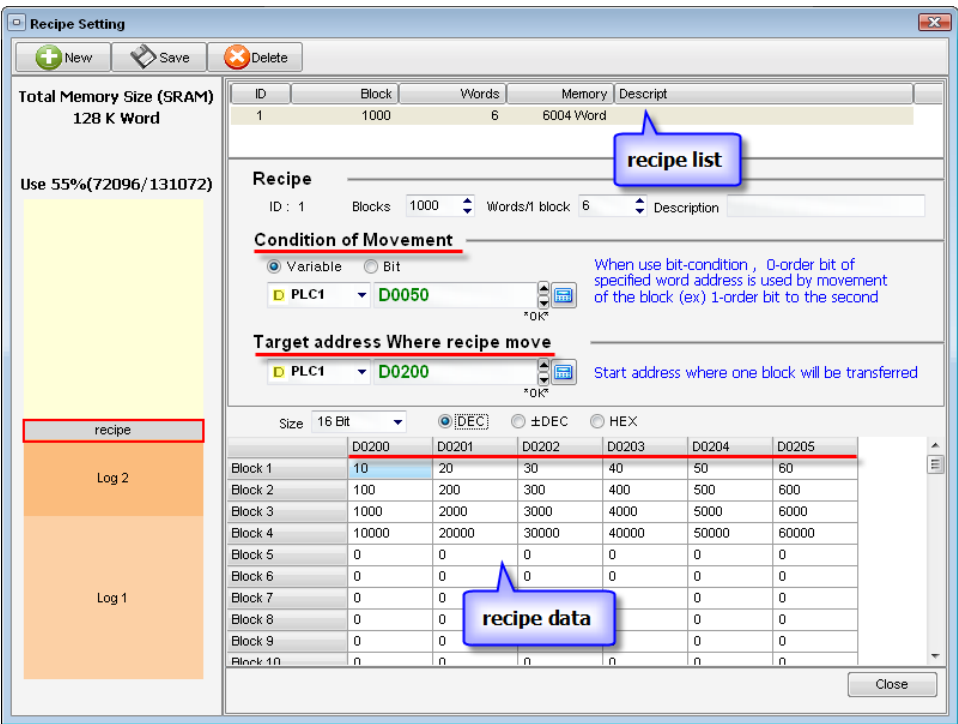
Group	No	Address	Condition	Length	Contents	Screen No
A	1	(PLC1)P0000	ON	8	P0 ERROR	2
A	2	(PLC1)P0001	ON	8	P1 ERROR	0
A	3	(PLC1)P0002	ON	8	P2 ERROR	0
A	4	(PLC1)P0003	ON	8	P3 ERROR	0
A	5	(PLC1)P0004	ON	8	P4 ERROR	0

[Figure. Selected alarm list boundary]

7.6 Recipe setting

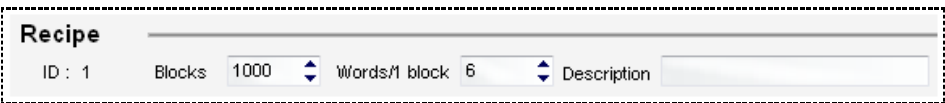
Recipe is function of moving parameter.

Recipe moving is the function to move data of recipe which meets the condition to set address boundary if set moving condition is accomplished saving recipe data required by PLC or touch screen into internal memory of touch screen or CF memory card.



[Figure. Recipe setting]

7.6.1 Set numbers of recipe block/word



[Figure. Setting number of blocks/words]

Eight logging can set from logging number 1~8, but one can be set when it comes to recipe. So, it is shown that recipe ID is none.

Recipe	Explanation
ID	Given one recipe can be set, it is none.
blocks	Total block number of recipe data Create block number as many as total number of block. If total number of block is 1000, block number is created ranging [1~1000].

Words/1 block	Number of word per 1 block.
Description	Explanation on recipe.

If input total number of blocks and number of word per block, [Memory use capacity] is displayed at left, and table of [Recipe data block] at low part is changed newly to match total number of blocks and number of word per block.

7.6.2 Condition of moving recipe

Condition of moving recipe is [Variable] condition and [Bit] condition.



[Figure. Condition of moving recipe]

(1) Variable condition

Variable condition is moved when set [Data of word address] and [Recipe block number] to move are the same. At the moment data of set word address is changed, recipe data which has the same block number with the data is moved.

Given that block number starts from one, recipe data does not move when variable conditioned data is [0] or exceeds block number.

Movement of variable condition is as following chart.

Address	Variable condition	Moving block
D0050	Data value = 1	Block 1
	Data value = 2	Block 2
	Data value = 3	Block 3

	Data value = 999	Block 999
	Data value = 1000	Block 1000

(2) Bit condition

As for bit condition, bit status of set [word address] becomes moving condition of recipe.

Bit address is required from bit 0(zero) to total number of blocks of set word address.

That is, given set word address consists of 16bit, the bit of next address to the word address is replaced if total number of blocks exceeds 16.

At the moment this status of bit address comes ON from OFF, recipe block is replaced.

Operation of bit condition is as following chart.

Address	Bit condition	Moving block
D0050	Bit "0" ON	Block 1
	1 st bit ON	Block 2
	2 nd bit ON	Block 3

	13 th bit ON	Block 14
	14 th bit ON	Block 15
	15 th bit ON	Block 16
D0051	Bit "0" ON	Block 17
	1 st bit ON	Block 18
	2 nd bit ON	Block 19

	13 th bit ON	Block 30
	14 th bit ON	Block 31
	15 th bit ON	Block 32

Caring point when uses bit condition is not to let data of the used bit address be ON at the same time.

Though it is ON simultaneously, movement of recipe is done once.

7.6.3 Target address during movement of recipe

When movement of recipe meets the condition, target address where data block moves to.



[Figure. Target address where recipe moves]

Set address is starting address, it becomes target address as number of word per block.
If sets address, word column of [Recipe data block] at below becomes target address.

7.6.4 Display memory use capacity

Memory use capacity displays memory which currently-set recipe out of touch screen backup memory
128K word uses with graph type.


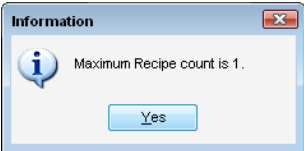

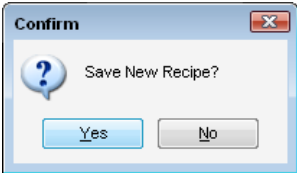
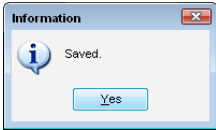

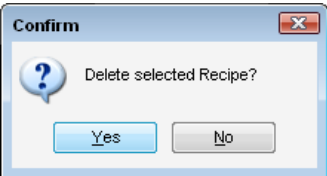
Recipe memory use capacity is [(Total number of blocks x number of word per block) + 4] word.
4 words to be added at the end are data which touch screen uses internally.



[Figure. Recipe memory use capacity]

7.6.5 New/save/delete buttons

Create, save and delete recipe setting.

Button	Explanation
	<p>Create recipe</p> <p>When recipe is already set, following message is displayed if press this button. One recipe only can be set.</p> 
	<p>Register recipe by saving set recipe.</p> <p>When saving it at first, following message is displayed.</p>  <p>If change setting of already-saved recipe, following message is displayed.</p> 
	<p>Delete set recipe.</p> 

7.6.6 Recipe data block

(1) Composition of recipe data block

If set recipe, [Recipe data block] is displayed along set contents.

Block number is displayed at left along [Total number of blocks]. One horizontal line means one block. Target address is displayed in each column along [Number of word per block] in sequence.

Size	16 Bit	<input checked="" type="radio"/> DEC	<input type="radio"/> ±DEC	<input type="radio"/> HEX		
	D0200	D0201	D0202	D0203	D0204	D0205
Block 1	10	20	30	40	50	60
Block 2	100	200	300	400	500	600
Block 3	1000	2000	3000	4000	5000	6000
Block 4	10000	20000	30000	40000	50000	60000
Block 5	0	0	0	0	0	0
Block 6	0	0	0	0	0	0
Block 7	0	0	0	0	0	0
Block 8	0	0	0	0	0	0
Block 9	0	0	0	0	0	0
Block 10	0	0	0	0	0	0

[Figure. Recipe data block]

First basic value of recipe block data is all set to [0].

This data can be input in recipe setting screen by use directly or in touch screen under operation. Also, given that it is compatible with Excel program, can copy and paste data of Excel program, or copy recipe data and paste it to Excel program.

(2) View per type of recipe data

Recipe data can be viewed variously along size and type.

Size 16 Bit ☒ DEC ☐ ±DEC ☐ HEX

[Figure. Size and type of recipe data]

Recipe	Explanation
Size	Select it out of 16bit or 32bit. <div><div>16 Bit</div><div>32 Bit</div></div>
DEC	Displays it in no-signal decimal.
±DEC	Displays it in signal decimal.
HEX	Displays in hexadecimal.

Recipe data is displayed along size and type as following.

It is set by different size and type using the same data.

Given that number of word per block, number of column is 6 when data size is 16bit, but when data size is 32bit, number of column is 3.

① In case of [Size: 16bit, type: DEC]

	Size 16 Bit	<input checked="" type="radio"/> DEC	<input type="radio"/> ±DEC	<input type="radio"/> HEX		
	D0200	D0201	D0202	D0203	D0204	D0205
Block 1	10	20	30	40	50	60
Block 2	100	200	300	400	500	600
Block 3	1000	2000	3000	4000	5000	6000
Block 4	10000	20000	30000	40000	50000	60000
Block 5	0	0	0	0	0	0
Block 6	0	0	0	0	0	0
Block 7	0	0	0	0	0	0
Block 8	0	0	0	0	0	0
Block 9	0	0	0	0	0	0
Block 10	0	0	0	0	0	0

[Figure. In case of (16bit/DEC)]

② In case of [Size: 16bit, type: ±DEC]

	Size 16 Bit	<input type="radio"/> DEC	<input checked="" type="radio"/> ±DEC	<input type="radio"/> HEX		
	D0200	D0201	D0202	D0203	D0204	D0205
Block 1	10	20	30	40	50	60
Block 2	100	200	300	400	500	600
Block 3	1000	2000	3000	4000	5000	6000
Block 4	10000	20000	30000	-25536	-15536	-5536
Block 5	0	0	0	0	0	0
Block 6	0	0	0	0	0	0
Block 7	0	0	0	0	0	0
Block 8	0	0	0	0	0	0
Block 9	0	0	0	0	0	0
Block 10	0	0	0	0	0	0

[Figure. In case of (16bit/±DEC)]

③ In case of [Size: 16bit, type: HEX]

	Size 16 Bit	<input type="radio"/> DEC	<input type="radio"/> ±DEC	<input checked="" type="radio"/> HEX		
	D0200	D0201	D0202	D0203	D0204	D0205
Block 1	A	14	1E	28	32	3C
Block 2	64	C8	12C	190	1F4	258
Block 3	3E8	7D0	BB8	FA0	1388	1770
Block 4	2710	4E20	7530	9C40	C350	EA60
Block 5	0	0	0	0	0	0
Block 6	0	0	0	0	0	0
Block 7	0	0	0	0	0	0
Block 8	0	0	0	0	0	0
Block 9	0	0	0	0	0	0
Block 10	0	0	0	0	0	0

[Figure. In case of (16bit/HEX)]

- ④ In case of [Size: 32bit, type: DEC]

Size	32 Bit	<input checked="" type="radio"/> DEC	<input type="radio"/> ±DEC	<input type="radio"/> HEX
	D0200	D0202	D0204	
Block 1	1310730	2621470	3932210	
Block 2	13107300	26214700	39322100	
Block 3	131073000	262147000	393221000	
Block 4	1310730000	2621470000	3932210000	
Block 5	0	0	0	
Block 6	0	0	0	
Block 7	0	0	0	
Block 8	0	0	0	
Block 9	0	0	0	
Block 10	0	0	0	

[Figure. In case of (32비트/DEC)]

- ⑤ In case of [Size: 32bit, type: ±DEC]

Size	32 Bit	<input type="radio"/> DEC	<input checked="" type="radio"/> ±DEC	<input type="radio"/> HEX
	D0200	D0202	D0204	
Block 1	1310730	2621470	3932210	
Block 2	13107300	26214700	39322100	
Block 3	131073000	262147000	393221000	
Block 4	1310730000	-1673497296	-362757296	
Block 5	0	0	0	
Block 6	0	0	0	
Block 7	0	0	0	
Block 8	0	0	0	
Block 9	0	0	0	
Block 10	0	0	0	

[Figure. In case of (32비트/±DEC)]

- ⑥ In case of [Size: 32bit, type: HEX]

Size	32 Bit	<input type="radio"/> DEC	<input type="radio"/> ±DEC	<input checked="" type="radio"/> HEX
	D0200	D0202	D0204	
Block 1	14000A	28001E	3C0032	
Block 2	C80064	190012C	25801F4	
Block 3	7D003E8	FA00BB8	17701388	
Block 4	4E202710	9C407530	EA60C350	
Block 5	0	0	0	
Block 6	0	0	0	
Block 7	0	0	0	
Block 8	0	0	0	
Block 9	0	0	0	
Block 10	0	0	0	

[Figure. In case of (32bit/HEX)]

7.6.7 Call/save recipe data under operation

(1) Call recipe data under operation

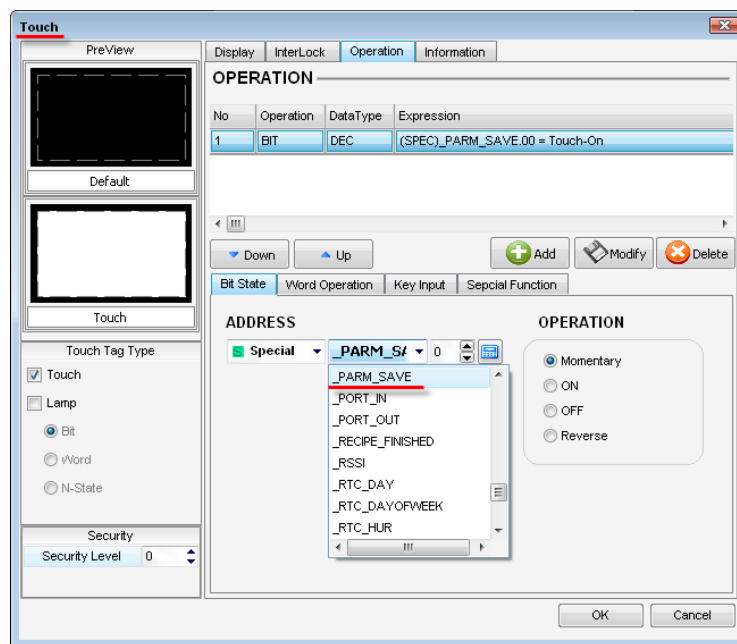
Recipe data block is moved to target address when recipe moving condition is met.
So, if wants to import saved recipe data block, execute recipe moving condition only.

(2) Save recipe data under operation

Recipe data block can be input in recipe setting screen, but can change or save recipe data under operation.

If [_PARM_SAVE] out of special buffer address becomes 1, save data placed in current target address into recipe data block.

Saving block number is saved in the same block number as data of variable address when [Recipe moving condition] is variable and in block number corresponding bit address with OK status when [Recipe moving condition] is [Bit].



[Figure. Recipe data saving special buffer]

7.6.8 Save recipe data in CF memory card

Recipe data is saved in backup memory of touch screen basically, CF memory card can be used. If wants to save recipe data using CF memory card, save set recipe in CF memory card using [CF-Recipe creator].

Set recipe using CF-Recipe creator] is saved in [*.CSV] file format.

F-Recipe creator is executed in [Tool]- [CF-Recipe creator] menu.

(Refer to [44.4] of [Chapter 44] regarding recipe setting using CF-Recipe creator.)

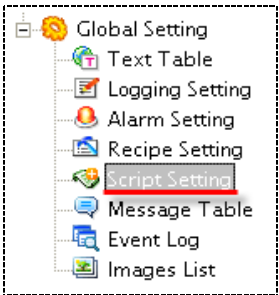
7.7 Script setting

Script is not to register tag in screen, but makes touch screen operate by composing calculation program.

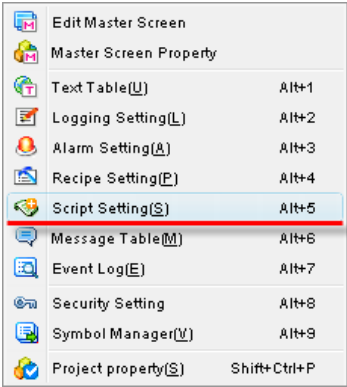
7.7.1 Global script and local script

There are two scripts, one is [Global script] which is applied to entire project and [Local script] which is applied to each screen only. Global script executes [Entire setting]–[Script] of [Project manager] or [Script setting] of [Project].

Global script is executed whenever the condition is met.



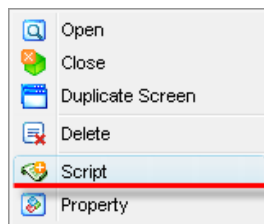
[Figure. Global script in project manager]



[Figure. Global script in project menu]

Local script is set in base screen and window screen, is executed in popup menu which appears if press right button of mouse after selecting screen to set script in [Project manager].

Local script is executed when the screen is under operation.

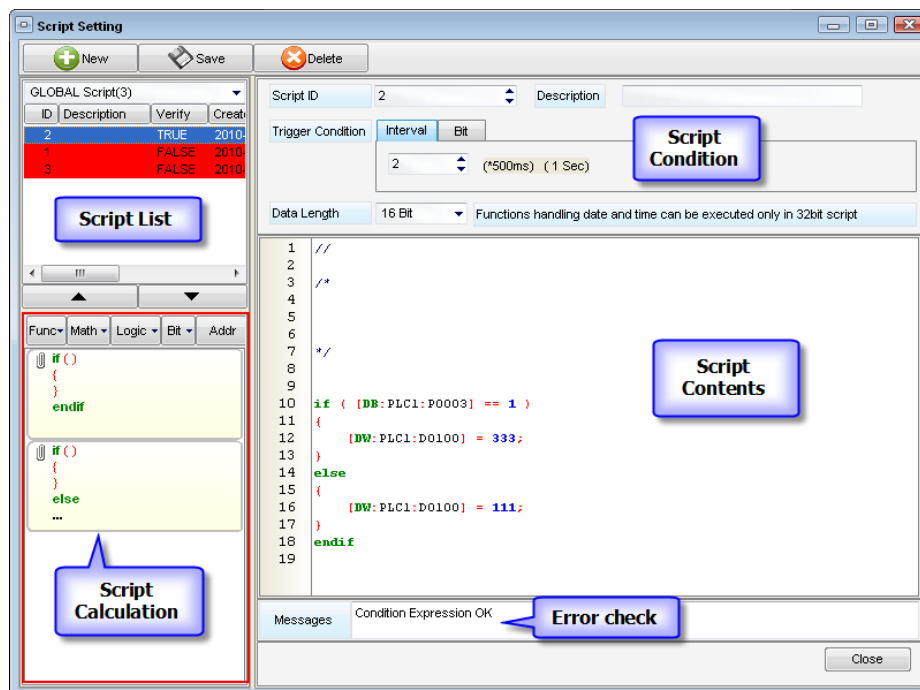


[Figure. Local script of base screen and window screen]

How to set global script and local script is the same.

7.7.2 Screen composition of script setting

Script setting screen is as following.

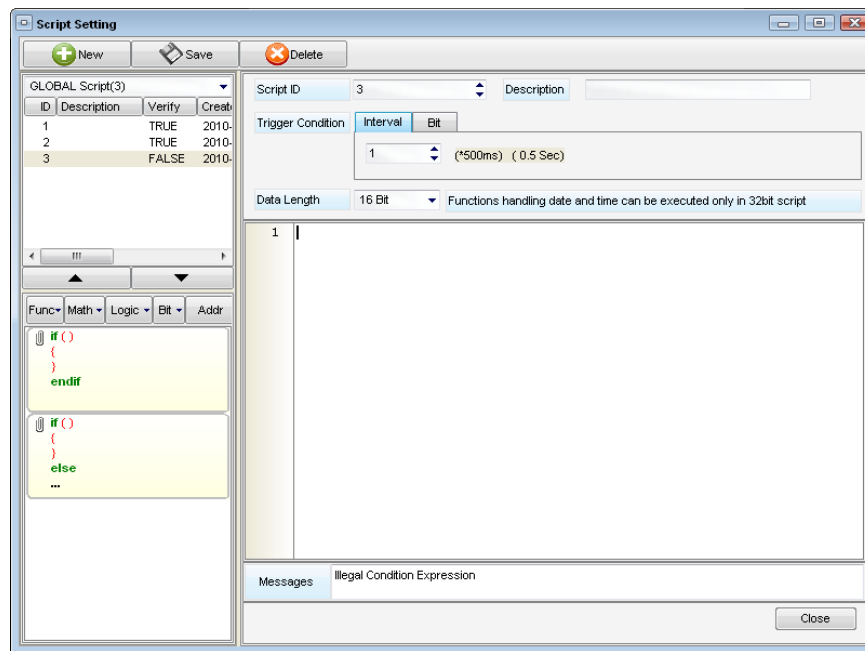


[Figure. Script setting]

(1) New button

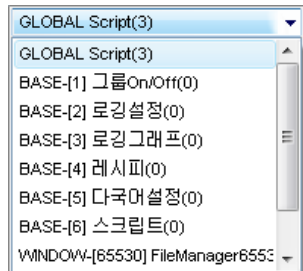
Create script providing new script ID.

If press new script, new script is added in script list, [Script condition] part is composed of basic value and [Script content] input part is opened.



[Figure. New script]

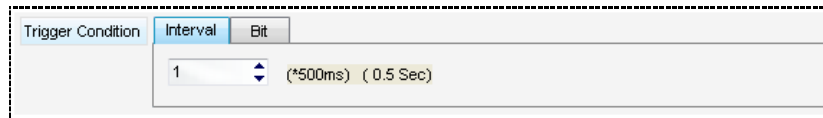
(2) Explanation on script setting screen composition

Script	Explanation
Save button	Save set script creating condition and its contents.
Delete button	Delete currently selected script.
Script ID	Script number marked in sequence.
Description	Explanation on the script.
Trigger condition	Condition script is executed. When the condition is met, execute contents of script.
Data Length	Select one out of 16bit or 32bit. If select 32bit, address calculation of script contents is executed by 32bit unit.
Script content	Emmain body contents of calculation to execute along script type.
Message	If script content is drawn up, check if script type is matched. If it is normal, displays [Condition Expression OK], if error happens, [Illegal Condition Expression] is displayed.
Select global scrip/ Local script	Can select global script and local script. 
Script list	List of set script.
Script calculation	Provided calculation part to draw up script contents.

7.7.3 Script creating condition

There are [Interval] condition and [Bit] condition to execute script.

(1) Interval condition

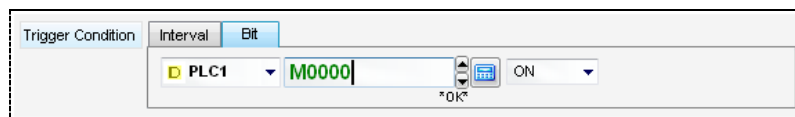


[Figure. Interval condition]

Interval condition executes script on regular time.

Time gap is input by 500ms(0.5 sec) unit.

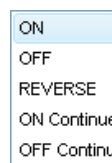
(2) Bit condition



[Figure. Bit condition]

Bit condition executes script along bit status of set address.

Bit status is selected out of 5 items [ON, OFF, REVERSE, ON Continue, OFF Continue].

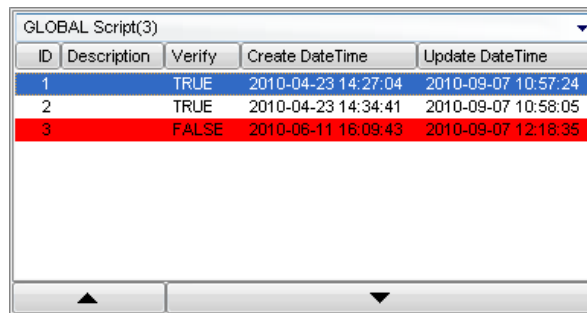


[Figure. Bit status setting]

Bit status	Explanation
ON	At the moment data of bit address is ON, script is executed.
OFF	At the moment data of bit address is OFF, script is executed.
REVERSE	At the moment data of bit address gets reversed, script is executed.
ON Continue	While bit address is ON, script is kept executing.
OFF Continue	While bit address is OFF, script is kept executing.

7.7.4 Script List



If save or store script, it is registered in script list.



ID	Description	Verify	Create DateTime	Update DateTime
1		TRUE	2010-04-23 14:27:04	2010-09-07 10:57:24
2		TRUE	2010-04-23 14:34:41	2010-09-07 10:58:05
3		FALSE	2010-06-11 16:09:43	2010-09-07 12:18:35

[Figure. Script list]

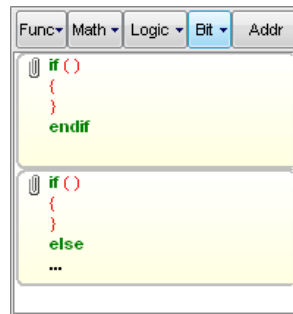
Combo box at top area consists of global script and script list of each screen. If select global script or local script of each screen, the script list is viewed.

Script list	Explanation
ID	Script number as scrip ID.
Description.	Script explanation.
Verify.	Script content matches the type without error, it is [TRUE], if there is error, it displays [FALSE]. Script which is [FALSE] is not transmitted to touch screen.
Create Date Time.	Script creating time. Created time by [New script] button.
Update Date Time.	Script updating time. Updated time by [Save] button.
	If script is the same condition, it is executed by sequence of script list. So, can change the sequence of scrip registered in the list to prior position with this button.
	If script is the same condition, it is executed by sequence of script list. So, can change the sequence of scrip registered in the list to less prior position with this button.

7.7.5 Script calculation


Contents of script is drawn up using script calculation part.

Script calculation consists of function calculation, arithmetic operation, logic operation, bit operation, address input part, [if] and [if~else] phrase and clipboard part.



[Figure. Calculating part of script]

(1) Function calculation

If press  button, provided list of function appears.



[Figure. Operation calculation]

Screen conversion and memory related function are as following.

No.	Function	Class	Explanation
1	ChgScreen	Type	ScreenNum(ScreenNum);
		Explanation	It converts screen. ScreenNum is the base screen number to convert.
		example	ChgScreen(2); Convert it to base screen No. 2. ChgScreen(2);

2	CopyMem	Type	CopyMem(SrcAddress, DesAddress, Count);
		Explanation	Copy data of PLC or internal data. SrcAddress is starting address to copy. DesAddress is starting address to be copied. Count is number of address to copy.
		example	CopyMem([DW:PLC1:D0000], [SW:0200], 20); Copy address data of [D0~D19] of PLC1 to internal address of touch screen [200~219].
3	InitMem	Type	InitMem(SrcData, DesAddress, Count);
		Explanation	Initialize data of PLC or internal address. SrcAddress is starting address to copy. DesAddress is starting address to be copied. Count is number of address to copy.
		example	CopyMem(3, [DW:PLC1:D0000], 10); Initialize 10 address data of [D0~D9] of PLC1 to [3].

Function related with date and time is as following.

Time calculation function uses the type of [UNIX TIMESTAMP].

[UNIX TIMESTAMP] is the function which converts the date to second unit based on [January 1st 1970, 0 hour 0 minute 0 second].

For example, If converts [2010 January 1st, 0 hour 0 minute 0 second], [UNIX TIMESTAMP] value of 1264032000. It means it has passed 1264032000 seconds from [January 1st 1970, 0 hour 0 minute 0 second].


Caring point is that calculation has to be done by 32bit because maximized value of 16bit exceeds. Also, it is possible to use up to [January 19th, 2038] because data capacity limit of converted values. Since then, calculation value becomes negative values.

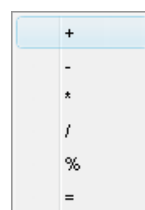
No.	Function	Class	Explanation
1	FNowDate	Type	FNowDate();
		Explanation	Calculate current time with [UNIX TIMESTAMP] That is, it converts current time by second unit.
		example	[SW:0100] = FNowDate(); It substitutes it to internal address No. 100 which is set as 32bit.
2	FDate	Type	FDate(year, month, day, hour, minute, second);
		Explanation	Calculate the designated time with [UNIX TIMESTAMP] That is, it converts current time by second unit.

			[Year, month, day, hour, minute, second] can be input as address number.
		example	[SW:0100] = FDate(2010, 1, 21, 18, 20, 50); Substitute the internal address 100 set by 32bit converting 50" 18:20, Jan. 21 st , 2010 to second unit.
3	FDay	Type	FDay(day);
		Explanation	Calculate set date to second.
		example	[SW:0100] = FDay(100); After converting 100days to second, substitute it to the internal address 100.
4	FHour	Type	FHour(hour);
		Explanation	Calculate set time to second.
		example	[SW:0100] = FHour(100); After converting 100hours to second, substitute it to the internal address 100.
5	FMin	Type	FMin(minute);
		Explanation	Calculate set minute to second.
		example	[SW:0100] = FMin(100); After converting 100minutes to second, substitute it to the internal address 100.
6	FSec	Type	FSec(second);
		Explanation	Calculate set second to second (Set value is the same as calculated value.)
		example	[SW:0100] = FSec(100); After converting 100seconds to second, substitute it to the internal address 100.
7	FGetYear	Type	FGetYear(TIMESTAMP value);
		Explanation	Calculate TIMESTAMP value to [Year].
		example	[SW:0100] = FGetYear([SW:0102]); Or [SW:0100] = FGetYear(1264032000); After converting value 1264032000 to [Year], substitute it to the internal address 100.
8	FGetMonth	Type	FGetMonth(TIMESTAMP value);
		Explanation	Calculate TIMESTAMP value to [Month].
		example	[SW:0100] = FGetMonth([SW:0102]); Or [SW:0100] = FGetMonth(1264032000); After converting value 1264032000 to [Month], substitute it to the internal address 100.
9	FGetDay	Type	FGetDay(TIMESTAMP value);
		Explanation	Calculate TIMESTAMP value to [Day].
		example	[SW:0100] = FGetDay([SW:0102]); Or [SW:0100] = FGetDay(1264032000); After converting value 1264032000 to [Day], substitute it to the internal address

			100.
10	FGetHour	Type	FGetHour(TIMESTAMP value);
		Explanation	Calculate TIMESTAMP value to [Hour].
		example	[SW:0100] = FGetHour([SW:0102]); Or [SW:0100] = FGetHour(1264032000); After converting value 1264032000 to [Hour], substitute it to the internal address 100.
11	FGetMin	Type	FGetMin(TIMESTAMP value);
		Explanation	Calculate TIMESTAMP value to [Minute].
		example	[SW:0100] = FGetMin([SW:0102]); Or [SW:0100] = FGetMin(1264032000); After converting value 1264032000 to [Minute], substitute it to the internal address 100.
12	FGetSec	Type	FGetSec(TIMESTAMP value);
		Explanation	Calculate TIMESTAMP value to [Second].
		example	[SW:0100] = FGetSec([SW:0102]); Or [SW:0100] = FGetSec(1264032000); After converting value 1264032000 to [Second], substitute it to the internal address 100.
13	FGetWeek	Type	FGetWeek(TIMESTAMP value);
		Explanation	Calculate TIMESTAMP value to [Day of a week]. (1:Sun, 2:Mon, 3:Tue 4:Wed, 5:Thu, 6:Fri, 7:Sat)
		example	[SW:0100] = FGetWeek([SW:0102]); Or [SW:0100] = FGetWeek(1264032000); After converting value 1264032000 to [Day of a week], substitute it to the internal address 100.

(2) Mathematics Operator


If press  button, provided the list of mathematics operator appears.



[Figure. mathematics operator]

Operator	Explanation
+	Calculation which calculated the sum of two operand.
-	Calculation which calculated the subtraction of two operand.
*	Calculation which calculated the multiplication of two operand.
/	Calculation which calculated the division of two operand.
%	Calculation which calculated the balance after dividing the operand.
=	Calculation which substitutes the value of operand.

(3) Logic operator


If press  button, provided the list of logic operator appears.



[Figure. Logic operator]

Operator	Explanation
And	It is used between two propositions, if both propositions are True, operation becomes True.
or	It is used between two propositions, if one of propositions is True, operation becomes True.
not	It is used before one proposition, if it is true, operation becomes False.
<	It is used for size comparison between two propositions when right composition is bigger.
<=	It is used for size comparison between two propositions when right composition is bigger or the same as left one.
<>	It is used when two values of operations are not the same.
>	It is used for size comparison between two propositions when left composition is bigger or the same as right one.
>=	It is used for size comparison between two propositions when left composition is bigger or the same as right one.
==	It is used when two values of operations are the same.

(4) Bit operator


If press  button, provided the list of bit operator appears.



[Figure. Bit operator]

Operator	Explanation
<<	Operation which implements bit shift the value of binary number of left operand to right as much value of right operand.
>>	Operation which implements bit shift the value of binary number of right operand to right as much value of left operand.
&	Operation which calculates the value of binary number by bit AND operation.
	Operation which calculates the value of binary number by bit OR operation.
^	Operation which calculates the value of binary number by bit XOR operation.
~	It is used before one operand and calculates the value of binary number of operand by bit NOT operation..

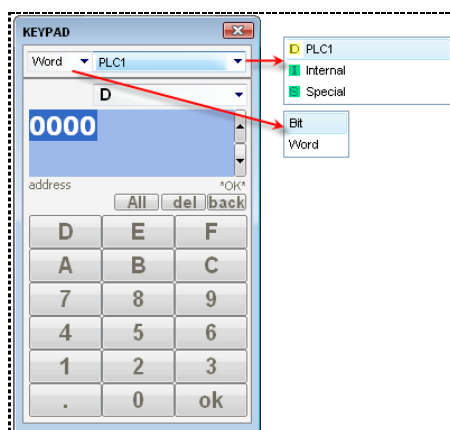
(5) Address input part

Can register the address to script contents using [Input unit] which appears if press  button.

Input it after selecting bit address or word address.

Bit address is one to use as bit function and word address is another to use as word function.

[PLC1] means address of controller, [Internal] means internal address of touch screen and [Special] means special address of touch screen.



[Figure. Input address]

How to input address is as following.

Address	Bit/word	Type
PLC (Device)	Bit	[DB:PLC1:PLC bit address] DB stands for Device Bit, and has to specify which PLC is correct because PLC1 can be connected with multiple PLC. PLC address is input by bit address and recognizer+address. Ex) [DB:PLC1:M0000]
	Word	[DW:PLC1:PLC word address] DW stands for Device Word, and has to specify which PLC is correct because PLC1 can be connected with multiple PLC. PLC address is input by bit address and recognizer+address. Ex) [DW:PLC1:D0000]
Internal (System Buffer)	Bit	[SB:Internal address, bit] SB stands for System buffer Bit. Internal address does not recognize, and has to specify which number of bit to use when it is used with bit (16bit) unit. Ex) [SB:0000,00]
	Word	[SW:Internal address] SW stands for System buffer Word. Internal address does not recognize, may input number of address because it is input by word (16bit) unit. Ex) [SW:0000]
Special	Bit	[SB:Special address. Bit] SB stands for Special address Bit. Specify which number of address to use when it is used with bit because special address is input by word (16bit) unit. Ex) [SB:_1OFF.00]
	Word	[SW:Special address, bit] SW stands for Special address Word. May input special address because special address is input by word (16bit) unit. Ex) [SW:_1OFF]

(6) Phrase (if and if~else phrases)

There are [if~endif] phrase and [if~else~endif] phrase regarding provided phrases.

```
1 if ([SB:0000.00] == 1)
2 {
3   [SW:0000] = 100;
4 }
5 endif
6
7 if ([SB:1000.00] == 1)
8 {
9   [SW:1000] = 1000;
10 } else {
11   [SW:2000] = 2000;
12 }
13 endif
14
```

[Figure. If phrase]

Phrase	Explanation
if (conditional) {operating phrase} Endif	[if] conditional phrase. Write conditional phrase in [()] by [if], and execute operating phrases in [()] when the condition is TRUE. Must write [endif] definitely at the end of [if] conditional phrase.
if (conditional) {operating phrase} else {operating phrase} Endif	[if else] conditional phrase. Write conditional phrase in [()] by [if], and execute operating phrases in [()] when the condition is TRUE. Also, execute operating phrases in [()] by [else] when the condition is FALSE. Must write [if else] definitely at the end of [endif] conditional phrase.

Can use [if] phrase again in [if] phrase.

Can use [if] phrase in [if] phrases without limit.

That is, Can use [if] phrase in [if] phrases and [if] phrase in [if] phrases in [if] phrase again continuously.

```
1 if ([DB:PLC1:P0003] == 1 )
2 {
3   if ([DW:PLC1:D0000] == 100 )
4   {
5     [DW:PLC1:D0100] = 333;
6   }
7   else
8   {
9     [DW:PLC1:D0100] = 222;
10  }
11  endif
12 }
13 else
14 {
15   [DW:PLC1:D0100] = 111;
16 }
17 endif
```

[Figure. [if] phrase in [if] phrases]

Explaining script phase above is as following.

Explanation
If data of P3 bit address is ON and data of D0 is 100, substitute data 333 in address D100. If data of P3 bit address is ON and data of D0 is not 100, substitute data 222 in address D100. If data of P3 bit address is OFF, substitute data 111 in address D100.

[if~endif] phrase and [if~else~endif] phrase can be registered easily in contents of script by [Drag & drop] of mouse the registered phrase at left low part. How to register is explained in low part of clipboard.

(7) Clipboard part

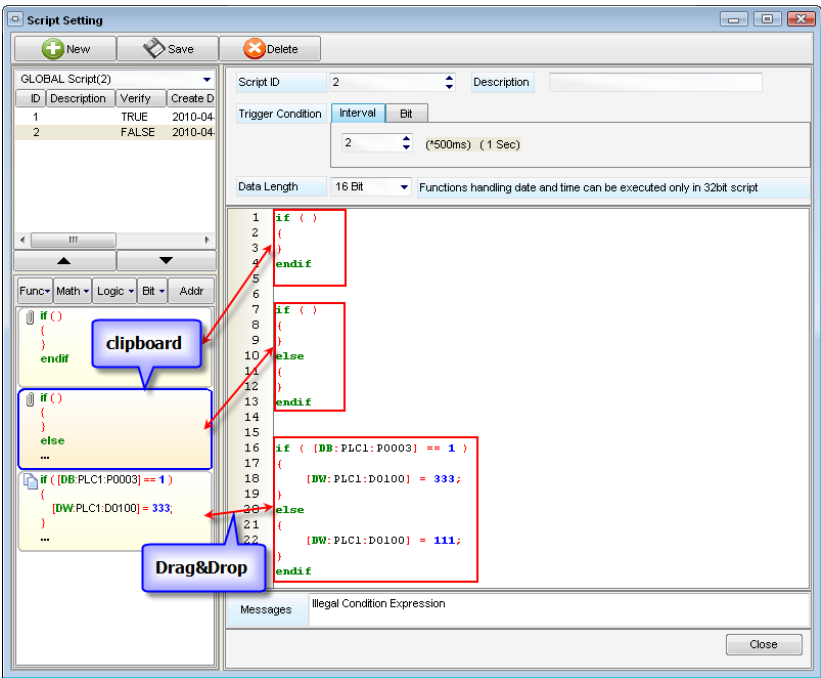
Left low space is clipboard part.

[if~endif] phrase and [if~else~endif]phrase are registered basically.

Can register the parts of script drawn by [Mouse drag & drop] in clipboard part. Also, the registered script in clipboard can be brought to script content screen.

Clipboard part is not saved.

So, if close [Script setting] screen, balance phrases except [if~endif] phrase and [if~else~endif] phrase disappears.



[Figure. Clipboard part]

(8) Address offset function

[Address offset function] is the function which enables the address with additionally-marked address to [Original address] to be used.

Additionally-marked address is called [Offset address].

Offset address is inserted in the same format as [:@SW:0200] after [Standard address].

[:@SW:0200] means that internal address 200 is used as offset address.

Let us take an example with [DW:PLC2:D0000]=[SW:0000:@SW:0511]; phrase.

If does not offset address and use it together with [DW:PLC2:D0000]=[SW:0000], substitute data of internal address “0” to address [D0000] of PLC2.

But, if use offset address, it becomes the phrase to data of internal address 5 which addes [5] to internal address to address [D0000] of PLC2 when data of internal address 511 is [5].

Address offset function can be designated along used address in script contents.

7.7.6 Type of script content

Script content is drawn up using script calculating part. Explaining the type of scrip contents additionally is as following.

(1) Input comment

Comment is used when needs to input explanation which has nothing to do with program of script.

One line of comment and multiple lines of comment can be input in script.

1	// 1-line comment
2	
3	/*
4	
5	multi-line comment
6	
7	*/
8	

[Figure. Script comment]

One line of comment is input by [//] mark before comment.

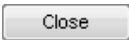
If wants to proceed with multiple lines at a time, input [/*] mark before multiple line of comment and [*/] mark at the end.

(2) Ending type of operating phrase

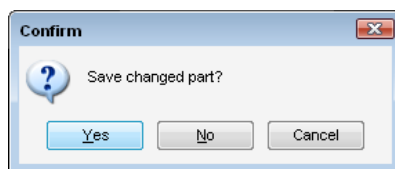
Always have to input [;] mark at the end of command in script. [;] mark means the end of command phrase.

If [;] mark is missed in command phrase, it displays there is an error in scrip contents by indicating as [illegal Condition Expression].

7.7.7 Close script setting screen

If finish script setting, press [X] button at right upper of script setting screen, or close script setting screen by pressing  button at right bottom.

If there is the changed part, can save the changed part as following message before closing.



[Figure. Confirmation message regarding the changed part]

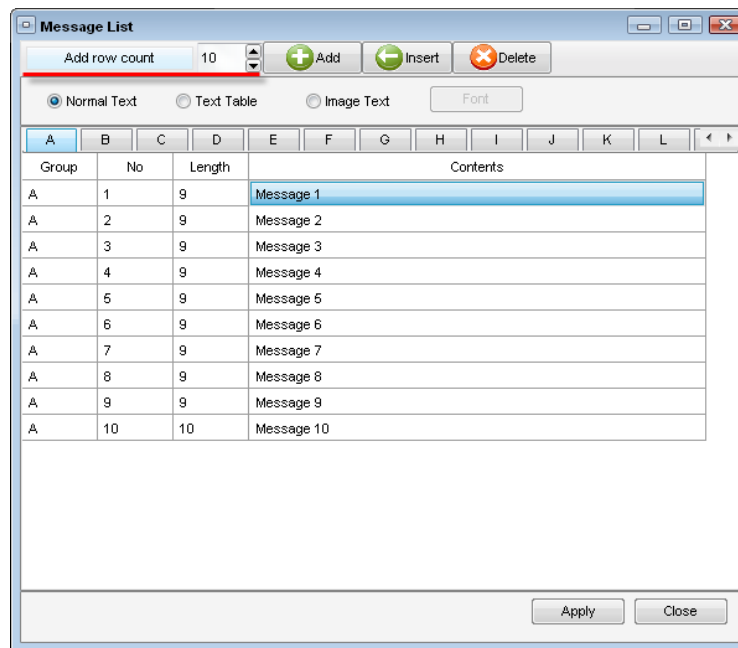
7.8 Message Table

Message Table registers character line to use in bit message/word message tag.




How to set message table is as following.



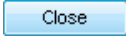
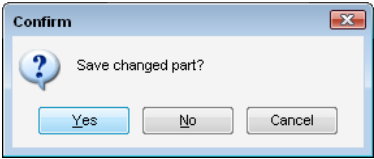
1. Set group.
2. Add message as many as message to register.
3. Input the added contents (character line) each.

7.8.1 Screen composition of Message Table



[Figure. Message Table]

Message Table	Explanation
Add row count <input type="text" value="10"/>	Input number of message to add.
	Add message as many as [Add row count].
	Insert one message in the middle of registered messages. After selecting the position to insert, new message is added and inserted if press [Insert] button.
	Delete selected message. If use keyboard arrow keys with Shift key pressed, or select several messages by dragging of mouse, can delete multiple messages at a time.
Normal Text	Displays message contents which user inputs in person in message tag using provided font from touch screen main body.
Text Table	Displays already-registered character line as message content in multiple language table.
Image Text	Displays message contents with image characters which user inputs in person in message

	tag using various fonts of windows.
Group 	Can designate 26 groups ranging A~Z.
Contents 	Register message content of each added message list.
	If press [Apply] button after message table setting, set content is saved. After setting message table, close message table setting screen. If the changed parts are not saved, can save through following message. 

7.8.2 Register message

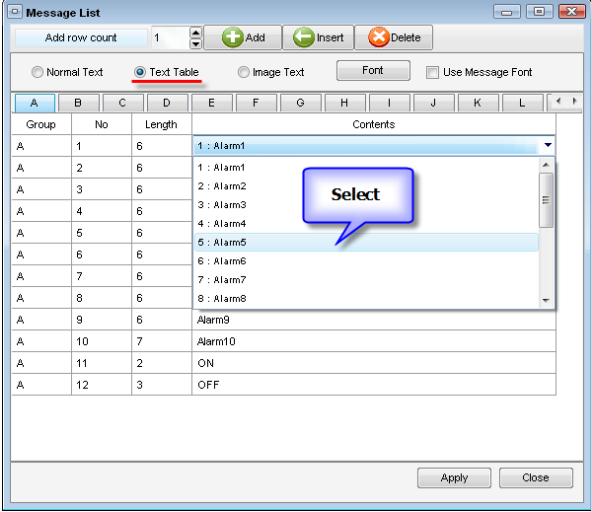
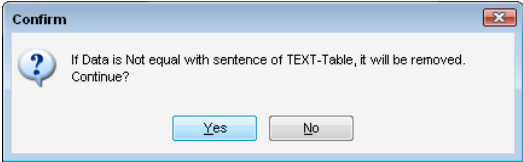
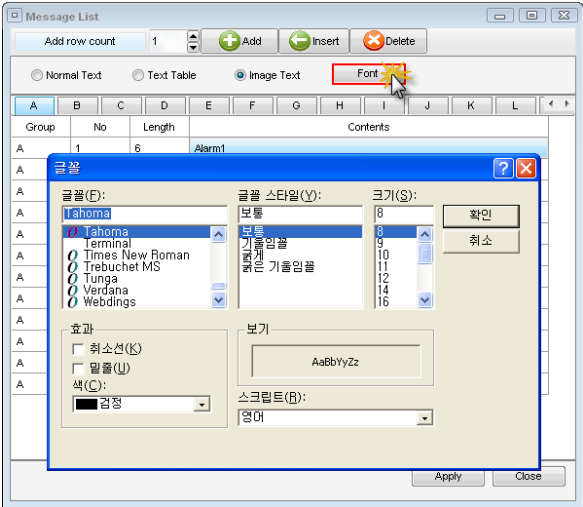
(1) Composition of message registering parts

Message	Explanation
Group	Displays the group from A~Z.
No .	Number of each message remarked in sequence.
Length	If input contents of message, set automatically by calculation.
Contents	Contents of each message. Can input multiple lines.

(2) Input message

Can input contents of each message along selected [Normal Text], [Text Table] and [Image Text].

In case of setting [Normal Text], [Image Text], Input string in person. In case of setting [Text Table], can select it string registered in [Text Table].

Type	Explanation
Normal Text	Displays message contents which user inputs in person in message tag using provided font from internal touch screen.
Text Table	<p>Use character line registered already in multiple language table as message content</p>  <p>Text table cannot be used mixing with other character type.</p> <p>When there is alarm list which user's character line or alarm list input by image character, delete existing message list if multiple language table setting. So, it displays when there is change as following.</p> 
Image Text	<p>Displays message contents with image characters which user inputs in person in message tag using various fonts of windows. In case of selecting image character, can select fonts of image character to display by pressing [Font] button.</p> 

(3) Copy/Paste

Can copy/paste input messages.

After selecting multiple messages by dragging of mouse, or by using arrow keys with Shift key of keyboard pressed, copy is implemented if press [Ctrl key+C]. Also, it can be done if press [Ctrl key+V] button.

Can paste it to other group or Excel file after copy.

If message to paste is more than number of the registered messages, can paste it by adding number of message as much as parts automatically.

For example, if paste 20 messages when there are registered 10 messages, executes paste new 10 messages to 20 messages.

(4) Input multiple line message

Can input multiple line of message contents.

If press [ENTER] key with [Ctrl] key of keyboard pressed, can input message in next line.



[Figure. Input multiple line of message contents]

7.9 Eventlog

Eventlog is the function which monitors operation of specific address.

If condition of registered event is met after registering bit address and word address as event in [Eventlog] screen, can be recorded in CF memory card as eventlog data.

Eventlog data saved in CF memory card can be displayed using eventlog viewer tag.





Grouping is available up to maximum 255 and even registering is available up to 254 per group.

NO	SIZE	ADDRESS	COND	MIN	MAX	CONTENTS
1	Bit	(SYS)0000.00	ON	0	0	EVENT 1
2	Bit	(SYS)0000.01	OFF	0	0	EVENT 2
3	Bit	(SYS)0000.02	REVERSE	0	0	EVENT 3
4	Word	(SYS)0010	CHANGE	0	0	EVENT 4
5	Word	(SYS)0011	CHANGE	0	0	EVENT 5
6	Word	(SYS)0012	RANGE	0	100	EVENT 6

[Figure. Eventlog]

7.9.1 Add event/group

Add event and group with buttons at upper.

Event log	Explanation
Add Count	Input number of events to add.
	New event is added as many [new add]. Newly-added address of event is increased by 1 based on address of last line.
	New event is added as number of add above the selected event.
	Delete selected event. If wants to select multiple events, select events when drags with mouse or with [Shift] key pressed.
	Add group.

7.9.2 Register event

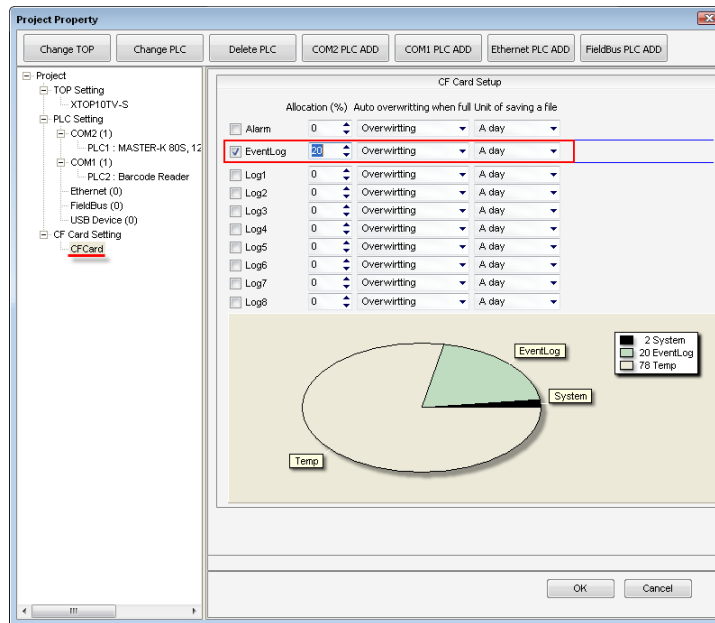
MYGROUP_A		MYGROUP_B				
NO	SIZE	ADDRESS	COND	MIN	MAX	CONTENTS
1	Bit	(SYS)0000.00	ON	0	0	EVENT 1
2	Bit	(SYS)0000.01	OFF	0	0	EVENT 2
3	Bit	(SYS)0000.02	REVERSE	0	0	EVENT 3
4	Word	(SYS)0010	CHANGE	0	0	EVENT 4
5	Word	(SYS)0011	CHANGE	0	0	EVENT 5
6	Word	(SYS)0012	RANGE	0	100	EVENT 6

[Figure. Register event]

Event	Explanation
Group	If group is added at upper part as [MYGROUP_A], [MYGROUP_B], consists of page named...
NO	Number is marked in registering sequence.
Size	Select one out of [Bit] or [Word]. <div> <div>Bit</div> <div>Word</div> </div>
Address	Set address to monitor.
Condition	<p>In case of using [Bit] address, the condition is as following.</p> <div> <div>ON</div> <div>OFF</div> <div>REVERSE</div> </div> <p>[ON] is recorded at the moment data of bit address is ON. [OFF] is recorded at the moment data of bit address is OFF. [REVERSE] is recorded at the moment data gets converted.</p> <p>In case of using [Word] address, the condition is as following.</p> <div> <div>CHANGE</div> <div>RANGE</div> </div> <p>[CHANGE] is recorded at the same time of word address change. [RANGE] is recorded if it meets the designated range when data of word address is changed.</p>
Minimum	Minimum value of when [RANGE] of [Word] address is used as condition.
Maximum	Minimum value of when [RANGE] of [Word] address is used as condition.
Contents	<p>Input contents to record when condition of event is met.</p> <p>Content of event can be input by multiple line input. If [ENTER] key is pressed with [Ctrl] key pressed, can input content in next line.</p>

7.9.3 CF card setting

Have to set [Project setting]–[CF card setting] in [Project menu] in order to save data created from [Eventlog] in CF memory card. After checks [Eventlog] as below figure, execute [Allocation]. If does not implement [CF card setting], eventlog data is not saved in CF memory card.



[Figure. CF card setting]

7.9.4 Eventlog file saved in CF memory card

If registered event meets the condition, it is recorded in CF memory card as following.



[Figure. Eventlog saved in CF memory card]

Event log is created as `[*.evt]` and data is divided by “.(period)”.

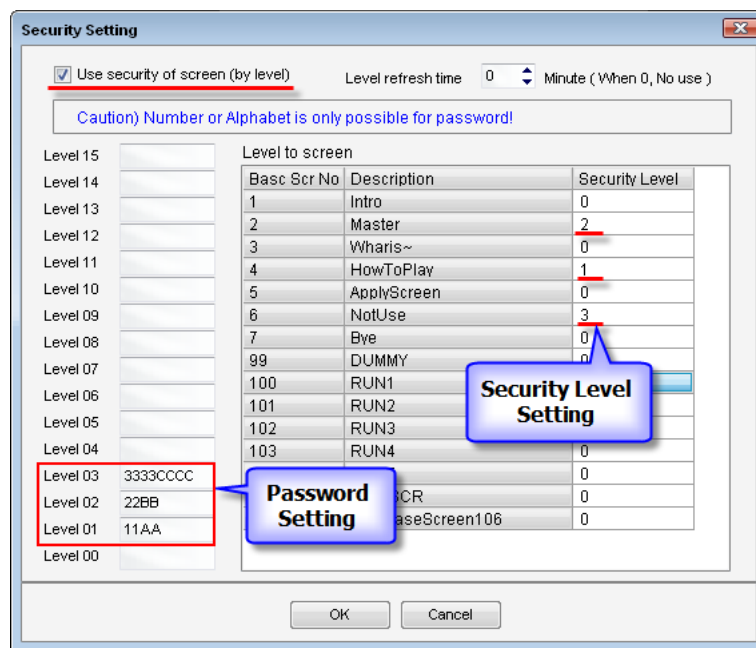
Type of recorded eventlog is recorded whenever in sequence of [Event number, occurred data, occurred time, event content, data before change and data after change].

7.10 Security Level

Password is set by 15 levels and security level is set in base screen.

Password setting screen is set as following.

1. Check [Screen security use].
2. Set password per level.
3. Set security level to apply password in base screen.
4. Set level updating time.



[Figure. Password setting]

7.10.1 Password Setting

Set password per level.

Can set the level by 16 levels ranging [Level 00]~[Level 15].

Cannot input password at [Level 00] and security level [0] means the status of no security setting.

First, decide which level is used up to, and input each password.

Can input password up to maximum 8 digits, and number and English can be input only.

As for English, capital letters can be recognized only.

Level 15	
Level 14	
Level 13	
Level 12	
Level 11	
Level 10	
Level 09	
Level 08	
Level 07	
Level 06	
Level 05	
Level 04	
Level 03	3333CCCC
Level 02	22BB
Level 01	11AA
Level 00	

[Figure. Password setting per level]

7.10.2 Security level setting in base screen

Can set security level in base screen.

Password-applied levels only can be input out of 16 levels.

Base Scr No	Description	Security Level
1	Intro	0
2	Master	2
3	Wharis~	0
4	HowToPlay	1
5	ApplyScreen	0
6	NotUse	3
7	Bye	0

[Figure. Security level setting in base screen]

Can view all base screens registered in project where [Screen level] is set.

Screen level	Explanation
Base Scr No	Number of base screen registered in project.
Description	Name of base screen registered in project.
Security Level	Set security level in base screen.

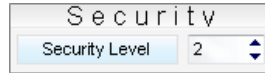
It is OK to input [Number] of level which sets password out of security level 0~15.

If the screen is set as security level [0], it is the screen without security setting.

7.10.3 Security level setting in figures and tags

All figures and tags can be set by security level each.

There are the parts to input security level at left bottom of property screen of figures and tags.



[Figure. Security level]

Security level [0] is the status without security setting. If input value over [1] as security level, the tag can be viewed if it is the same as input value in security level, or logging with more level than that.

If logging is not successful, the tag is not viewed.

7.10.4 Level refresh time



[Figure. Level refresh time]

Level refresh time can be input by minute unit.

After logging the screen which security level is set, logging gets canceled after specific time passed.

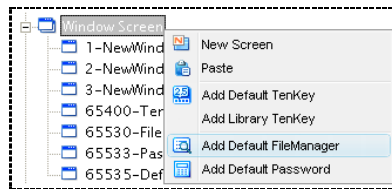
Specific time is based on a point of time without input in touch screen. That is, if user does not touch the touch screen for specific time, level authority obtained after input password is gone.

7.10.5 Password window screen and operation

Password window screen is the window screen to input password.

After setting password with checks on screen security use, [Password window screen] is added with number 65533 to window screen automatically closing password setting screen if press [Confirm] button.

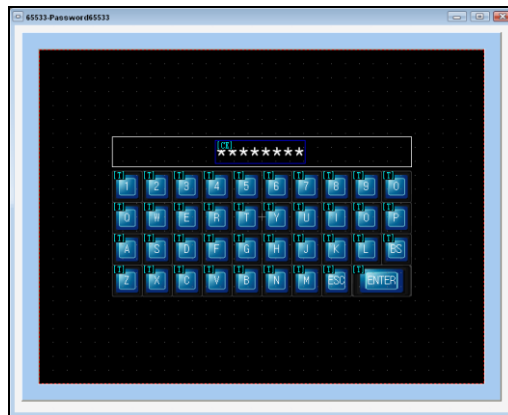
When password window screen number 65533 is deleted during edit, or wants to use password window screen after adding it to project in manual, it is OK to execute [Add password window] in [Popup menu] of window screen as following figure.



[Figure. Add password window]

Number of password window screen is fixed to number 65533 internally.

If change screen number, have to pay attention because popup of password window screen cannot be executed.

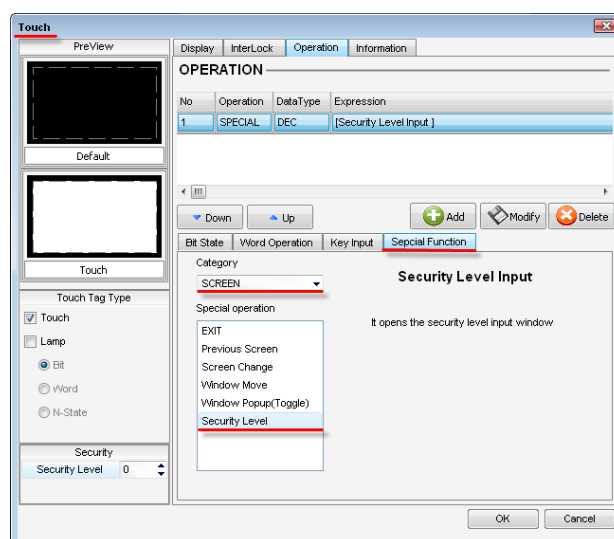


[Figure. Password window screen]

Password window screen enables password to be input with automatic popup when it is converted to base screen set by security level.

Also, can input password by implementing popup in manual with touch tag.

Set sorting to [SCREEN] in [Special function] of touch tag and set [Security Level]. If touches set touch button like this, [Password window screen] is popped up.



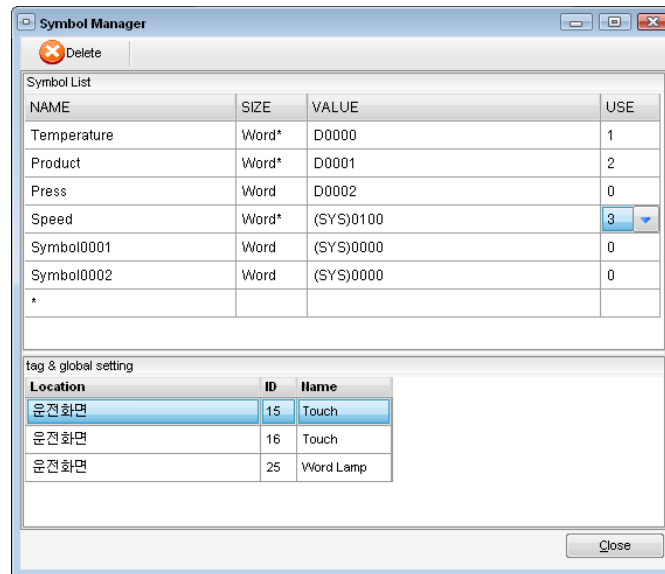
[Figure. Password input window popup using touch tag]

7.11 Symbol manager

Symbol address is the address which other name is given.

If grants its name for purpose of using actual system of PLC or internal address, it can be convenient.

In order to use symbol address as one of address, have to grant other name to the address in symbol manager.



[Figure. Symbol manager]

7.11.1 Symbol manager screen composition

Symbol manager screen registers symbol address at upper part, and shows the position and information using each symbol address in project at bottom part.

(1) Symbol list

Can show the list which symbol address is registered.

Symbol List			
NAME	SIZE	VALUE	USE
Temperature	Word*	D0000	1
Product	Word*	D0001	2
Press	Word	D0002	0
Speed	Word*	(SYS)0100	3
Symbol0001	Word	(SYS)0000	0
Symbol0002	Word	(SYS)0000	0
*			

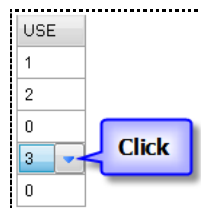
[Figure. Symbol list]

Symbol list	Explanation
NAME	Name which is newly granted to address. Use this name as symbol address in project.
SIZE	Select address to register out of bit address or word address. <div> <div>Bit</div> <div>Word</div> </div>
VALUE	Actual address to grant new name. <div> <div>D PLC1</div> <div>Internal</div> <div>Special</div> </div>
USE	Using number of symbol address in project.

(2) Position information using symbol address

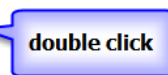
Displays position information using each symbol address at bottom.

If clicks symbol address which is not [0] in [USE] part of symbol list, it displays following figure. If clicks arrow, position information which uses symbol address is displayed at bottom.



[Figure. View position used symbol address]

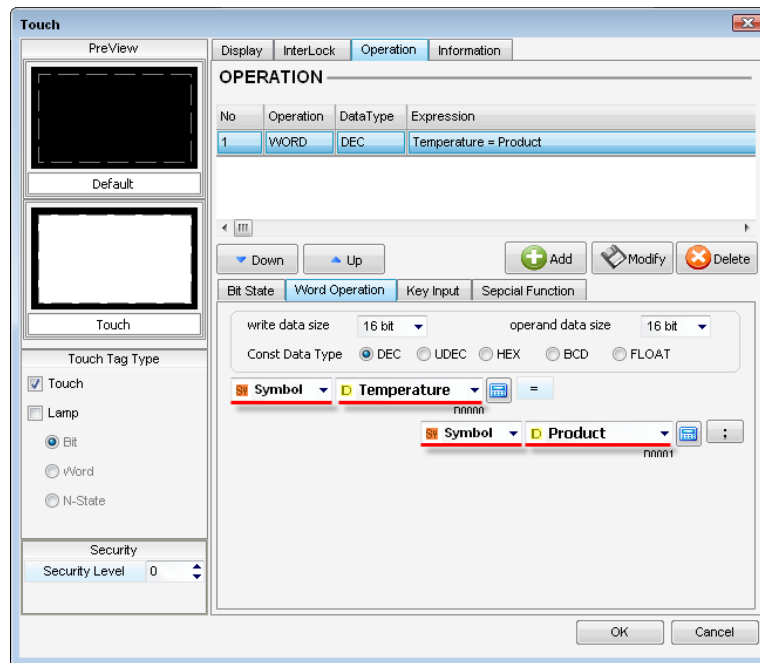
tag & global setting		
Location	ID	Name
RUN	15	Touch
RUN	16	Touch
RUN	25	Word Lamp



[Figure. Position information using symbol address]

Used position	Explanation
Location	Shows name of base screen using symbol address.
ID	ID of tag using symbol address.
Name	Name of tag using symbol address.

If double-clicks [Position information], shows tag/entire setting parts using symbol address by immediate importing as below figure.



[Figure. Touch tag using symbol address]

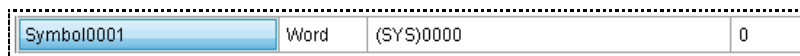
7.11.2 Register/delete symbol address

(1) Register symbol address

Registering symbol address is displayed as basic value if [Double-click] the column like below figure at the bottom out of [Symbol list].



[Figure. Register new symbol address]



[Figure. Symbol address set as basic value]

Register [NAME], [SIZE] and [VALUE] in symbol address set as basic value after changing them to symbol address to register actually.

(2) Delete symbol address

After selecting the registered symbol address in [Symbol list], symbol address is deleted if press [Delete] button at upper part.

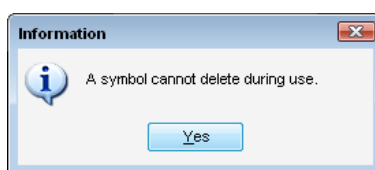


[Figure. Delete button]

Symbol address only which was not used in project can be deleted.

That is, symbol address only with [USE] as [0] can be deleted.

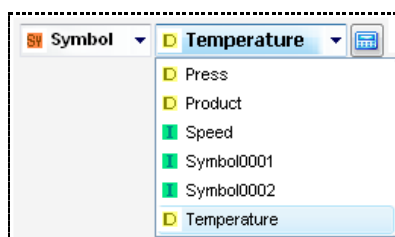
If delete symbol address under use, alarm message is displayed as following.



[Figure. Delete alarm message]

7.11.3 Use symbol address in project

When uses symbol address in project, select [Symbol] as address type first. Then, symbol address registered in [Symbol manager] is displayed in list as below figure. It is OK to select symbol address to use.



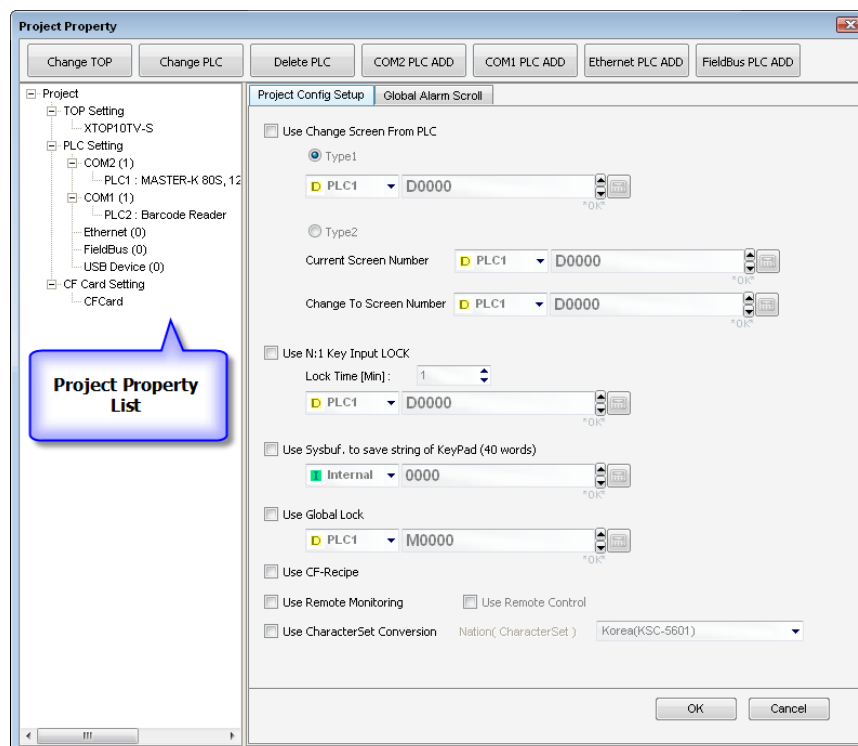
[Figure. Use symbol address]

7.12 Project Property

Part which manages entire environment of project and its related information.

Project Property functions largely as following.

1. Set project environment.
2. Set model name of touch screen, and can set menu screen of touch screen.
3. Select PLC equipment which communicates with touch screen through [Serial/Ethernet/USB], and set communications.
4. Set CF memory card.



[Figure. Project Property]

[Project Property] screen consists of the buttons at upper part, [Project Property list] at left and [Setting contents of each list] at right.

[Project Property list] largely consists of [Project part], [Touch screen setting part], [PLC setting part] and [CF setting part].

If selects [Project] in [Project Property list], pages of [Project Config Setup] and [Global alarm scroll] are displayed at right. Let us explain [Project setting] page first.

(1) Screen conversion from PLC

Function which converts and controls touch screen display from PLC.

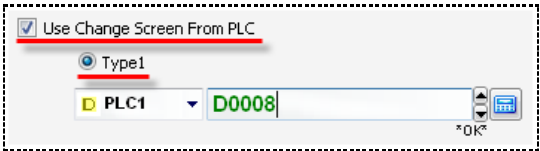
If set specific address of PLC, data of the address becomes base screen number of touch screen, it enables display of touch screen to be converted

There are two ways regarding how to [Convert it from PLC], [Type 1] and [Type 2]

- Type1

[Type1] sets one address which needs to convert screen.

That is, [Type1] is used when [Read address] and [Write address] which's purpose is to convert screen are used in the same way.

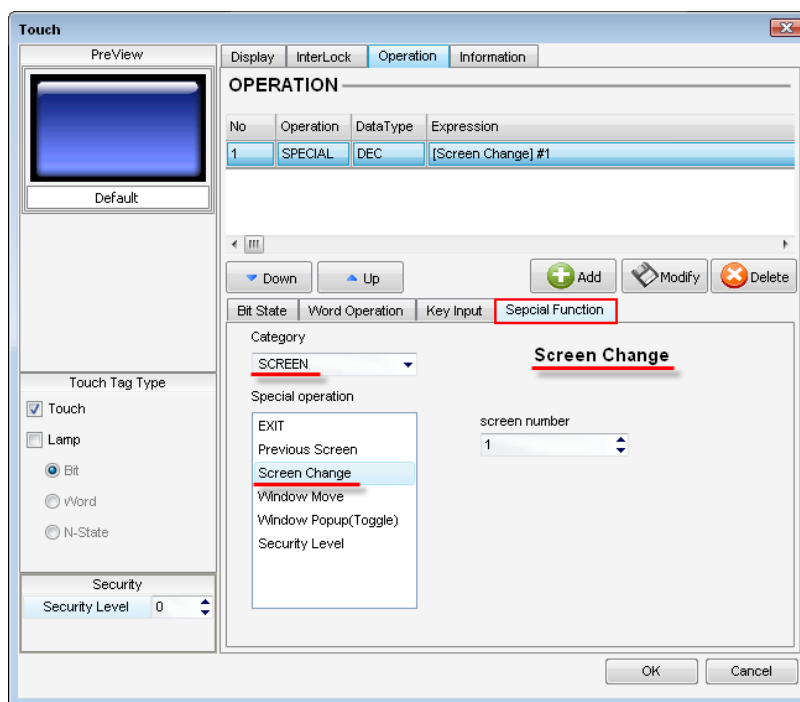


[Figure. Type1]

Address	Explanation
[D0008]	Address which touch screen imports and reads data.
Read address	Address enabling touch screen to read data of PLC address and convert it to screen.
[D0008]	Address which touch screen writes data.
Write address	Address enabling touch screen to write data of PLC address.

If data of designated address of screen converting is changed, touch screen can convert it to the same screen number as the data (Read function). Also, when there is registered touch button for converting screen in touch screen, can input screen number as data to the address [Screen converting from PLC], and convert it to the screen (Write function).

Touch button for converting screen is set as following.



[Figure. Screen converting function of touch tag]

For example, currently touch screen shows screen number 1, if uses [D0008] address of PLC as address for conversion, screen conversion operates as following.

If press touch button to convert to number 3 screens from paint picture screen, writes screen number [3] to move in [D0008] address of PLC, moves screen to number [3]. Also, if inputs data [5] in address [D0008] in PLC program, touch screen moves to screen number 5.

Type1	Before RUN	Enter to RUN	Screen conversion to No.3 with touch button	Change data of [D0008] to [5] in program
D0008	Free initial value	1	3	5
Explanation on operation 동작 설명	Initial status of touch before run Free initial value can be in address [D0008] of PLC.	If RUN starts when initial screen number of touch is [1], fist screen becomes number 1 and [1] is written in address [D0008].	If touches touch tag set as number 3, data of address [D0008] is changed to [3] and converted to number 3.	If changes data of [D0008] in PLC program, it is converted to screen number 5.

But, as for function of [Type1], if user touches touch tag for screen conversion and inputs new screen conversion data in address [D0008] in PLC program, touch screen is moved to lately-recorded screen number in [D0008]. In this situation, it looks like touch operates incorrectly. In order to prevent this incident, use method [Type2] using [Read address] and [Write address] separately.

- Type2

As improved function more than, it sets [Read address] and [Write address] required for screen conversion. Type2 does not overwrite data with the address to be used for screen conversion in PLC given that [Read address] and [Write address] exist separately.

The screenshot shows a configuration window titled 'Use Change Screen From PLC'. It has two radio buttons: 'Type1' and 'Type2'. 'Type2' is selected. Below the radio buttons, there are two rows of configuration. The first row is for 'Current Screen Number', showing 'PLC1' in a dropdown and 'D0008' in a text field. The second row is for 'Change To Screen Number', showing 'PLC1' in a dropdown and 'D0000' in a text field. Both text fields have a '*OK*' button to their right.

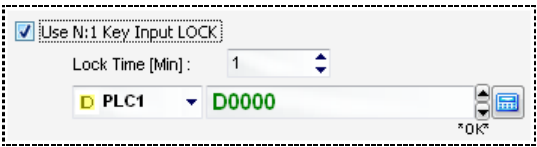
[Figure. Type2]

Address	Explanation
[D0008] Screen number out of display (Read address)	Address where touch screen reads data. If changes data in PLC program, [Read address] which touch screen read the data and enables screen conversion to be implemented. Read and convert screen only when data is changed.
[D0000] Change screen number (Write address)	Address where touch screen reads data. When converts it to special function of touch screen of touch screen, it is [Write address] recording screen number and converting screen.

Type2	Before RUN	Enter RUN	Convert to No.3 with touch button	Change data of [D0008] to [5] in PLC program
D0000 (Write address)	Free initial value	1	3	5
Explanation on operation	Initial status of touch before run May have free initial value in address [D0000] & [D0008] of PLC.	If RUN starts when initial screen number of touch is [1], fist screen becomes number 1 and [1] is written in address [D0000].	If touches touch tag set as number 3, data of address [D0000] is changed to [3] and converted to number 3.	If changes data of [D0008] in PLC program to [5], it is converted to screen number 5.
D0008 (Read address)	Free initial value	Free initial value	0	5

(2) Use N:1 key input lock

[N:1] is a way of communications between several touch screens and one PLC.
Front [N] means the number of touch screen and [1] means the number of PLC.

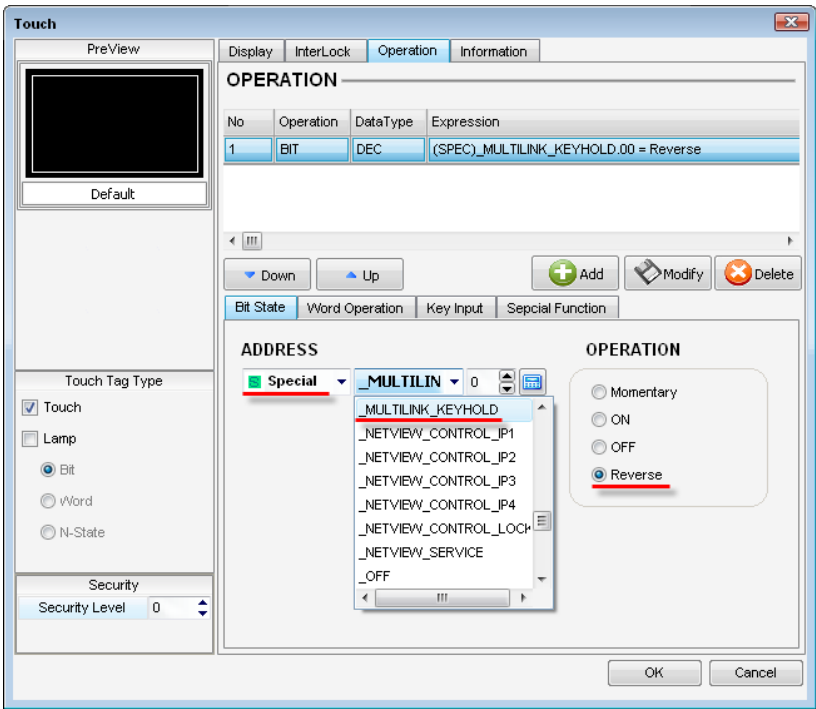


[Figure. [N:1] key input lock function]

In case of using [N:1] Ethernet communications, it is the option which is used to occupy handling out of treating touch. That is, it is used to prevent simultaneous input of touch screens connected with PLC.

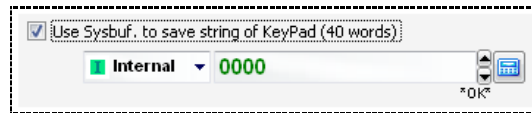
In order to use this function, it needs touch tag to set and release key input lock.
Touch tag to set and release key input lock enables data of [_MULTILINK_KEYHOLD] out of touch tag to be ON/OFF.

[_MULTILINK_KEYHOLD]	Explanation
[ON]	Set key lock function Telephone exchange number of the touch screen is recorded to the address set in [N:1 key input lock use]. All input of other touch screens than touch screen which has telephone exchange number recorded in this address is blocked.
[OFF]	Key lock function gets released.



[Figure. Touch tag which sets/releases key input lock function]

(3) Use internal address saving key input character line(40 words)



[Figure. Function of using internal address saving key input character line]

It is used when inputs data to [Character key display tag] registered in screen.

[Key display tag] receives data through keypad (ten key) as below figure.

Upper of keypad consists of input values through key so that can recognize it using [Number tag/character line tag] as the occasion demands.



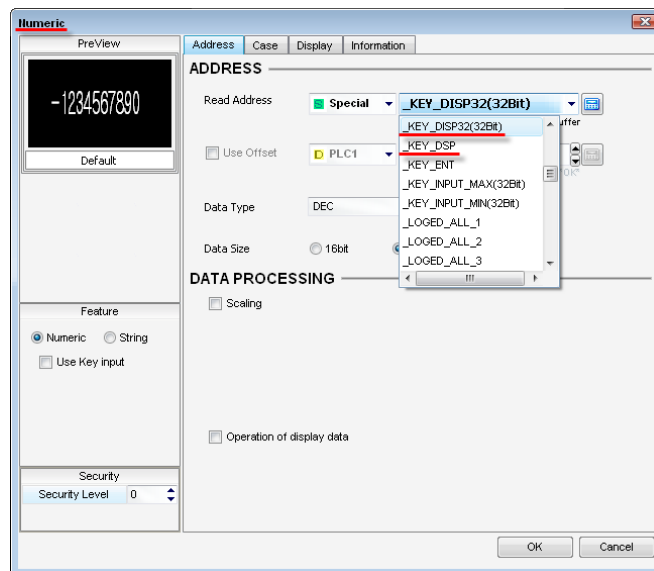
[Figure. Number keypad (ten key)]



[Figure. Character keypad (ten key))

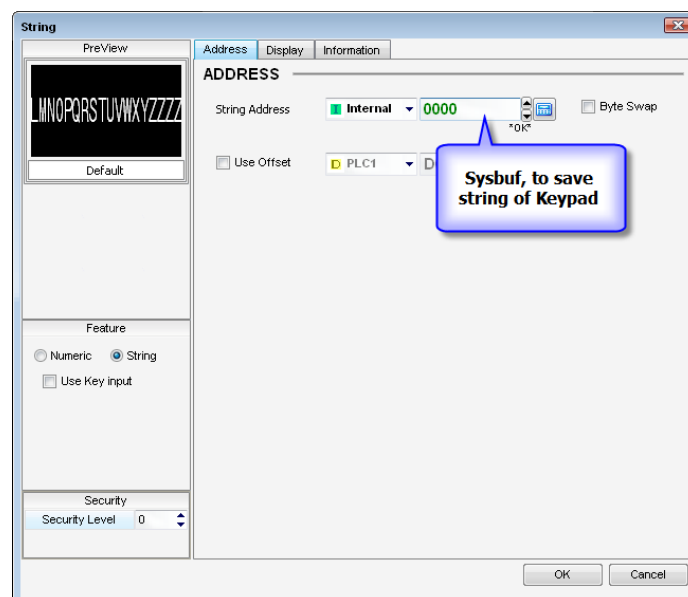
At this time when inputs number, can recognize key value input in number tag using [_KEY_DSP]와 [_KEY_DISP32(32Bit)] of [Special] address.

Special address	Explanation
[_KEY_DSP]	Shows key value input through number key. 16bit address.
[_KEY_DISP32(32Bit)]	Shows key value input through number key. 32bit address.



[Figure. Key_Display function of number tag]

In case of input characters, use [internal address saving key input character] function because there is no [Special] address.

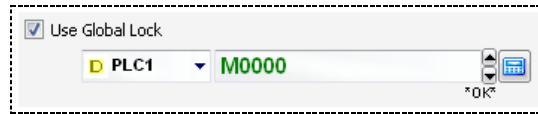


[Figure. Key_Display function of character tag]

If sets [Internal address saving key input character] in [Project setting], and register internal address in upper part of character keypad by input it as address of [Character tag], input key value in character tag is displayed whenever character key is input.

(4) Use global lock

[Global lock] function is the function which locks touch screen so that it cannot be used upon condition. That is, it is the function which prevents touch though touches the screen.



[Figure. Use global lock]

If data of set bit address is [ON], touch operation of touch screen does not work, if [OFF], touch can be implemented upon release of lock function of touch screen.

(5) Use CF-Recipe

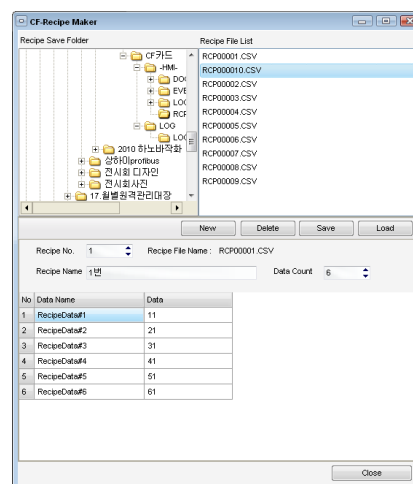
It is the function which saves recipe data in CF memory card.

When uses this function, please check it.



[Figure. Use CF-recipe function]

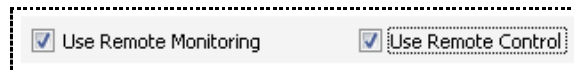
[CF-recipe creator] of [Tool] menu is used for function of create and save data file in CF memory card.



[Figure. CF-recipe creator]

(Refer to [44.4] of [Chapter 44] regarding how to set [CF-recipe creator])

(6) Use remote monitoring function



[Figure. Remote function]

[Remote] function is the function of [TOPView] and monitoring screen of touch screen in PC. [Remote monitoring function] is available when touch screen connected with PC through Ethernet and set [Create TOPView clients] of [Tool] menu.

(☞ Refer to [44.22] of [Chapter 44] regarding TOPView)

As for TOPView function, that is, if wants to use remote monitoring, must check [Use remote monitoring] definitely.

Remote monitoring	Explanation
Use Remote Monitoring	Only monitors touch screen in PC.
Use Remote Control	Control it using mouse click as well as monitoring touch screen in PC.

7.12.2 Global alarm scroll page

[Global alarm scroll] is the function which one line displays sounded alarm in touch screen under operation. Displays currently-sounded contents are displayed from right to left by one character each.

[Figure. Global alarm scroll]

First, checks [Use global alarm scroll]. Then, sets detailed setup as following contents.

Global alarm scroll	Explanation
Group	Sets group of alarm list to display.
Interval	Sets time taking to scroll one by one letter.
Position	Sets the position to display alarm in screen out of [Low part] or [High part].
Delimiter	<p>Selects character which divides gap between alarms.</p>
Font Name	<p>Sets font of alarm.</p>
Font color	Sets font color of alarm.
Background color	Sets background color of alarm.

If sets it as figure above, it displays at lower part of touch screen under operation as following.

Content of alarm sounded per 1 second as scroll interval is displayed by moving one letter each from right to left.

Gap between alarms is divided and marked with [/].

[Figure. Global alarm scroll display]

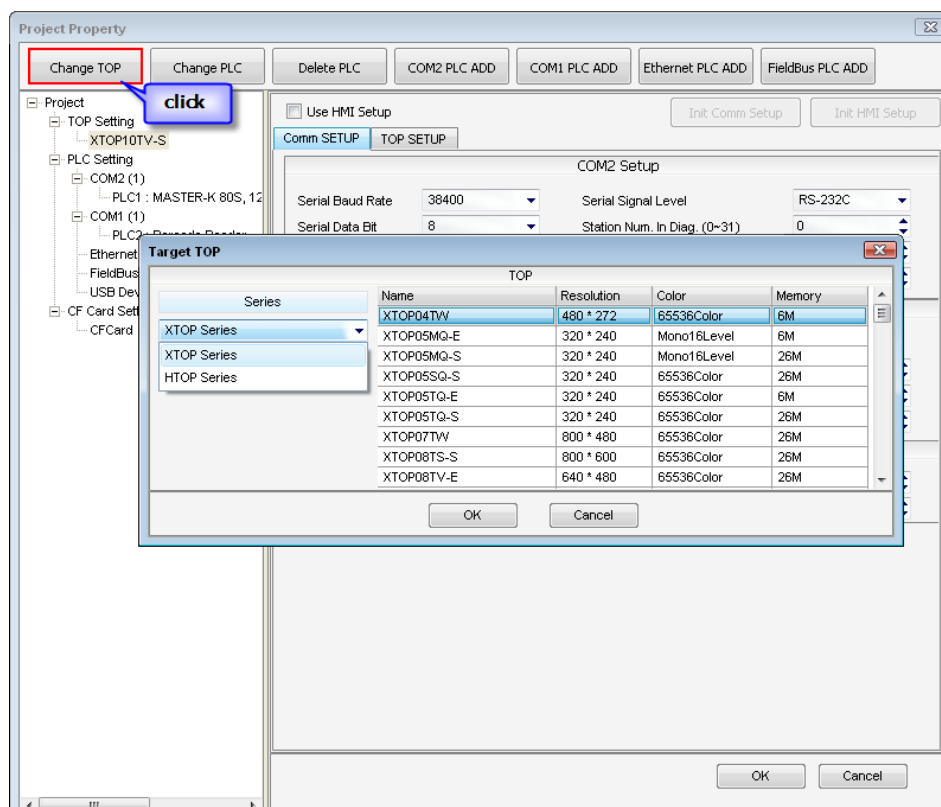
7.12.3 Touch screen setting

It is [TOP setting] part in left [Project setting list].

It has the function of changing model name of touch screen and setting menu screen.

(1) Change model name of touch screen

Changes model name of currently-set touch screen in project

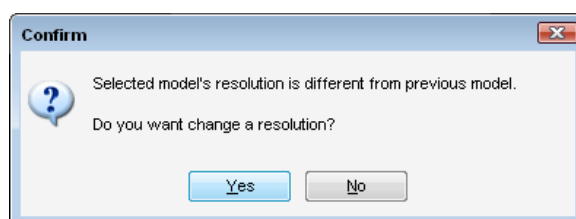


[Figure. Change model name of touch]

If clicks [Change TOP] button above as figure above, screen to select model of touch screen appears.

Select model to change and press [OK] button.

In case of changing it to other model with different resolution, following message appears.



[Figure. Resolution change confirmation message]

Resolution change	Explanation
[Yes] button	Sizes of figure and tag registered in screen matching resolution automatically are changed. But, there are some parts which are not applied by size automatic changing function for some of characters and tags. These parts should be changed by manual.
[No] button	Sizes of figure and tag registered in screen remain the same as before.

(2) Menu screen setting of touch screen (Use HMI setting)

Can set menu of menu screen of touch screen in project.

If transmits this project to touch screen, menu screen of touch screen is changed to set value of menu set in project.

First, check [Use HMI setting].

Then, set [Communications setting] and [TOP SETUP(touch setting)] page.

The screenshot displays a software interface for HMI setup. At the top, there is a checkbox labeled 'Use HMI Setup' which is checked. To its right are two buttons: 'Init Comm Setup' and 'Init HMI Setup'. Below these are two tabs: 'Comm SETUP' (which is active) and 'TOP SETUP'. The main area is divided into three sections: 'COM2 Setup', 'COM1 Setup', and 'N : 1 Setup'. Each section contains several configuration parameters with dropdown menus or numeric input fields. In 'COM2 Setup', parameters include Serial Baud Rate (38400), Serial Data Bit (8), Serial Stop Bit (1), Serial Parity Bit (None), Serial Signal Level (RS-232C), Station Num. In Diag. (0~31) (0), Time Out [x100 mSec] (10), and Send Wait [x10 mSec] (0). 'COM1 Setup' has identical parameters. 'N : 1 Setup' includes N : 1 Use (NO), N : 1 Station Number (0~31) (0), and N : 1 Max Machine (2~32) (2).

[Figure. Communications setting page during using HMI setting]

☒ Use HMI Setup

Init Comm Setup
 Init HMI Setup

Comm SETUP
 TOP SETUP

HMI Setup

Power On Mode	MENU
Initial Screen Number	1
Screen Save(0~99)(MINUTE)	0
Touch Buzzer	ON
Start Of Latch(0~5119)	1
End Of Latch(0~5119)	0
Printer	DeskJet Port. 2Color
PassWord(1~9999,0:None)	0
Touchkey Sensitivity	NORMAL
In Case of Sys. Err	RESET

[Figure. Touch setting page during use HMI setting]

(☞ Refer to [1.1.4] of [Chapter 1] regarding menu screen of touch screen.)

Set [Communications setting] and [TOP SETUP(touch setting)] page can initialize it using [Comm setting initialize] and [HMI setting initialize].

Button	Explanation
Init Comm setup	Initialize contents set in communications setting page.
Init HMI setup	Initialize contents set in TOP SETUP(touch setting) page.

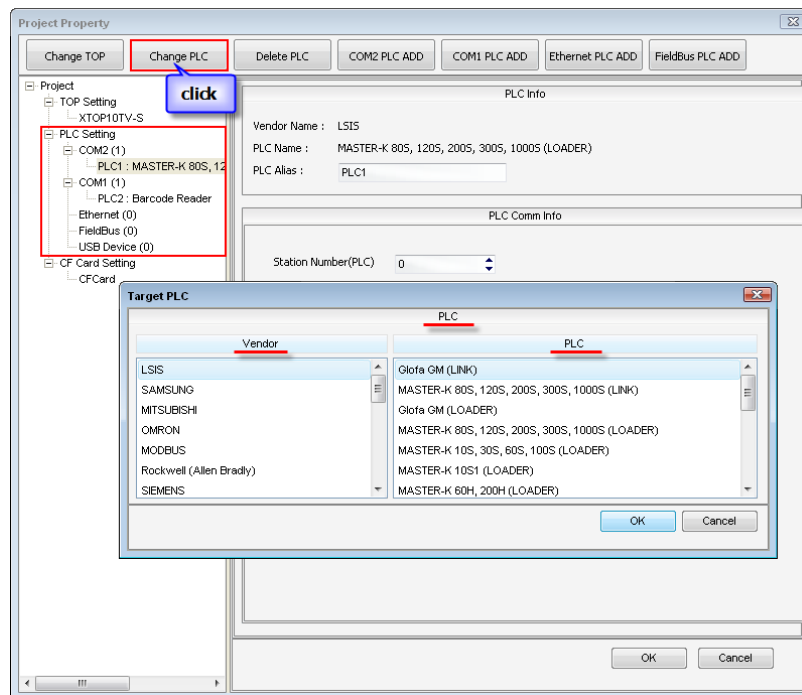
7.12.4 PLC setting

It is the part of [PLC setting] in left [Project setting list].

It implements function of change/add/delete PLC communicating with touch screen.

(1) Change PLC

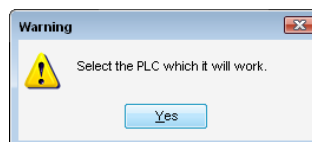
Changes set equipment type of PLC.



[Figure. Change PLC]

Change PLC is as following.

1. Select PLC to change in left [Project setting list]. If does not select PLC to change and press [Change PLC] button, following message appears.

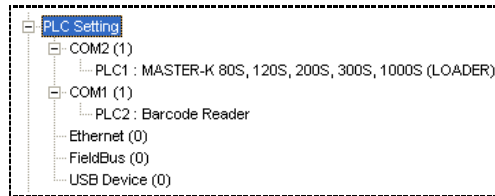


[Figure. Change PLC warning message]

2. Press [Change PLC] button.
3. Select vendor of PLC to change first in popup screen.
4. Then, select equipment type of PLC.
5. If press [OK] button, equipment type of PLC is changed.

(2) Add PLC

Touch screen communicates with PLC, 232/422/485 serial communications, Ethernet communications, FieldBus communications and USB communications.



[Figure. PLC setting]

Touch screen has communications port like list of PLC setting part above as following.

COMM port	Explanation
COM2 (Serial)	Serial port communicating with PLC through 232C/422/485.
COM1 (Serial)	Serial port communicating with PC. Additionally, can communicate with PLC through 232C.
Ethernet	Ethernet port communicating with PC or PLC.
FieldBus	Executes FieldBus communications.
USB Device	Communicates with PLC through USB. Supports communications with Barcode reader.

With following buttons, can add/change/delete PLC along each communications port.

Button	Explanation
PLC change	Change equipment type of set PLC.
PLC delete	Delete set PLC.
COM2 PLC add	Add PLC to connect with COM2 port.
COM1 PLC add	Add PLC to connect with COM1 port.
Ethernet PLC add	Add PLC to connect with Ethernet port
FieldBus add	Add PLC to communicate with FieldBus.

If clicks PLC equipment type set in left [Project setting list], [Equipment information] and [Communications option] at right are displayed.

PLC Info

Vendor Name : LSIS

PLC Name : MASTER-K 805, 1205, 2005, 3005, 10005 (LOADER)

PLC Alias : PLC1

PLC Comm Info

Station Number(PLC) 0

[Figure. Equipment information of set PLC and communications option]

PLC setting	Explanation
Equipment information	Displays vendor/equipment name(equipment type)/byname of set PLC. Byname is the name of PLC displayed at address setting part in project, can be changed.
Communications option	Option setting part along each PLC.

7.12.5 CF card setting

It is set in case of saving alarm or logging data in CF memory card.

If clicks [CF Card] in [Project setting list], following figure appears.

Project Property

Change TOP Change PLC Delete PLC COM2 PLC ADD COM1 PLC ADD Ethernet PLC ADD FieldBus PLC ADD

Project

- Project Setting
 - XTOP10TV-S
 - PLC Setting
 - COM2 (1)
 - PLC1 : MASTER-K 80
 - COM1 (1)
 - PLC2 : Barcode Read
 - Ethernet (0)
 - FieldBus (0)
 - USB Device (0)
 - CF Card Setting (selected)

CF Card Setup

Allocation (%) Auto overwriting when full Unit of saving a file

Function	Allocation (%)	Auto overwriting	Unit of saving a file
Alarm	20	Overwriting	A day
EventLog	20	Overwriting	A day
Log1	50	Overwriting	A day
Log2	0	Overwriting	A day
Log3	0	Overwriting	A day
Log4	0	Overwriting	A day
Log5	0	Overwriting	A day
Log6	0	Overwriting	A day
Log7	0	Overwriting	A day
Log8	0	Overwriting	A day

Pie Chart Legend:

- 2 System
- 20 Alarm
- 50 Log1
- 20 EventLog
- 8 Temp

OK Cancel

[Figure. CF memory card setting]

Data which can be saved in CF memory card during operation of touch screen is alarm, logging and eventlog.

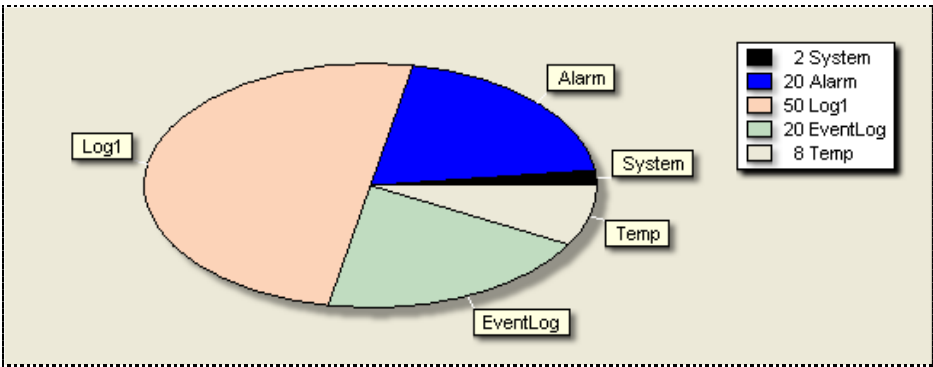
Given that logging can set 1~8, there are the list of [Logging1~logging8] as above.

First, check(☒) data to save in the list.

Then, set detailed items as following.

Detailed items	Explanation
Allocation (%)	Sets if how much percent (%) to use checked items out of total capacity of CF memory card.
Auto overwriting When full	<div>Selects one out of [Previous input erase/continue] or [Stop operation] as operating way after filling allocated storage space.</div> <div><div>Overwritting</div><div>Stop Saving</div></div> <div>[Previous input erase/continue] keeps erasing oldest data and save data continuously.</div> <div>[Stop operation] stops saving data.</div>
Saving unit	<div>Selects one out of [1day] or [1month] unit based on file creation standard.</div> <div><div>A day</div><div>A month</div></div> <div>[1day] saves data for a day creating file by 1 day unit.</div> <div>[1month] saves data for a month creating file by 1 month unit.</div>

If sets [Allocate(%)] part out of detailed items, it displays the graph.



[Figure. CF memory card allocation graph]

In graph, it indicates that [2%] is system boundary, [20%] is alarm boundary, [50%] is logging 1 boundary, [20%] is eventlog boundary and [8%] is balance boundary.

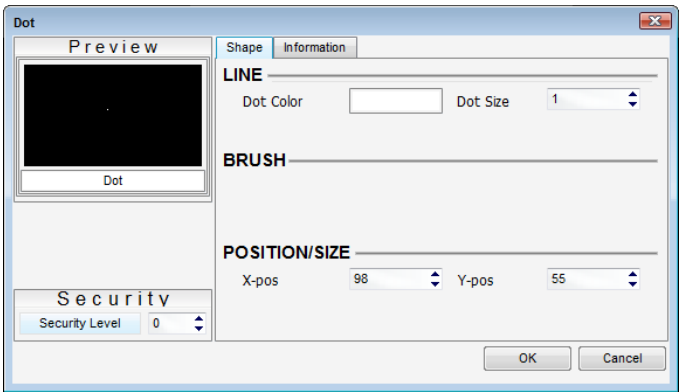
CHAPTER 8 Draw menu

CHAPTER 8 – Draw menu

Draw menu is used when draw pictures in screen.
After registering figures in screen, change the property through property screen.

8.1 Dot

Draw dot. Can draw dots with size of 1~10dot in various color.



[Figure. Property screen of dot]

(1) LINE

Sets color and thickness of dots.

Line	Explanation
Dot Color	Sets color of dot using color pallet..
Dot Size	Selects thickness out of 1~10dot.

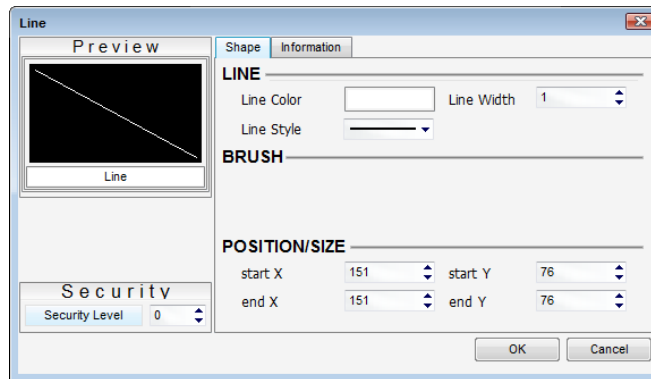
(2) Position/size

Displays values of X/Y coordinates where dots is positioned currently, and can set values in person.

Position/size	Explanation
X pos	Set position at X coordinates.
Y pos	Set position at Y coordinates.

8.2 Line

Draws lines. It supports various colors and shape of line, and can draw lines with thickness of 1~10dot.
After dropping it into screen, with left mouse pressed, draws lines with dragging.
If drags it with [Shift] key pressed, can draw vertical or horizontal lines by fix.



[Figure. Property screen of line]

(1) Line

Set color, thickness and shape of line.

Line	Explanation
Line Color	Sets color of line using color palette.
Line Width	Selects thickness of line out of 1~10dot.
Line Style	Selects shape of line from list below. <div></div>

(2) Position/size

Displays the values at X/Y coordinates which line is positioned, and set the values in person.

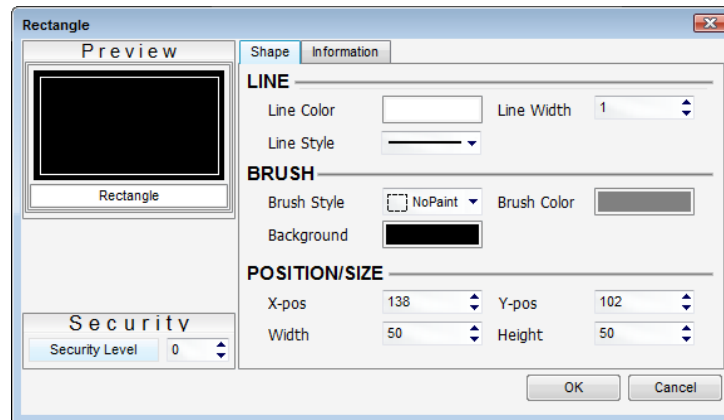
Position/size	Explanation
Start X	Set X coordinates position of starting point of line.
Start Y	Set Y coordinates position of starting point of line.
End X	Set X coordinates position of ending point of line.
End Y	Set Y coordinates position of ending point of line.

8.3 Rectangle/RoundRec

Draw rectangle or round rectangle with round corners.

After dropping it into screen, with left mouse pressed, draws lines with dragging.

If drags it with [Shift] key pressed, can draw a regular rectangle.



[Figure. Property screen of Rectangle]

8.3.1 Rectangle

(1) Line

Set color, thickness and shape of line composing of Rectangle.

Line	Explanation
Line Color	Sets color of line using color palette.
Line Width	Selects thickness of line out of 1~10dot.
Line Style	Selects shape of line from list below. <div></div>

(2) Brush

Paints inside of square. Can give pattern by selecting two kinds of color.

Brush	Explanation
Brush Style	<p>Selects internal patterns of the square, round square from lists below.</p> <p>If sets [tile-1 ~ tile-14], color of line is applied by set color, not by [Filling color].</p>
Brush color	Sets color for part marked in black in pattern o f[Painting method].
Background	Sets color for part marked in white in pattern o f [Painting method].

(3) Position/size

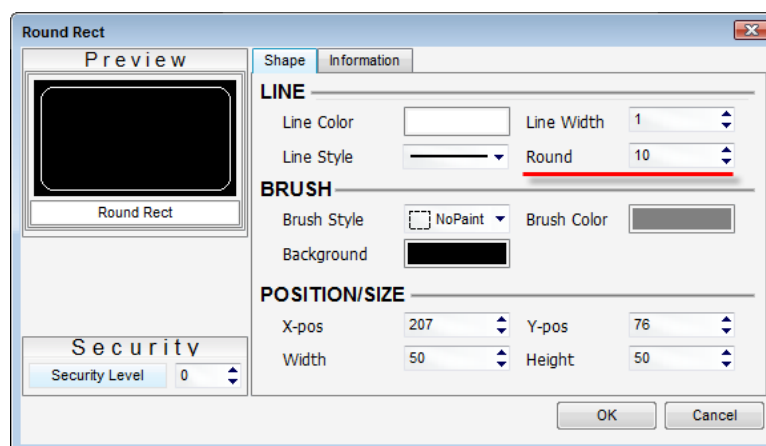
Displays the values at X/Y coordinates which line is positioned, and set the values in person.

Position/size	Explanation
X pos	Sets X coordinates position of the rectangle, round rectangle.
Y pos	Sets Y coordinates position of the rectangle, round rectangle.
Width	Sets width of the rectangle, round rectangle.
Height	Sets height of the rectangle, round rectangle.

8.3.2 Round Rec

Setting is the same as the Rectangle, setting items for round of corners is added.

[Round] displays the degree of round. As bigger as value is, it is round, if it is [0], the same as the Rectangle.

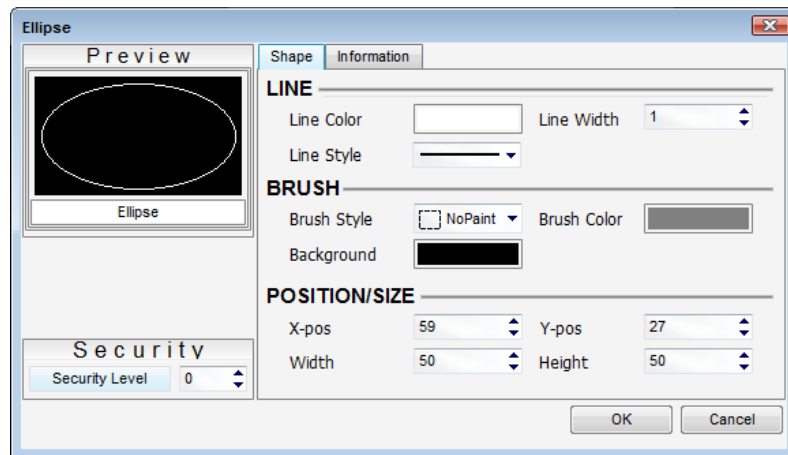


[Figure. Property of round square]

8.4 Ellipse

Draws circle and oval.

It supports various colors and type of line, can paint inside of circle using internal painting option, filling color and background color.



[Figure. Property screen of circle]

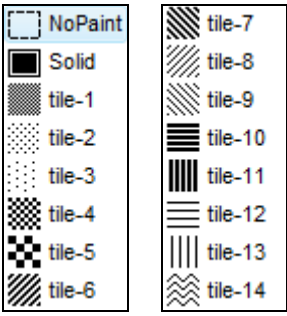
(1) Line

Sets color, thickness and shape of circle.

Line	Explanation
Line Color	Sets color of line using color palette.
Line Width	Selects thickness of line out of 1~10dot.
Line Style	Selects shape of line from list below. <div></div>

(2) Brush

Paints color inside of circle. Can give pattern by selecting two colors.

Brush	Explanation
Brush Style	<p>Selects patterns of the circle from list below.</p> <p>If sets [tile-1 ~ tile-14], color of line is applied by set color, not by [Filling color].</p> 
Brush Style	Sets color for part marked in black in pattern of [Painting method].
Background	Sets color for part marked in white in pattern of [Painting method].

(3) Position/size

Displays the values at X/Y coordinates which line is positioned, and set the values in person.

Position/size	Explanation
X pos	Sets X coordinates position of the circle.
Y pos	Sets Y coordinates position of the circle.
Width	Sets the width of the circle.
Height	Sets the height of the circle.



Note

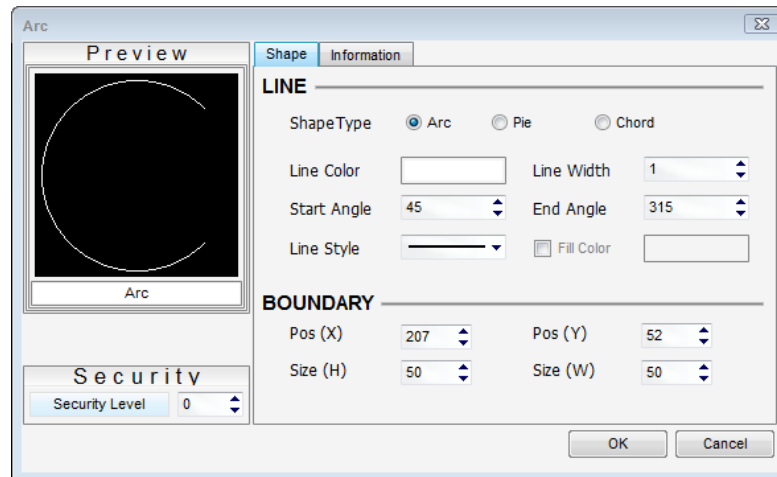


After pressing the icon above, when draws figures, center is the starting point. Especially, in case of drawing garden, it is useful option.

8.5 Arc, Pie, Chord

Draws Arc, pie and chord. It supports various colors and types of line and can display various shapes by setting an angle.

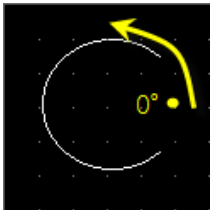
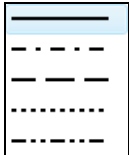
With left mouse pressed, Can regulate the size with dragging.



[Figure. Property screen of arc, pie and chord]

(1) Line

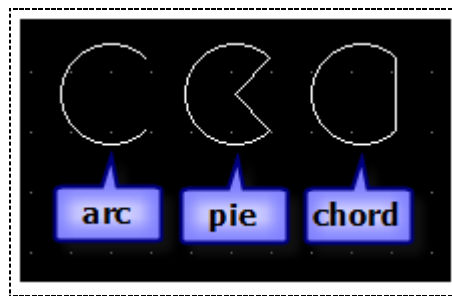
Selecting shape of figure, changes arc, pie and chord, and set color, thickness and shape of lines.

Line	Explanation	
Shape Type	Selects arc, pie and chord.	
Line Color	Sets color of line using color palette.	
Line Width	Set thickness of line out of 1~10dot.	
Start Angle	Input the angle of upper ending point.	
End Angle	Input the angle of bottom ending point.(ending angle) .	
Line Style	Selects shape of line from list below. 	
Fill Color	Set color for inside of pie and chord. Arc is not supported	

(2) Boundary

Displays the values of X/Y coordinates Arc, pie and chord are placed currently, and can set the value in person.

Boundary	Explanation
Pos(X)	Set X axis position of arc, pie and chord.
Pos(Y)	Set Y axis position of arc, pie and chord.
Size(H)	Set height of arc, pie and chord.
Size(W)	Set width of arc, pie and chord.

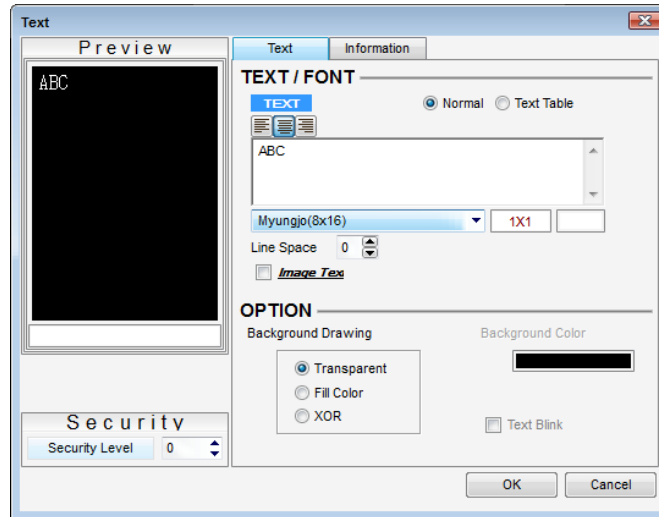


[Figure. Arc, Pie, Chord]

8.6 Text

Set text.

Displays characters using font of inside of touch screen and various kinds of fonts from windows.



[Figure. Property screen of text]

(1) Text/Font

Input characters, and set font and size.

Text/font	Explanation
General	Displays input characters as font of inside of touch screen
Multiple language table	Selects and uses character line registered in [Multiple language table].
Image character	Inputs characters are applied to fonts built in windows of PC. Transmits it to touch screen converting image internally.

(2) Option

Set background property to characters and blinking effects.

Background property is as followings.

Option	Explanation
Transparent	Displays background of characters in transparent.
Filli Color	Uses colors in background of characters. Sets colors in [Background color]. In case of setting [Filling color], can use [Blink] effects. [Blink] is emphasizing effects making character line appear and disappear with interval of 0.5 second.
XOR	If background color of character and figure of background are overlapped, color is displayed with XOR(reversed). Sets color to XOR(reverse) in [Background color].

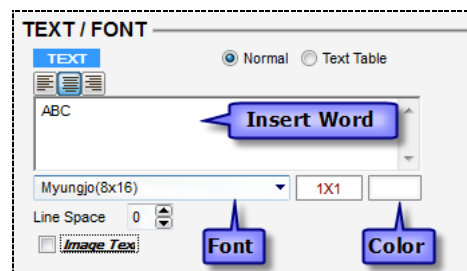
(3) Set character input

There are three methods to input characters, [General], [Image character] and [Text Table].

- General characters

Displays characters using fonts of inside of touch screen.

Inputs characters to character input part, and set detailed property.



[Figure. General characters]

General characters	Explanation
Sorting	Selects one out of left, right and center sorting.
Insert Word	Inputs characters to display.
Font	Selects font of characters to display from below list.
Size of characters 	Enlarges size of width/length as much of doubled angle as font selected from fonts.
Color	Set color of characters.
Line Space	When character line is input more than 2 lines, set gaps between characters.

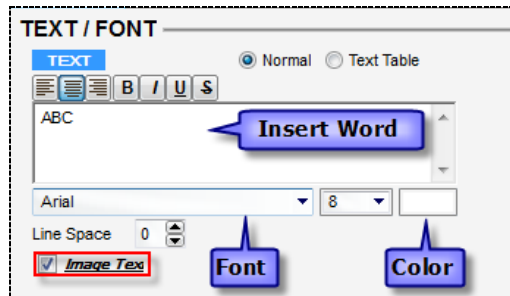
- Image characters

Displays characters using fonts of PC windows.

So, it can be expressed more variously than general characters.

It transmits it to touch screen converting it to image internally.

As figure, inputs characters after checking [Image Text].



[Figure. Image character]

How to use is the same as [General], input of character size is changed and **B** *I* U ~~S~~ items are added.

Display property	Explanation
B	Displays characters in bold.
<i>I</i>	Displays characters with slant.
<u>U</u>	Displays characters underlined.
S	Displays cancel line passing middle of characters.

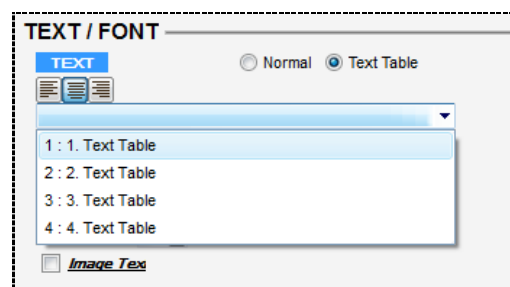
- Text Table

Selects and displays character line registered in Text Table.

If wants to use Text Table, has to set [Project]–[Text Table] of menu first.

(Refer to [7.3] of [Chapter 7] regarding [Text Table].)

If selects [Text Table], it is changed as below figure. Selects and uses character line from list.

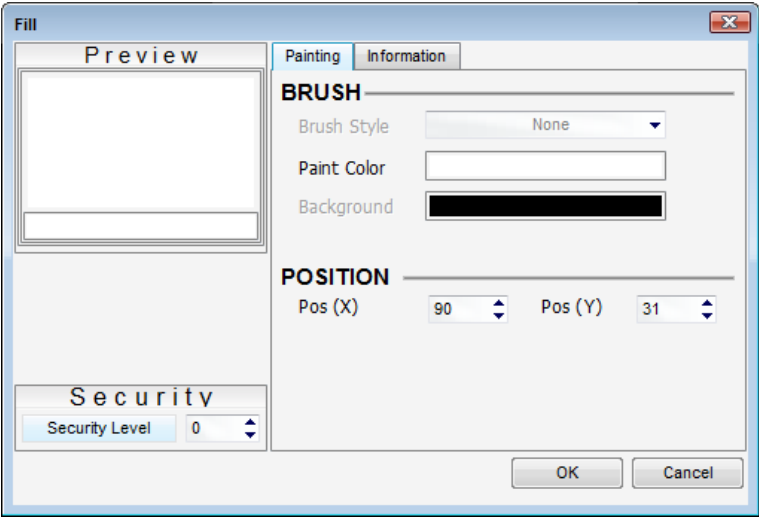


[Figure. Text Table character]

8.7 Fill

Paints the closed area color.

Paints color after registering in figures of closed area, figure or picture of closed area composing of lines.



[Figure. Property screen of Fill]

(1) Brush

Sets color to use for [Pint Color].

(2) Position

Displays values of X/Y coordinates which brush is placed currently, and sets the values in person.

Position/size	Explanation
Pos(X)	Sets X coordinates position of fill.
Pos(Y)	Sets Y coordinates position of fill.



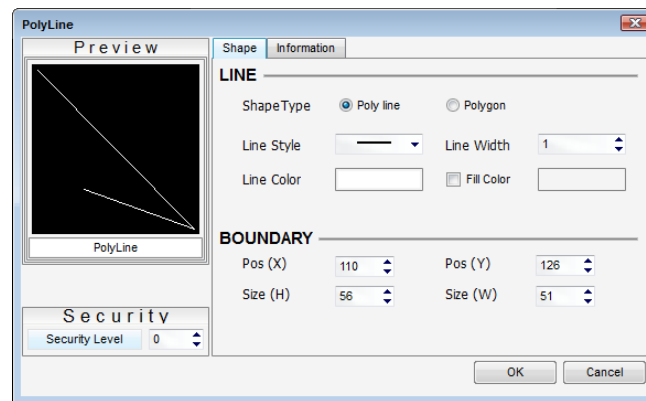
Note Has to register [Fill] after drawing the closed area. [Brush] works normally when the closed area is created in advance.

8.8 PolyLine, Poligon

Registers PolyLine/figure in screen. If draws dots in serial, PolyLine linking the dots and Poligon connecting ending dot with starting dot are drawn.

After drawing the desired PolyLine or Poligon by clicking left button of mouse to screen a couple of times.

Dots are marked with yellow tracker. These trackers can be changed by dragging.



[Figure. Property screen of PolyLine]

(1) Line

Sets color, thickness and shape of line composing of PolyLine and Poligon.

Line	Explanation
Shape Type	Selects PolyLines and Poligon
Line Style	Selects shape of line from list.
Line Width	Selects thickness of line from 1~10dot.
Line Color	Sets color of line using color palette.
Fill Color	Sets color of Poligon inside

(2) Boundary

Displays values and sizes of X/Y coordinates which PolyLine and figure are positioned currently, and can set values in person.

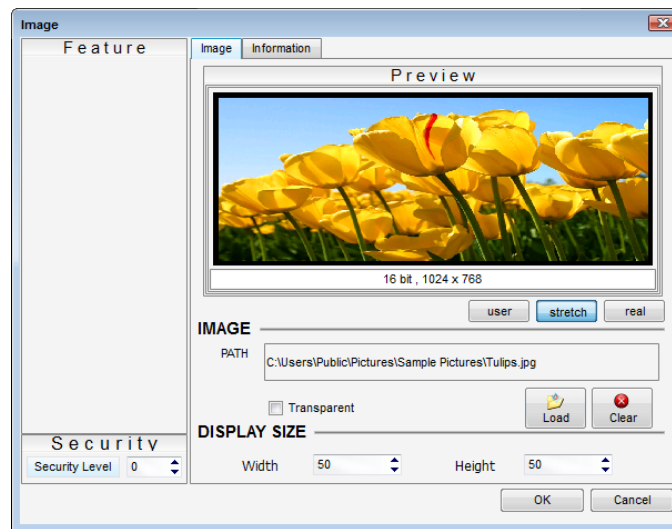
Boundary	Explanation
Pos(X)	Sets X coordinates position of PolyLine and figure.
Pos(Y)	Sets Y coordinates position of PolyLine and figure.

Size(H)	Sets height of PolyLine and figure.
Size(W)	Sets width of PolyLine and figure.

8.9 Image

Registers images(bitmap, jpg, jpeg).

Displays the images saved in PC into screen with the desired size.



[Figure. Property screen of image]

(1) Preview

Shows the registered images in preview.

Preview	Explanation
User	Displays image size registered in preview screen optimizing [DISPLAY SIZE].
Stretch	Displays images matching to entire size of preview by enlarge.
Real	Displays images with original resolution in preview.

(2) Images

Imports the images saved in PC, or delete the imported images.

Image	Explanation
PATH	Displays the route of imported images.
Transparent	Displays background of images in transparent. If uses transparent mark, it gets transparent because black parts of bitmap is not displayed.
Load	Imports images using [Load Image] screen.
Clear	Deleted the imported images.

(3) Display size

Displays size of current image, and can set the values in person.

Display size	Explanation
Width	Sets width of images.
Height	Sets width of images.

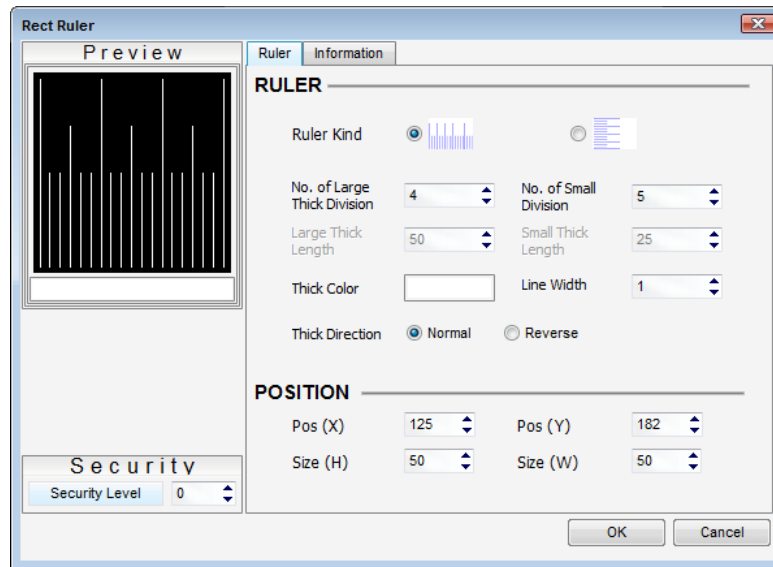
8.10 Rect Ruler

Registers Rect Ruler.

It is used when draws the graduation in width and length, and used in graph.

Can controls size of graduated ruler by dragging with left button of mouse pressed.

If drags it with [Shift] key of keyboard pressed, can draw graduated ruler which forms the shape of square.



[Figure. Property screen of Rect Ruler]

(1) Ruler

Sets the shape, direction, color and thickness of graduation.

RULER	Explanation
Ruler Kind	Selects one out of horizontal graduation or vertical graduation.
No.of Large Thick Division	Inputs number of big graduation to insert in designated boundary.
No.of Small Division	Inputs number of small graduation to insert in designated boundary.
Large Thick Length	Because length of large graduation is used with Circle Ruler, it gets inactivated.
Small Thick Length	Because length of small graduation is used with Circle Ruler, it gets inactivated.
Thick Color	Selects color of lines composing of graduated ruler.
Line Width	Selects thickness of line out of 1~10dot.
Thick Direction	In case of horizontal graduated ruler, direction of graduation is upward. In case of vertical, it is left and right direction.

(2) Position

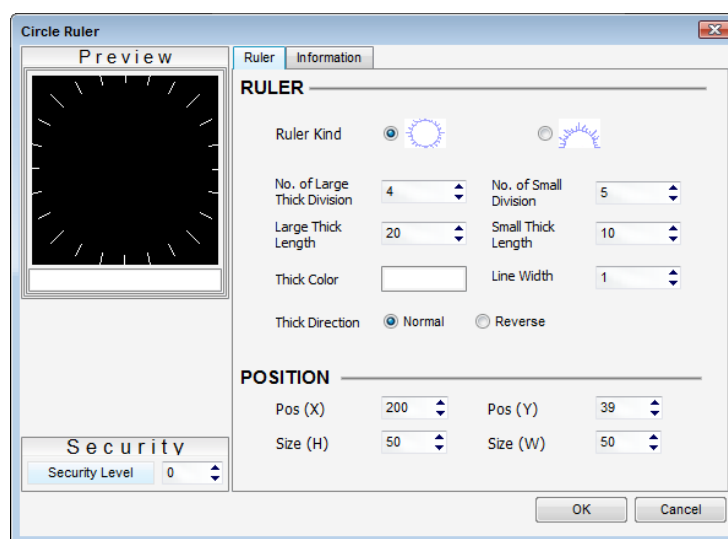
Displays values and sizes of X/Y coordinates which PolyLine and figure are positioned currently, and can set values in person.

Position	Explanation
Pos(X)	Sets X coordinates position of Rect Ruler.
Pos(Y)	Sets Y coordinates position of Rect Ruler.
Size(H)	Sets height of Rect Ruler.
Size(W)	Sets width of Rect Ruler.

8.11 Circle Ruler

Registers Circle Ruler in screen. It is used when draws circle or half-circle, and used in graph.

Can control size of graduated ruler by dragging with left button of mouse pressed, can draw the graduated rulers in shape of circle only if drags with [Shift] key of keyboard pressed.



[Figure. Property screen of Circle Ruler]

(1) Ruler

Sets the shape, direction, color and thickness of graduation.

Graduation	Explanation
Ruler Kind	Selects one out of Circle Ruler or half-circle graduated ruler.
No.of Large Thick Division	Sets how many number of graduation in the circle to be set.
No.of Small Division	Sets how many number of small graduation to insert between big graduations.
Large Thick Length	Sets the length of big graduation.
Small Thick Length	Sets the length of big graduation.
Thick Color	Sets color of lines composing of graduated ruler.
Line Width	Sets thickness of line to 1~10dot.
Thick Direction	Selects direction of graduation to inside or outside of circle.

(2) Position

Displays values and sizes of X/Y coordinates which PolyLine and figure are positioned currently, and can set values in person.

Position	Explanation
Pos(X)	Sets X coordinates position of Circle Ruler.
Pos(Y)	Sets Y coordinates position of Circle Ruler.
Size(H)	Sets height of Circle Ruler.
Size(W)	Sets width of Circle Ruler.

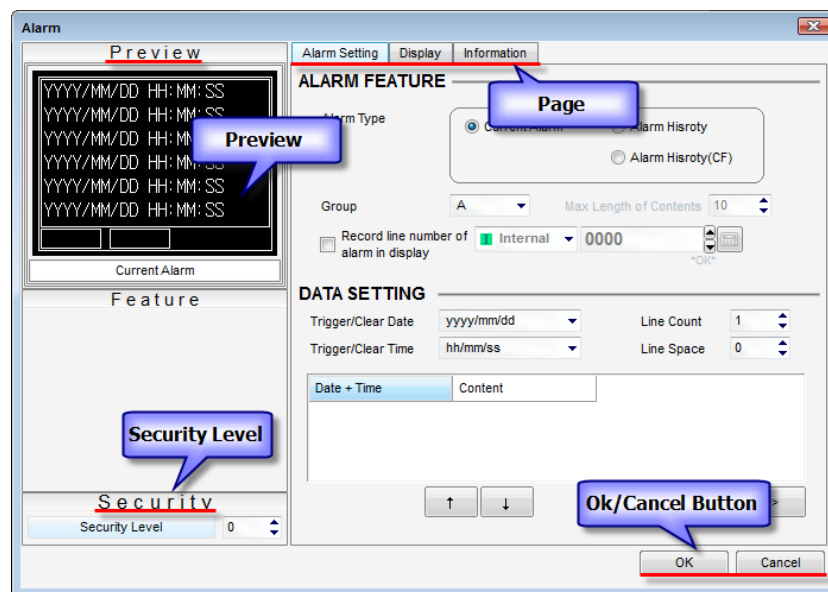
CHAPTER 9 Tag common setting

CHAPTER 9 – Tag common setting

Read well tag common setting before painting pictures using tag, and use it in correct way.

9.1 Screen composition of tag

Property screen of tag is composed at right side of each page, and there are preview and security setting function at left and [OK] and [Cancel] buttons at below.



[Figure. Screen property of tag]

9.1.1 Information page

It has the separate page composition per tag. But, [Information] page showing information of tag is common for all. So, explains [Information] page in tag common setting.

[Information] page shows the registered information of tag. It displays the registered screen number, tag ID, creating time and edit time and position and size information, and can edit position and size information.

The screenshot shows a software window titled 'Information'. Inside, there's a section labeled 'INFORMATION'. It contains several data entry fields: 'Screen No.' (1), 'Tag ID' (19), 'Create time' (2010-08-27 14:31:48), 'Modified time' (2010-08-27 14:31:48), 'Position (X)' (283), 'Position (Y)' (39), 'Size (W)' (280), and 'Size (H)' (150). Each of these fields has a small up/down arrow icon next to it. At the bottom, there's a 'Memo' label followed by a large empty text box.

[Figure. Information page]

Information	Explanation
Screen number	Screen number which tag is registered
Tag ID	ID of tag. ID is marked number which figure and tag are registered in sequence.
Create time	Time which tag is registered in screen first.
Modified time	Time which tag is edited last time.
Position (X)	X coordinates of [Left upper] position where tag is registered in screen
Position (Y)	Y coordinates of [Left upper] position where tag is registered in screen
Size(W)	Width of tag
Size(H)	Height of tag
Memo	Can write memo about tag information.

9.1.2 Preview

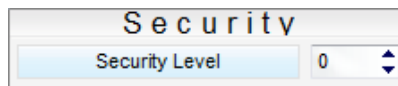
Shows it in [Preview] as the same as the shape registered in actual edit screen along setting in tag property screen. In order to check one changed property, without needing to check in actual edit screen,

9.1.3 Security Level

Can set security level each to all figures and tags.

Security level can be set in [Password setting] of [Project] menu.

(Refer to [7.10] of [Chapter 7] regarding security setting.)



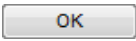
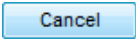
[Figure. Security level]

It can be applied when password is set per level in [Security setting].

Security level [0] is the status which security is not set. If inputs more than value [1] as security level, it is the same as input value at security level, or the tag is shown when logged-in with bigger level logging. If it is not logged-in, the tag is now displayed in screen.

9.1.4 OK/Cancel buttons

There are OK/Cancel buttons at right bottom of property screen.

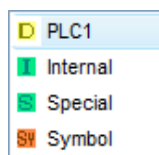
Button	Explanation
	After all setting, contents of property is saved if confirm button is pressed
	Contents of property before opening property screen is kept because the changed contents of property after opening property screen is not saved but cancelled.

9.2 Input address

How to set address in design project.

9.2.1 Types of address

Address is specified largely by 4 types such as PLC address, internal address of touch screen, special address and symbol address.



[Figure. Types of address]

Address	Explanation
PLC	[D] stands for Device.
Internal	[I] stands for Internal Address.
Special	[S] stands for Special Address.
Symbol	[SY] stands for Symbol Address.

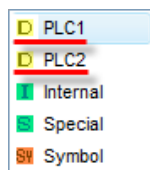
(1) PLC address

Address of PLC communicating with touch screen

- Name of PLC

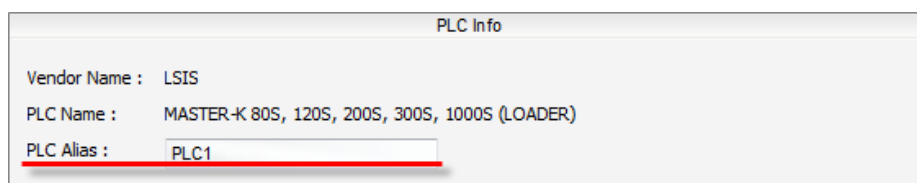
One touch screen can be connected with multiple PLC.

If connected with multiple PLC, it is set as a way of [PLC1], [PLC2], [PLC3],... basically as below figure.



[Figure. PLC name]

Name of PLC can be changed in [PLC Alias] of [PLC Info] if selected each PLC in [Project]–[Project Property].



[Figure. Change name of PLC]

- Features of PLC address

Address of PLC has the separate boundary(recognizer), number and digits for each PLC.

Address has to be input according to address type of each PLC in design project.

For example, in case of MASTER-K 80S of LSIS, it is as following chart.

Recognizer	Range of using address	Digit of address
P (input/out relay)	0000 ~ 015F	4
M (internal relay)	0000 ~ 191F	4
K (keep relay)	0000 ~ 031F	4
L (link relay)	0000 ~ 063F	4
F (special relay)	0000 ~ 063F	4
T (timer)	0000 ~ 1255	4
C (counter)	000 ~ 255	3
S (step relay)	00.00 ~ 99.99	5

D (data register)	0000 ~ 4999	4
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Details regarding address of each PLC are explained in separately provided [Communications manual].

When inputs PLC address, address boundary and range of address are displayed. When incorrect address is input, it displays error. Given than, it is prevented to input incorrect address.

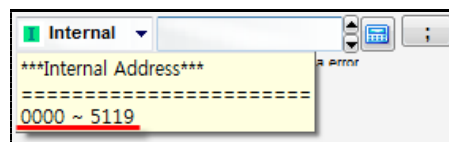
(2) Internal address

Internal address of touch screen.

Touch screen has address boundary internally.

This boundary is all composed of [16bit] unit.

Also, it does not have separate recognizer as explanation of figure below, and range of address can be used from address [0000] to [5119].

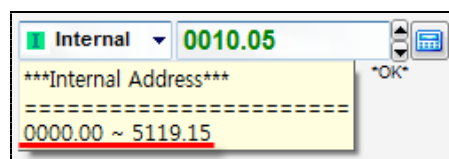


[Figure. Internal address used as word address]

In case of using it as word address, it is OK to input address itself because internal address is word unit.

In case of using it as bit address, has to input bit digit after address.

For example, input [10.5] if uses internal address [6th bit] of address [10].



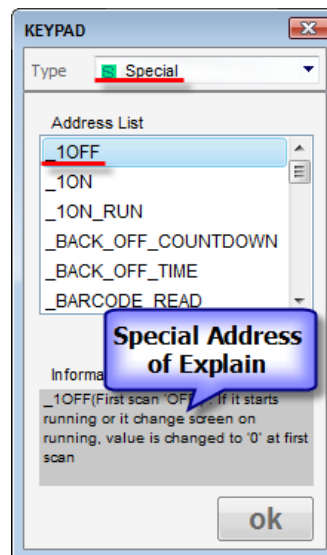
[Figure. Internal address used as bit address]

(3) Special address

Special address of internal touch screen.

Special address is the internal address for special function, and all is composed of [16bit] word unit.

Explanation on each special address is displayed at bottom if selects special address in [KEYPAD].



Special address is as followings.

No	Special address	Explanation
1	_1OFF	If touch screen starts operation or screen conversion, it becomes 0 at first scan.
2	_1ON	If touch screen starts operation or screen conversion, it becomes 0 at first scan.
3	_1ON_RUN	If touch screen starts operation, it becomes 0 at first scan.
4	_BACK_OFF_COUNTDOWN	Balanced time till turning off backlight. (minute).
5	_BACK_OFF_TIME	Set time to turn off backlight. (minute).
6	_BARCODE_READ	It becomes 1 when barcode reader reads barcode successfully.
7	_BAT_WARNING	It becomes 1 when battery needs to be replaced with battery warning.
8	_BL_BR_CONT	Brightness level of LCD. Its level consists of Step0~Step7. Set value at [LCD brightness control] in menu screen of touch screen.
9	_CF_ALARM_CAPA	Capacity alarm used in CF memory card.
10	_CF_EJECT	Sets as 1 before removing CF memory card as flag set before removing CF memory card.
11	_CF_INSERT	It becomes 1 when CF memory card is mounted onto touch screen.
12	_CF_LOGGED_CAPA_1	Capacity logging data 1 used in CF memory card (0.00%).
13	_CF_LOGGED_CAPA_2	Capacity logging data 2 used in CF memory card (0.00%).
14	_CF_LOGGED_CAPA_3	Capacity logging data 3 used in CF memory card (0.00%).
15	_CF_LOGGED_CAPA_4	Capacity logging data 4 used in CF memory card (0.00%).
16	_CF_LOGGED_CAPA_5	Capacity logging data 5 used in CF memory card (0.00%).
17	_CF_LOGGED_CAPA_6	Capacity logging data 6 used in CF memory card (0.00%).
18	_CF_LOGGED_CAPA_7	Capacity logging data 7 used in CF memory card (0.00%).
19	_CF_LOGGED_CAPA_8	Capacity logging data 8 used in CF memory card (0.00%).

20	_CN_ERR	It comes 1 when there is communications error in COM2 port under operation.
21	_CN_ERR_P2	It comes 1 when there is communications error in COM1 port under operation.
22	_CN_ERR_PE	It comes 1 when there is communications error in Ethernet under operation.
23	_COMM_BLOCK_1N_COM1	It is used when implements [1:N] communications in COM1 port. The bit position is the applied telephone exchange number. If bit is ON, it does not communicate with the applied telephone exchange number.
24	_COMM_BLOCK_1N_COM2	It is used when implements [1:N] communications in COM1 port. The bit position is the applied telephone exchange number. If bit is ON, it does not communicate with the applied telephone exchange number.
25	_COMM_STS_1N_COM1	It is used when implements [1:N] communications in COM1 port with 32bit special buffer. The bit position is the applied telephone exchange number. It displays communications status per telephone exchange number. If it is 1, it means communications error status of the applied telephone exchange number.
26	_COMM_STS_1N_COM2	It is used when implements [1:N] communications in COM1 port with 32bit special buffer. The bit position is the applied telephone exchange number. It displays communications status per telephone exchange number. If it is 1, it means communications error status of the applied telephone exchange number.
27	_DAY_OF_THE_WEEK	Day of a week set in touch screen (0–Sun, 1–Mon, 2–Tue, 3–Wed, 4–Thu, 5–Fri, 6–Sat).
28	_DOCVIEW_ALL	Number of total pages displayed in Doc viewer tag.
29	_DOCVIEW_NUM	Number of current page displayed in Doc viewer tag.
30	_FUN_KEY_VAL	(Exclusive for LSMtron) Number of function key pressed in injector.
31	_KEY_DISP32(32Bit)	It is used in key display tag, 32bit buffer for displaying input key data.
32	_KEY_DSP	It is used in key display tag, 16bit buffer for displaying input key data.
33	_KEY_ENT	If press [Enter] key in touch screen, it becomes 1.
34	_KEY_INPUT_MAX(32Bit)	Input upper value limit used in key display tag.
35	_KEY_INPUT_MIN(32Bit)	Input bottom value limit used in key display tag.
36	_LOGED_ALL_1	If logging happens as total number in logging 1, it becomes 1.
37	_LOGED_ALL_2	If logging happens as total number in logging 2, it becomes 1.
38	_LOGED_ALL_3	If logging happens as total number in logging 3, it becomes 1.
39	_LOGED_ALL_4	If logging happens as total number in logging 4, it becomes 1.
40	_LOGED_ALL_5	If logging happens as total number in logging 5, it becomes 1.
41	_LOGED_ALL_6	If logging happens as total number in logging 6, it becomes 1.

42	_LOGED_ALL_7	If logging happens as total number in logging 7, it becomes 1.
43	_LOGED_ALL_8	If logging happens as total number in logging 8, it becomes 1.
44	_LOGED_ALL_CLR_1	If it is value other than 0, erase all data of logging 1. After erasing logging data, it becomes 0 automatically.
45	_LOGED_ALL_CLR_2	If it is value other than 0, erase all data of logging 2. After erasing logging data, it becomes 0 automatically.
46	_LOGED_ALL_CLR_3	If it is value other than 0, erase all data of logging 3. After erasing logging data, it becomes 0 automatically.
47	_LOGED_ALL_CLR_4	If it is value other than 0, erase all data of logging 4. After erasing logging data, it becomes 0 automatically.
48	_LOGED_ALL_CLR_5	If it is value other than 0, erase all data of logging 5. After erasing logging data, it becomes 0 automatically.
49	_LOGED_ALL_CLR_6	If it is value other than 0, erase all data of logging 6. After erasing logging data, it becomes 0 automatically.
50	_LOGED_ALL_CLR_7	If it is value other than 0, erase all data of logging 7. After erasing logging data, it becomes 0 automatically.
51	_LOGED_ALL_CLR_8	If it is value other than 0, erase all data of logging 8. After erasing logging data, it becomes 0 automatically.
52	_LOGED_CUR_BL_1	It displays number of current logging of logging 1.
53	_LOGED_CUR_BL_2	It displays number of current logging of logging 2.
54	_LOGED_CUR_BL_3	It displays number of current logging of logging 3.
55	_LOGED_CUR_BL_4	It displays number of current logging of logging 4.
56	_LOGED_CUR_BL_5	It displays number of current logging of logging 5.
57	_LOGED_CUR_BL_6	It displays number of current logging of logging 6.
58	_LOGED_CUR_BL_7	It displays number of current logging of logging 7.
59	_LOGED_CUR_BL_8	It displays number of current logging of logging 8.
60	_LOGED_ONE_1	Whenever logging happens once in logging 1, it comes 1.
61	_LOGED_ONE_2	Whenever logging happens once in logging 1, it comes 1.
62	_LOGED_ONE_3	Whenever logging happens once in logging 3, it comes 1.
63	_LOGED_ONE_4	Whenever logging happens once in logging 4, it comes 1.
64	_LOGED_ONE_5	Whenever logging happens once in logging 5, it comes 1.
65	_LOGED_ONE_6	Whenever logging happens once in logging 6, it comes 1.
66	_LOGED_ONE_7	Whenever logging happens once in logging 7, it comes 1.
67	_LOGED_ONE_8	Whenever logging happens once in logging 8, it comes 1.
68	_MULTI_HOLD_RUN	If sets [1] when implements [N:1], enables PLC to communicate with the touch screen only.
69	_MULTI_HOLD_STS	When implements [N:1] communications, if there is touch screen out of connected one which is ON status, it becomes [1].
70	_MULTI_LANG	Can change type of language set in multiple language table.

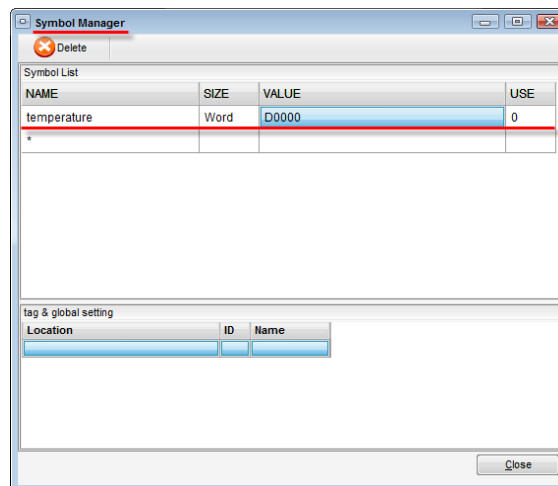
		<p>If it is [0], language of first column in multiple language table is displayed,</p> <p>If it is [1], language of second column in multiple language table is displayed.</p>
71	_MULTILINK_KEYHOLD	In communications with Ethernet [N:1], if it is [1], makes touch disable.
72	_NETVIEW_CONTROL_IP1	Address of IP1 when uses remote control.
73	_NETVIEW_CONTROL_IP2	Address of IP2 when uses remote control.
74	_NETVIEW_CONTROL_IP3	Address of IP3 when uses remote control.
75	_NETVIEW_CONTROL_IP4	Address of IP4 when uses remote control.
76	_NETVIEW_CONTROL_LOCK	If it is [1], makes remote control disable.
77	_NETVIEW_SERVICE	When using remote control, it does monitoring only if it is [0]. If it is [1], it does remote control.
78	_OFF	It always becomes 0 when touch screen is under operation.
79	_ON	It always becomes 1 when touch screen is under operation.
80	_PARM_CUR_BLOCK	Current block number of recipe is in it.
81	_PARM_DEFAULT_LD	<p>If it is not [0], loads recipe data of design project onto memory of touch screen. If finishes load, it becomes 0 automatically.</p> <p>Recipe data is executed once automatically when downloads project file to touch screen.</p>
82	_PARM_FILE_ERR	If error happens during moving recipe block, it becomes 1.
83	_PARM_RESTORE	If it is not [0], whenever working boundary(target address) is changed, data of current working boundary is saved in memory of touch screen. It is used when always wants to use current working data next time.
84	_PARM_SAVE	If it is not [0], values of current working boundary(target address) are saved in memory of touch screen. If finishes saving, it becomes 0 automatically.
85	_PORT_IN	(Exclusive for LSMtron) It displays LED blinking status when uses I/O option module.
86	_PORT_OUT	(Exclusive for LSMtron) LED output buffer of output power TOP6L such as AUX(Optional board).
87	_RECIPE_FINISHED	If finishes operation of writing recipe data in target address, it becomes [1].
88	_RTC_DAY	Date data of touch screen RTC (BCD 1~31).
89	_RTC_DAYOFWEEK	Day of a week set in touch screen (0~Sun, 1~Mon, 2~Tue, 3~Wed, 4~Thu, 5~Fri, 6~Sat).
90	_RTC_HUR	Visual data of touch screen RTC (BCD 0~23).
91	_RTC_MIN	Visual data of touch screen RTC (BCD 0~59).
92	_RTC_MTH	Visual data of touch screen RTC (BCD 1~12).
93	_RTC_SEC	Visual data of touch screen RTC (BCD 0~59).
94	_RTC_YER	Year data of touch screen RTC (BCD 1999~2098).
95	_RUN_OUT	If it is value other than [0], operating screen is terminated and moves to menu screen.

96	_SCR_NUM	Current screen number is saved. If inputs screen number to change, it converts screen.
97	_SCR_NUM_READ	Current screen number is saved. Cannot write it with read-only buffer.
98	_SCR_SVE	If is not [0], backlight is turned off, if it is [0], it is turned on. When backlight is turned off, backlight is turned on, and value becomes 0 when touches touch screen.
99	_SCR_SVE_STATE	0: Backlight On status, 1: Screen save status
100	_SECURITY_LEVEL	Keep saving security level of current screen.
101	_STN_BR_CONT	LCD brightness level (limited to STN models only)
102	_STOG	As scan reversion, whenever each scan during operation, it reverses 0→1, 1→0.
103	_T1S	Counts [0 ~ 65535] per each second during operation.
104	_TOUCH_PRESSED	When presses Touch tag and key display tag, turns bit number 0 ON.
105	_USB_INSERT	If it is connected with USB host, it becomes [1].

(4) Symbol address

Symbol address is the replaced address with other name.

Grants other name to other address in [Symbol Manager] of [Project] menu.



[Figure. Address register in symbol manager]

Designates address with newly-granted name.

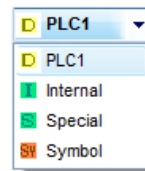


[Figure. Input symbol address]

After registering name called [Temperature] at address [D0000] in symbol manager, registers symbol address as [Temperature] as above. (☞ Refer to [7.11] of [Chapter 7] regarding Symbol Manager.)

9.2.2 Input of address using keyboard

Inputs address using keyboard in person. First, selects [Types of address] in combo box.

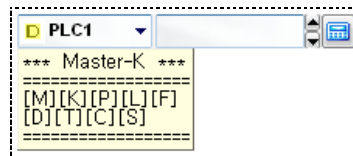


[Figure. Types of address]

Then, input address according to selected type of address.

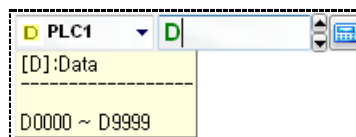
(1) Automatic display function

It displays address boundary, address range, digits of address with popup explanation automatically.
If address input window is empty, displays usable address boundary.



[Figure. Address boundary automatic display]

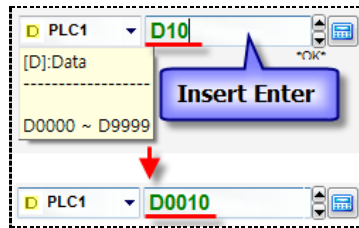
If selects address boundary, brief explanation on selected address boundary and range of usable address are displayed.



[Figure. Range automatic display of address]

Input address according to range of usable address.

After input address, if press [ENTER] key of keyboard, digits of address is matched automatically.



[Figure. Automatic digit matching function of address]

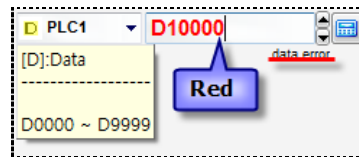
(2) Error automatic display function

If correct address is input, address turns to green, and it is displayed as [OK] at bottom.



[Figure. When inputs correct address]

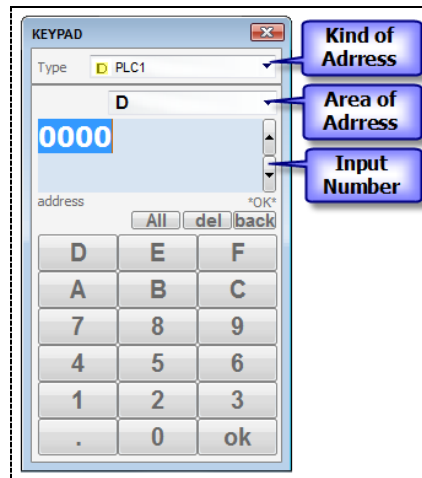
If incorrect address is input, address is displayed in red showing [data error] below to prevent incorrect address.



[Figure. When incorrect address is input]

9.2.3 Address input using address input unit

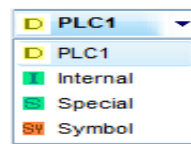
Input address using button() looks like calculator which is positioned at right of address input part.



[Figure. Address input unit]

(1) Address input sequence

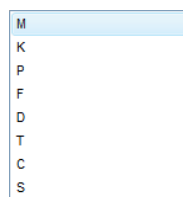
First, selects [Type of address].



[Figure. Type of address]

Then, selects [Address boundary] according to selected type of address.

If selects type of address, address boundary is composed of list automatically.



[Figure. Address boundary]

If selects [Type of address] with PLC, address boundary of the PLC is listed in [Address boundary] automatically and displayed in combo box as the figure above.

Lastly, inputs address according to the range of address and number of digits. Input address using keyboard or number keypad at bottom. As the same as address input in address input unit, if input address, displays if it matches to type of address.

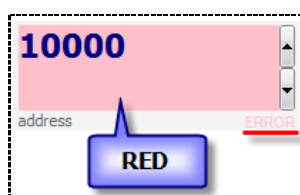
(2) Error display

If inputs correct address, it displays [OK] under address input window.



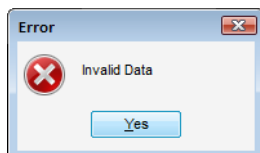
[Figure. When inputs correct address]

If inputs incorrect address, it displays background of address in red, it prevents incorrect address to be input showing [ERROR] under address input window.



[Figure. When inputs incorrect address]

Also, if press [OK] button in status of input incorrect address, error message appears.



[Figure. Error message]

(3) Input button

Buttons to input address.

Button	Explanation
All	Selects all address which were input
del	Deletes selected address number.
back	Same as function of backspace, deletes input address one by one.

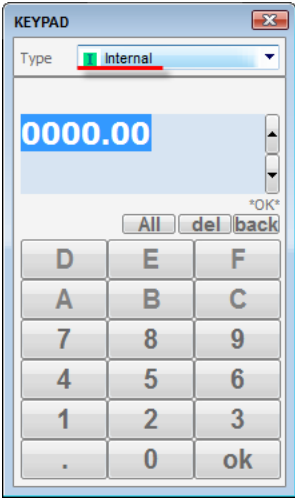
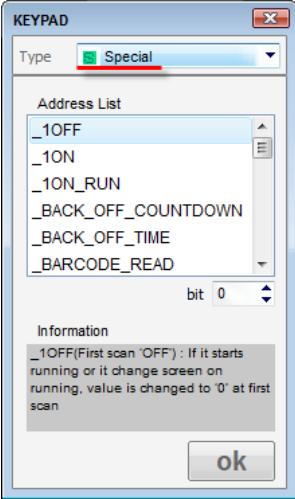
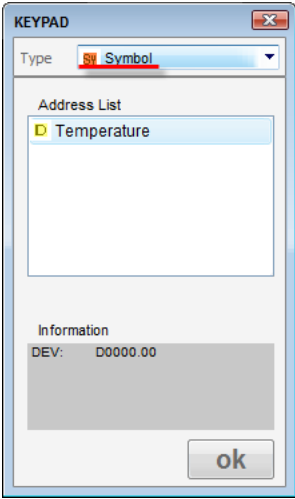
D	E	F
A	B	C
7	8	9
4	5	6
1	2	3
.	0	ok

[Figure. Number keypad of address input unit]

Number keypad	Explanation
A ~ F	Key to input hexadecimal data
0 ~ 9	10 number keys
.	Decimal point key
ok	After address input, finishes address input by pressing [OK] button.

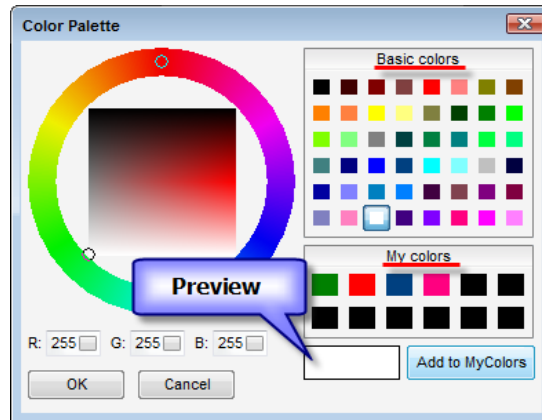
(4) Input internal/special/symbol addresses

Address input unit to input internal address/special address/symbol address is as followings.

Internal address	Special address	Symbol address
		
After input internal address number, press [OK] button.	After selecting special address, press [OK] button.	After selecting symbol address, press [OK] button.

9.3 Color Palette

When selects color, uses color palette. Can use the desire colors by registering as well as basic colors of color palette. Color palette is as followings.



[Figure. Color palette]

There are basic colors and my colors palette at right and palette which can select detailed colors with left button of mouse at left. It displays RGB values of color at right bottom.

9.3.1 Select colors from basic colors

Color palette provides with 48 kinds of basic colors.



[Figure. Basic colors]

If selects basic colors, the selected colors are displayed in the square and registered if press [OK] button. There is a part to display the selected colors at below part of color palette, can recognize the selected colors.

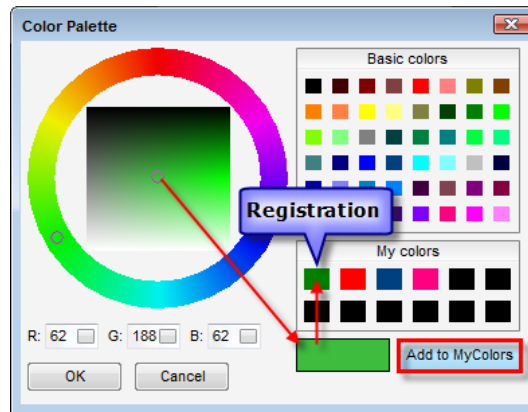


[Figure. Displays the selected colors]

9.3.2 Register/selects My colors

Can register and use the desired colors through [My colors].

(1) Register user's colors

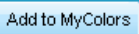


[Figure. Register user's colors]

In order to register [User's colors] in [My colors], selects user's colors after new colors to register in [My colors] with mouse. If does not select new colors to register in [My colors], new colors is registered in first column of [My colors].

User's colors is selected from large circle part at left or basic colors from [Basic colors], then selects [User's colors] with mouse in square area displayed with different brightness/chroma and same pattern based on the colors.

The selected colors can be viewed clearly through RGB data at below and [Display selected colors] part.

In order to register the selected colors in [My colors], press  button. The registered user's colors once can be used in other parts of project.

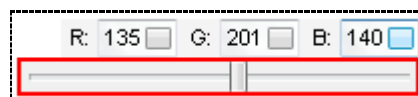
(2) Select colors from My colors

After selecting colors registered at [My colors] in project, press [OK] button.

9.3.3 Input/select RGB

Can select colors by input RGB color codes in color palette.

RGB is the codes to decide colors with combination of R = Red, G = Green and B = Blue.




[Figure. Input RGB color codes]

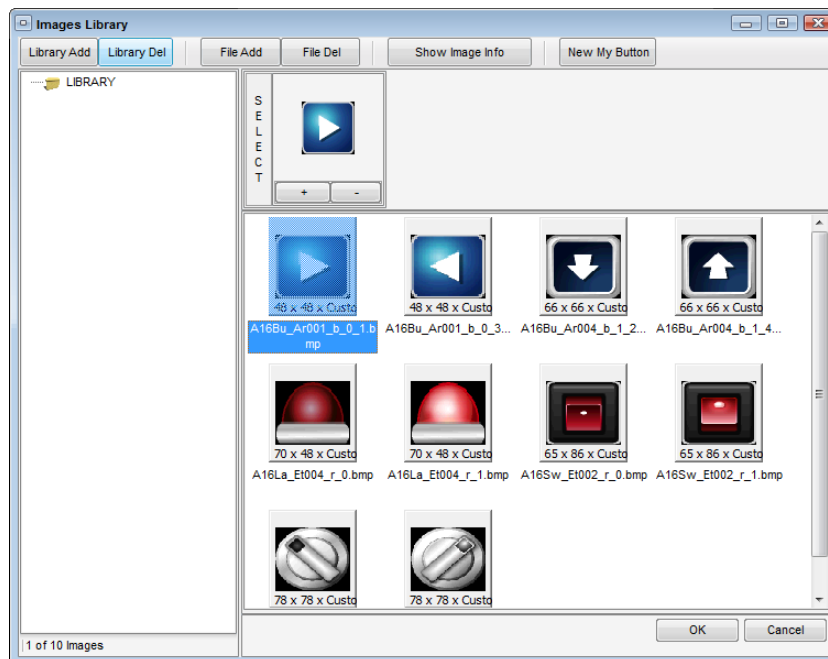
Can designate each values of RGB referring to RGB color codes.

9.4 Image Library

Uses [Image Library] when registers images in Touch tag or lamp tag.

[Image Library] enables bitmap images provided basically from XDesignerPlus program to be displayed and registered in project. Also, user can add new images and registers newly-added images in project.

[Image Library] executes [Image Library] of [Tool] menu, or displays [Image Library] if press  button in the part using bitmap of tag.



[Figure. Image Library]

9.4.1 Composition of Image Library

It shows folder of images as file manager at left.

It shows selected images and images contained in the selected folder at right.

There are buttons of [Library Add/Del], [File Add/Del], [Show Image Info] and [New My Button] at top.

(1) Folder construction

Images are in the installed routes if program is installed.

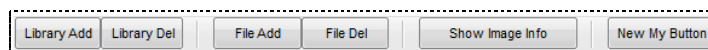
Basic route is [C:\Program Files\WM2I Corp\WXDesignerPlus\library\TrueColor].

Image provides with 4 kinds of folders, [Button], [Lamp], [Switch], [Industry].

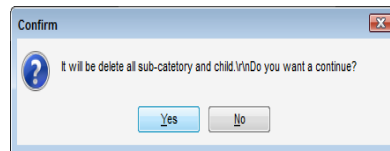
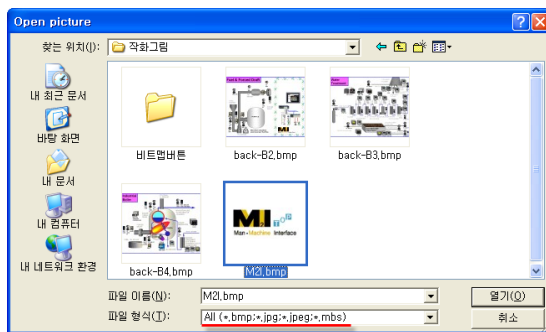
Image folder	Explanation
Button	Button image. It consists of 5 kinds, [Arrow], [Circle], [Rectangle], [Tenkey], [Tenkey(alphabet)].
Lamp	Lamp image which is lighting/putting out.. It consists of 3 kinds, [Circle], [Rectangle] and [Etc].
Switch	ON/OFF switch image. It consists of 3 kinds, [Toggle], [Selector] and [Etc].
Industry	Images of industrial parts. It consists of [Pipe] and [Valve], and [Pipe] consists of [Pipe001], [Pipe002] and [Pipe003] according to size.

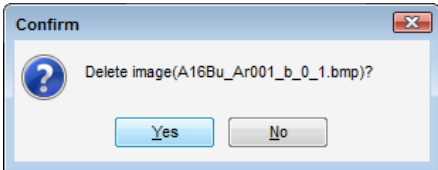
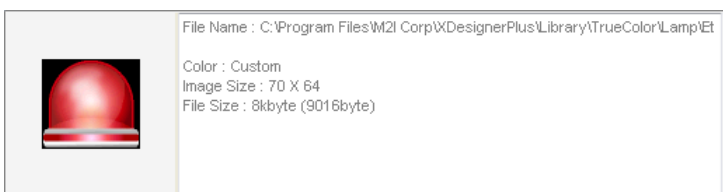
They are all the same pictures in each folder, but they are divided into 5 kinds of colors, [blue], [green], [mono], [red] and [yellow] folders.

(2) Upper buttons



[Figure. Upper buttons]

Button	Explanation
Library Add	Adds new folder in the selected folder.
Library Del	Deletes selected folder. When deletes folder, subfolders and images in the folders are deleted together; confirmation message is displayed as following. 
File Add	Add new images in the selected folder. If press add image button, [Open picture] window to select images to add appears. Types of images which can be registered are [*.bmp], [*.jpg], [*.jpeg] and [*.mbs]. 

File Del	<p>Deletes the selected images.</p> <p>If press delete image button, confirmation message is displayed as following</p> 
Show Image Info	<p>Displays data of the selected image at right bottom.</p>  <p>Can recognize saving route, color, image size and file size of image.</p>
New My Button	<p>Enables new button to be created by executing my button maker.</p> <p>My button maker is the same as executing [My button maker] in [Tool] menu.</p> <p>(Refer to [44.7] of [Chapter 44] regarding how to use my button maker.)</p>

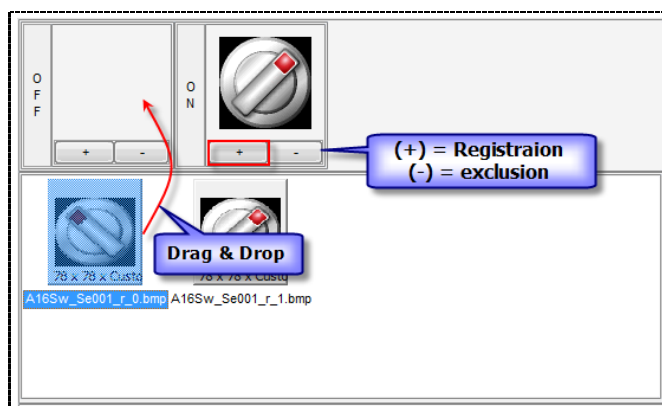
9.4.2 Register image

If selects folder, it shows images in the folder at right bottom.

Can register images to register in project out of images.

The selected images are registered with drag & drop of mouse or [+] button.

Can delete the registered images with [-] button.



[Figure. Image register]

After registering images, finishes image registering by pressing  button at bottom.

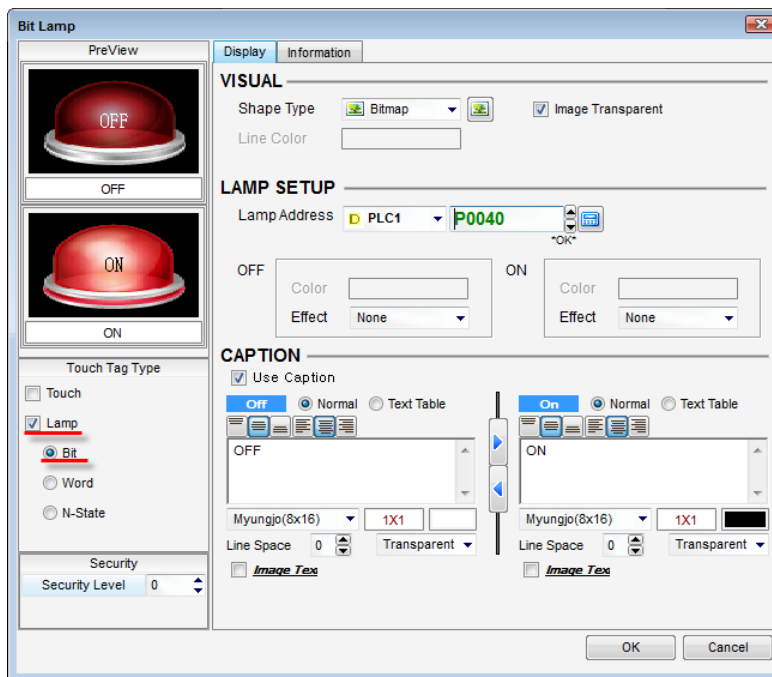
CHAPTER 10 Bit Lamp Tag

CHAPTER 10 – Bit Lamp Tag

10.1 Outline of Bit Lamp tag

Bit Lamp tag is the tag which displays ON/OFF status of set bit address with colors of circle/square shapes or blinking images.

Property screen of Bit Lamp tag.



[Figure. Property screen of Bit Lamp]

Touch tag can set the type freely.

Can set the type in [Touch tag Type] of property screen according to purpose of use.

If wants to use touch function only, checks [Touch], if wants to use lamp function only, checks [Lamp]. If wants to use both functions, checks both [Touch] and [Lamp]. In case of checking lamp function, it becomes [Bit Lamp/Word Lamp/N lamp] along selection of [Bit, word, N status].

As for Bit Lamp tag, checks [Lamp] only and selects [Bit].

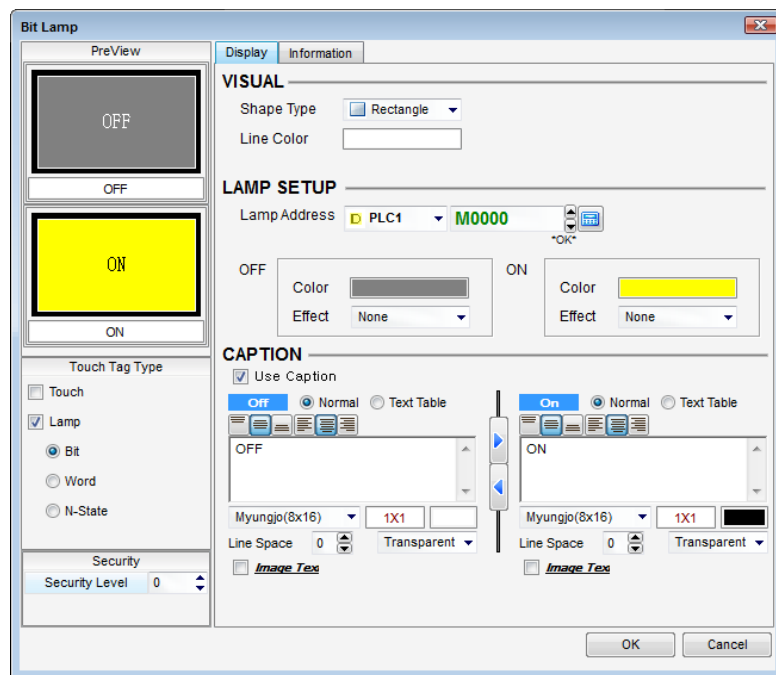
10.2 Page composition of Bit Lamp tag property screen

Bit Lamp tag property screen consists of [Display] and [Register information] pages.

Property page	Explanation
Display	Page which sets shape of lamp, address and caption.
Information	Page which displays data of Bit Lamp tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

10.3 Display page

Page which sets shape of lamp, address and caption.

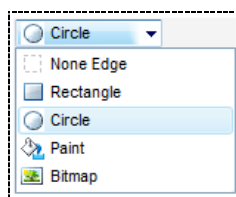


[Figure. Display page of Bit Lamp]

10.3.1 VISUAL

Sets shape of lamp by selecting Shape Type.

Types of figures are [None Edge], [Rectangle], [Circle], [Paint] and [Bitmap].



[Figure. Shape Type]

Shape Type	Explanation
None Edge	Lamp of the square without edge.
Rectangle	Lamp of the square with edge.
Circle	Lamp with circle shape.
Paint	Lamp which fills already-drawn closed figure with color only.
Bitmap	Image lamp.

(1) Figure lamp

In case of selecting [None Edge], [Rectangle], [Circle] and [Paint] as types of figures, they are called figure lamps.

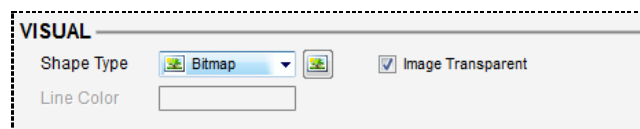
Color of line means colors of outlines.

Out of figure lamps, [Rectangle] and [Circle] set colors of lines.

Out of figure lamps, because [None Edge] and [Paint] do not have the outlines, they don't set colors of lines. So, if selects [None Edge] and [Paint] out of types of figures, parts which does not select [Color of line] is inactivated.


(2) Image lamp

In case of selecting [Bitmap] as type of figure, it is called image lamp.



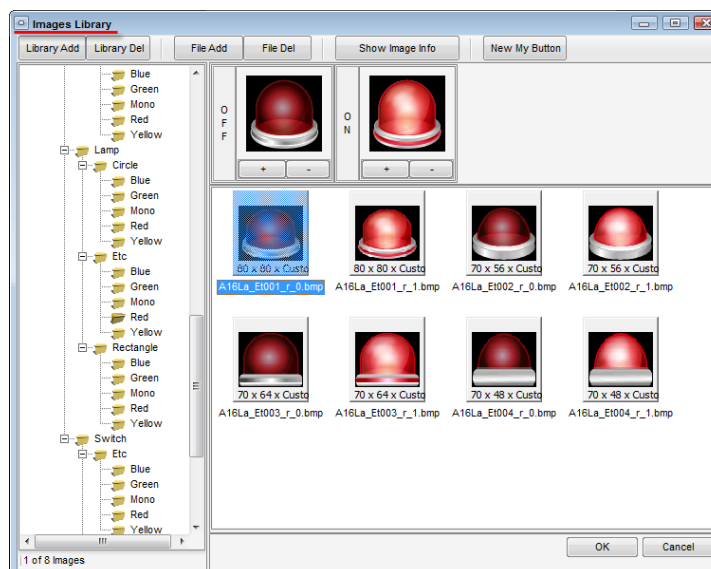
[Figure. Bitmap(image) lamp]

If selects [Bitmap] as type of figure,  button appears at right.

If clicks  button, [Image Library] is shown, and can select ON/OFF image.

Images basically provided by XDesignerPlus program and images([*.bmp], [*.jpg], [*.jpeg]) which user adds separately can be registered in [Image Library] as ON/OFF lamp image.

( Refer to [9.4] of [Chapter 9] regarding Image Library.)

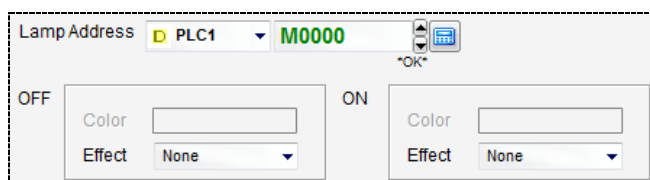


[Figure. Image Library]

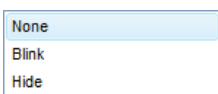
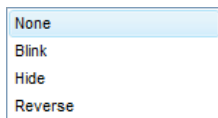
[Image Transparent] is the function which enables background color in black of registered image to be transparent when background color of screen to register is not black.

10.3.2 LAMP SETUP

Sets bit address, ON/OFF color of figure lamp and displaying effect of reversion/blinking/hiding.



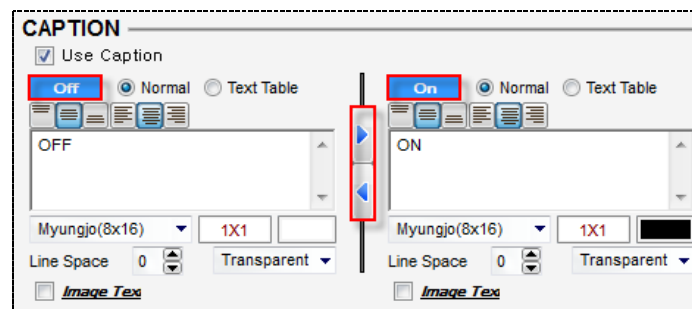
[Figure. Lamp setup]

Lamp setup	Explanation
Lamp address	Input bit address to display ON/OFF status.
OFF	Displaying color of lamp when data of lamp address is [OFF]. In case of lamp address, it sets. In case of image lamp, it gets inactivated.
ON	Displaying color of lamp when data of lamp address is [ON]. In case of lamp address, it sets. In case of image lamp, it gets inactivated.
Effect	Function of providing emphasizing effect to displaying lamp. There are effects of [Blinking], [Hiding] and [Reversion]. <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>[Figure. OFF effect]</p> </div> <div style="text-align: center;">  <p>[Figure. ON effect]</p> </div> </div>

There is no reversion effect in [Effect when OFF].	
Effects of [Blinking] and [Hiding] cannot be used simultaneously when ON/OFF.	
None	Does not use function of effect.
Blinking	<p>The lamp repeats appearing and disappearing(lightning/putting out) with interval of 0.5 second.</p> <p>If checks OFF, it repeats appearing and disappearing(lightning/putting out) when it is OFF.</p> <p>If checks ON, it repeats appearing and disappearing(lightning/putting out) when it is ON(ON lamp).</p>
Hiding	<p>Function which does not display lamp.</p> <p>If checks when it is OFF, [OFF lamp] is not displayed when it is OFF.</p> <p>If checks when it is ON, [ON lamp] is not displayed when it is ON.</p>
Reversion	As a function to emphasize ON status, it displays ON lamp and OFF lamp with interval of 0.5 second repeatedly when it is ON.

10.3.3 CAPTION

Caption is the function to write over ON/OFF lamp.



[Figure. Caption]

Left is characters displayed over OFF lamp and right is characters displayed over ON lamp.

Each can be set, and contents set in one side can be transferred to the other side using arrow buttons in the middle.

How to input is the same as the way of input [Draw]–[Text].

(☞ Refer to [8.6] of [Chapter 8] regarding how to input characters.)

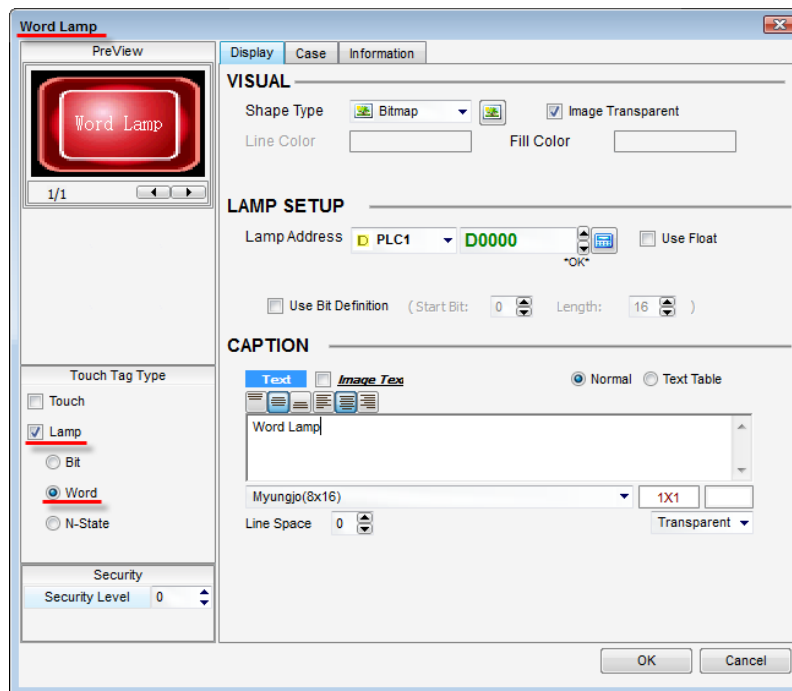
CHAPTER 11 Word Lamp Tag

CHAPTER 11 – Word Lamp Tag

11.1 Outline of Word Lamp Tag

Word Lamp tag is the tag which displays data of set word address in shape of circle/square or color or image with blinking. Word address generally means address with [16bit].

Property screen of Word Lamp Tag.



[Figure. Property screen of Word Lamp]

Touch tag can set the type freely.

Type is set in [Touch tag Type] of property screen along its purpose of use.

If wants to use touch function only, checks [Touch], if wants to use lamp function only, checks [Lamp]. If wants to use both functions, checks both [Touch] and [Lamp]. If checks lamp function, it becomes [Bit Lamp/Word Lamp/N lamp] along selection of [Bit, word, N status].

As for Word Lamp tag, checks [Lamp] only and selects [Word].

11.2 Page composition of Word Lamp tag property screen

Property screen of Word Lamp tag consists of [Display], [Case] and [Information].

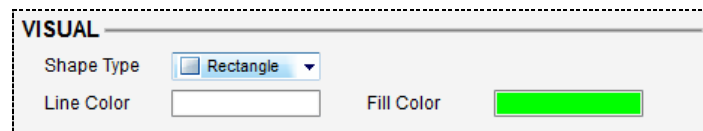
Property page	Explanation
Display	Page which sets shape of basic lamp and caption when there is no lamp address and condition.
Case	Page which sets shape of lamp and caption along condition
Information	Page which displays data of Word Lamp tag. It displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

11.3 Display page

Word Lamp tag is the tag which displays data of word address as lamp.

Inputs word address in display page and sets shape of basic lamp and caption displayed when there is no condition.

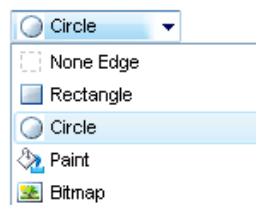
11.3.1 VISUAL



[Figure. Display setting]

Sets shape of lamp selecting type of figure.

There are [None Edge], [Rectangle], [Circle], [Paint] and [Bitmap] as types of figures.



[Figure. Shape Type]

Type of figure	Explanation
None Edge	Lamp of the square without edge.
Rectangle	Lamp of the square with edge.
Circle	Lamp with circle shape.
Paint	Lamp which fills already-drawn closed figure with color only.
Bitmap	Image lamp.

(1) Figure lamp

In case of selecting [None Edge], [Rectangle], [Circle] and [Paint] as types of figures, they are called figure lamp.

Color of line means colors of outlines.

Out of figure lamps, [Rectangle] and [Circle] set colors of lines.

Out of figure lamps, because [None Edge] and [Paint] do not have the outlines, they don't set colors of lines. So, if selects [None Edge] and [Paint] out of types of figures, parts which does not select [Line Color] is inactivated.

Filling color means internal colors of figures.

Sets basic colors when it does not meet condition set in [Case] page.

(2) Image lamp


In case of selecting [Bitmap] as type of figure, it is called image lamp.

Sets basic image when it does not meet condition set in [Case] page.



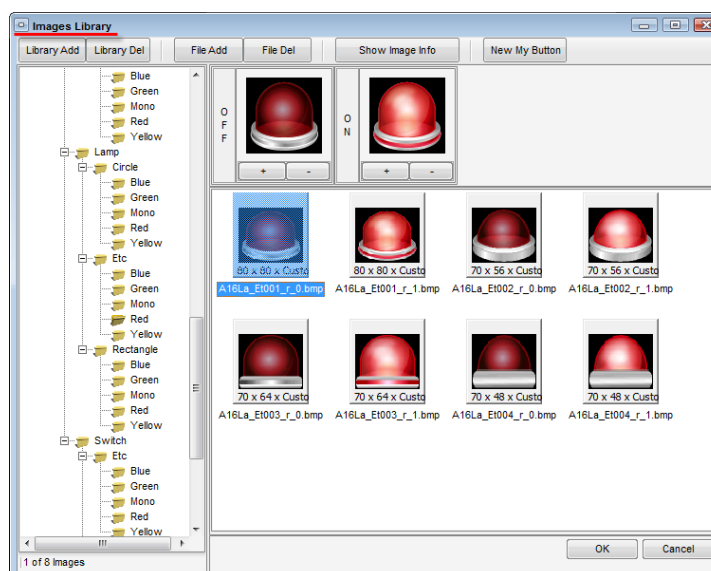
[Figure. Bitmap(image) lamp]

If selects [Bitmap] as type of figure,  button appears at right.

If clicks  button, [Image Library] is shown, and can select ON/OFF image.

Images basically provided by XDesignerPlus program and images([*.bmp], [*.jpg], [*.jpeg]) which user adds separately can be registered in [Image Library] as ON/OFF lamp image.

(☞ Refer to [9.4] of [Chapter 9] regarding Image Library.)



[Figure. Image Library]

[Image Transparent] is the function which enables background color in black of registered image to be transparent when background color of screen to register is not black.

11.3.2 LAMP SETUP

Sets address of lamp in part of lamp setting.

Given it is Word Lamp tag, and input word address.



[Figure. Lamp setup]

Lamp setup	Explanation
Use Float	<p>Can display with lamp using lamp address as [Float] and applying decimal point.</p> <p>If check [Use Float], minimum/maximum data can be added as Float type(decimal point) in [Case] page.</p> <p>[Designate effective bit] cannot be used together.</p>
Use Bit Definition	<p>Designating effective bit changes [Word address] which are conditional address to binary number.</p> <p>For example, when conditional address is [D0000], data of [D0000] is [2000], it becomes [0000/0111/1101/0000] if changes [2000] to binary number.</p> <div style="border: 1px dashed black; padding: 5px; margin-top: 10px;"> <input checked="" type="checkbox"/> Use Bit Definition (Start Bit: 2 Length: 4) </div>

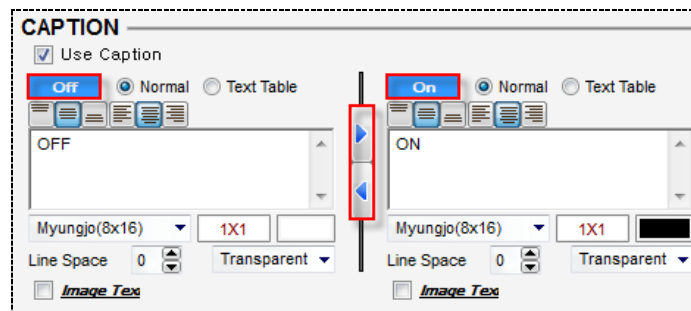
If sets starting bit as [2], length as [4], it is the function which uses 4 bit only from 2nd bit out of [0000/0111/11[01/00]00].

Cannot be used with [Use Float] simultaneously.

11.3.3 CAPTION

Caption is the function to write over ON/OFF lamp.

It sets caption of basic lamp when it does not meet condition set in [Case] page.



[Figure. Caption]

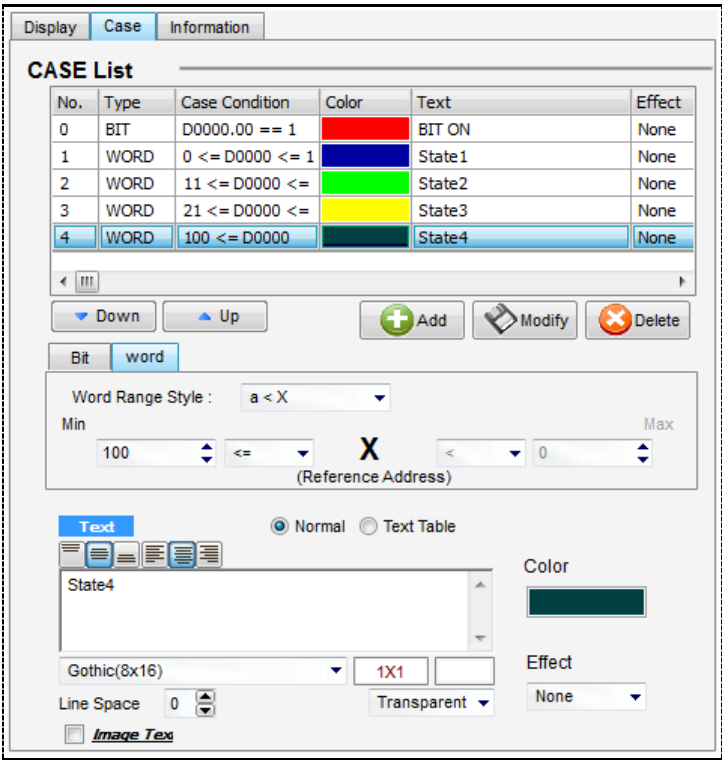
How to input is the same as the way of input [Draw]–[Text].

(☞ Refer to [8.6] of [Chapter 8] regarding how to input characters.)

11.4 Case page

Sets shape of lamp and caption along condition.

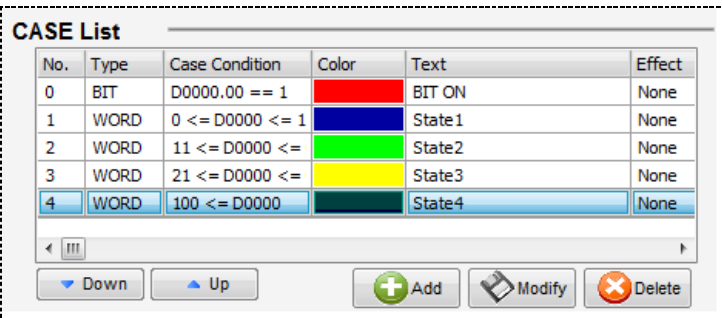
Lamp which can set along condition is maximum 64.



[Figure. Case page of Word Lamp]

11.4.1 CASE List

List of set condition. Word Lamp consists of maximum 64.



[Figure. Case list]

After setting condition and lamp shape at bottom, adds it to list using [Add/Modify/Delete] button.

Also, can change the sequence of list using [Down/Up] button.

If there are two cases meeting conditions, displays lamp which is positioned at top of list.

11.4.2 Condition setting

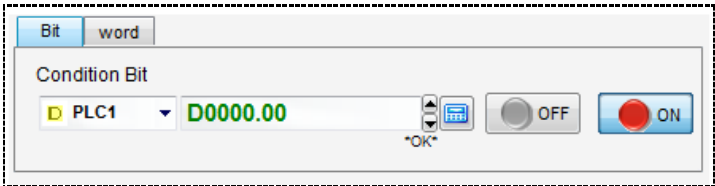
Can set bit condition as well as word condition by extending functions in Word Lamp tag.

(1) Bit condition

Can display lamp along ON/OFF status of bit address.

Inputs bit address of [Condition Bit] and selects OFF/ON button.

After setting bit condition, sets shape of lamp at bottom then adds it to case list.

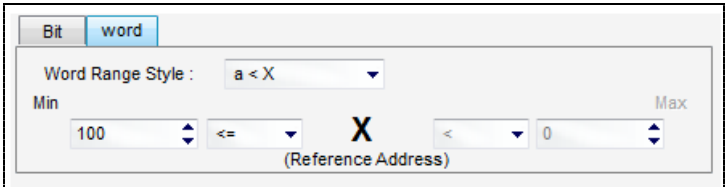


[Figure. Bit condition]

(2) Word condition

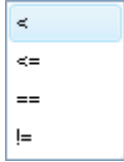
Displays lamp along data of word address in [Display] page set in [Display] page.

Can display lamp when displays lamp along its range using word condition, or data is specific value.



[Figure. Word condition]

Word condition	Explanation
Word Range Style	<p>[a] means minimum value, [X] means word address set display page and [b] means maximum value.</p> <div><div>a < X</div><div>X < b</div><div>a < X < b</div></div> <p>[a<X] is the condition which data is bigger than minimum value.</p> <p>[X<b] is the condition which data is smaller than maximum value.</p> <p>[a<X<b] is the condition which data is between minimum value and maximum value.</p> <p>[<] calculation can be selected out of several comparison calculations.</p>

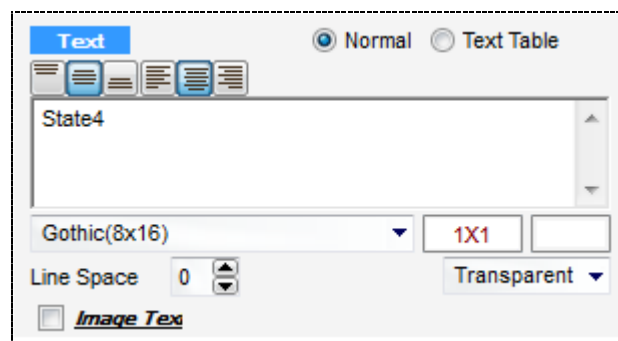
Calculation	 <p>[<] is that right passive calculation is bigger than left passive calculation. Or, left passive calculation is smaller than right passive calculation.</p> <p>[<=] is that right passive calculation is bigger than or same as left pass calculation. Or, left pass calculation is smaller than or same as right passive calculation.</p> <p>[==] is that right passive calculation is the same as right passive calculation.</p> <p>[!=] is that right passive calculation is not the same as left passive calculation.</p>
Min	Minimum value to compare in word condition. Sets a constant.
Max	Maximum value to compare in word condition. Sets a constant.

11.4.3 Shape setting of caption and lamp

(1) Caption setting

Caption is the function which writes over the characters.

Can set caption differently for each lamp.




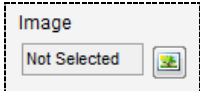

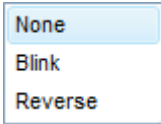
[Figure. Caption setting]

How to input characters is the same way of input [Draw]–[Text].

(Refer to [8.6] of [Chapter 8] regarding how to input characters.)

(2) Lamp shape setting

Sets lamp shape for each case.

Lamp shape setting	Explanation
Figure lamp	Sets color of lamp. 
Image lamp	Selects image of lamp.  If clicks  button, [Image Library] appears and can select image.
Effect	Can give display effect of blinking or reversion to emphasize lamp.  [Blink] is the effect of appearing and disappearing in interval of 0.5 second repeatedly. [Reverse] is the displaying effect which the lamp and basic lamp set in [Display] page display alternatively.

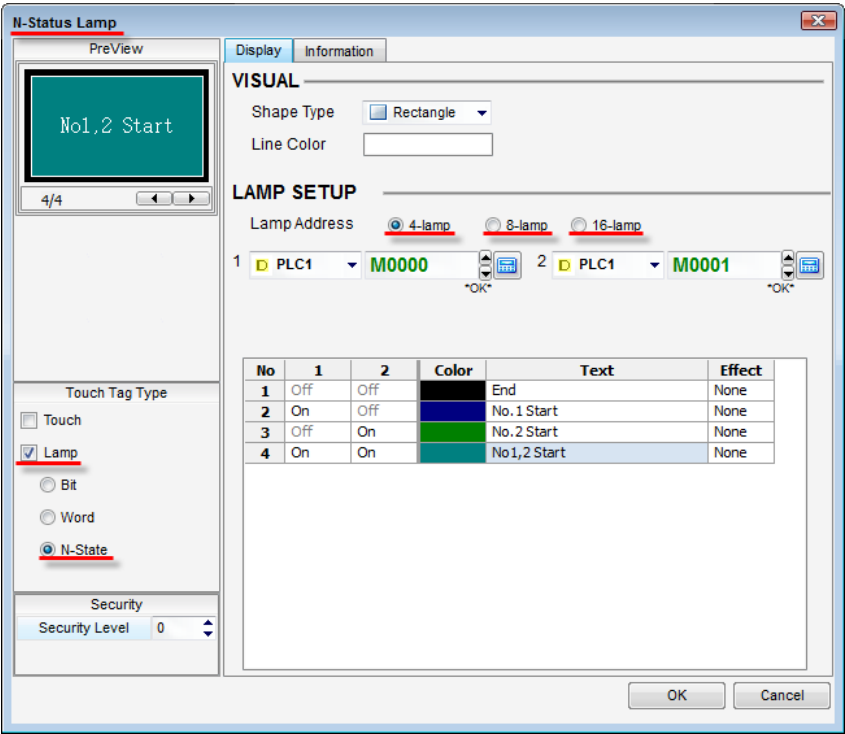
CHAPTER 12 N-State Lamp

CHAPTER 12 – N-State Lamp

12.1 Outline of N-State Lamp

N-State Lamp is the tag which displays status of ON/OFF combination of [2/3/4] bit address as circle/square shaped color or image with blinking. N-State Lamp is used when displays status of multi-bit address at one position.

Property screen of N-State Lamp.



[Figure. Property screen of N lamp]

Touch tag can be set freely.

Can set the type in [Touch tag Type] of property screen according to purpose of use.

If wants to use touch function only, checks [Touch], if wants to use lamp function only, checks [Lamp]. If wants to use both functions, checks both [Touch] and [Lamp]. In case of checking lamp function, it becomes [Bit Lamp/Word Lamp/N lamp] along selection of [Bit, word, N status].

As for Bit Lamp tag, checks [Lamp] only and selects [Bit].

12.2 Page composition of N-State Lamp property screen

Bit Lamp tag property screen consists of [Display] and [Information] pages.

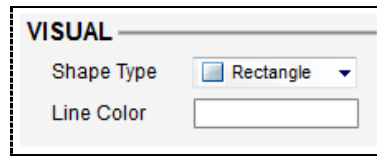
Property page	Explanation
Display	Page which sets shape of lamp, address and caption.
Information	Page which displays data of Bit Lamp tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

12.3 Display page

Page which sets the shape of lamp and caption along combination of bit address [2/3/4].

No	1	2	Color	Text	Effect
1	Off	Off	Black	End	None
2	On	Off	Blue	No.1 Start	None
3	Off	On	Green	No.2 Start	None
4	On	On	Teal	No.1,2 Start	Blink

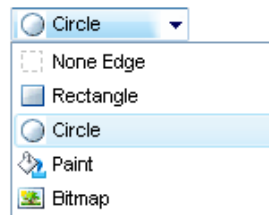
[Figure. Display page of N lamp]



[Figure. Display setting]

Sets shape of lamp selecting type of figure.

There are [None Edge], [Rectangle], [Circle], [Paint] and [Bitmap] as types of figures.



[Figure. Shape Type]

Shape Type	Explanation
None Edge	Lamp of the square without edge.
Rectangle	Lamp of the square with edge.
Circle	Lamp with circle shape.
Paint	Lamp which fills already-drawn closed figure with color only.
Bitmap	Image lamp.

(1) Figure lamp

In case of selecting [None Edge], [Rectangle], [Circle] and [Paint] as types of figures, they are called figure lamps.

Color of line means colors of outlines.

Out of figure lamps, [Rectangle] and [Circle] set colors of lines.

Out of figure lamps, because [None Edge] and [Paint] do not have the outlines, they don't set colors of lines. So, if selects [None Edge] and [Paint] out of types of figures, parts which does not select [Color of line] is inactivated.

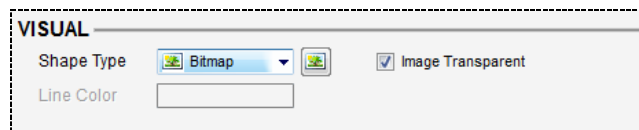
Figure lamp inputs color when sets shape of lamp along ON/OFF combination at below.

No	1	2	Color	Text	Effect
1	Off	Off			None
2	On	Off			None
3	Off	On			None
4	On	On		No. 1, 2 Start	Blink

[Figure. Input lamp color]


(2) Image lamp

In case of selecting [Bitmap] as type of figure, it is called image lamp.



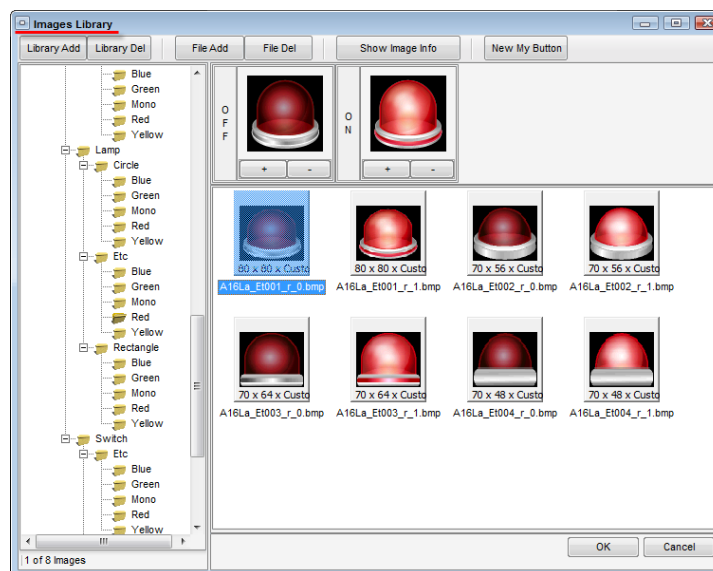
[Figure. Bitmap(image) lamp]

If selects [Bitmap] as type of figure,  button appears at right.

If clicks  button, [Image Library] is shown, and can select ON/OFF image.

Images basically provided by XDesignerPlus program and images([*.bmp], [*.jpg], [*.jpeg]) which user adds separately can be registered in [Image Library] as ON/OFF lamp image.

(Refer to [9.4] of [Chapter 9] regarding Image Library.)



[Figure. Image Library]

[Image Transparent] is the function which enables background color in black of registered image to be transparent when background color of screen to register is not black.

No	1	2	Image	Text	Effect
1	Off	Off	Selected	End	None
2	On	Off	Selected	No. 1 Start	None
3	Off	On	Selected	No. 2 Start	None
4	On	On	Selected	No. 1,2 Start	Blink

[Figure. Select lamp image]

12.3.2 LAMP SETUP

Sets the shape of lamp along combination of lamp address.

LAMP SETUP

Lamp Address ☒ 4-lamp ☐ 8-lamp ☐ 16-lamp

1 2

No	1	2	Image	Text	Effect
1	Off	Off	Selected	End	None
2	On	Off	Selected	No. 1 Start	None
3	Off	On	Selected	No. 2 Start	None
4	On	On	Selected	No. 1,2 Start	Blink

[Figure. Range setup]

(1) 4-lamp 4-lamp

Lamp which uses 2 lamp addresses.

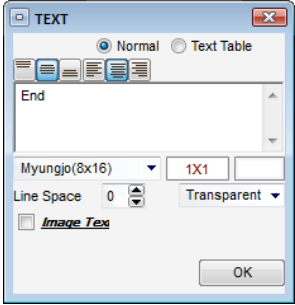
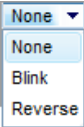
2 lamp addresses become 4-lamp because they make 4 combinations and register 4 lamps.

If selects [4-lamp], 2 address input parts of [1] and [2] appear.

After setting address, sets the shape of lamp along ON/OFF data combination of bit address set in below.

No	1	2	Color	Text	Effect
1	Off	Off		End	None
2	On	Off		No. 1 Start	None
3	Off	On		No. 2 Start	None
4	On	On		No. 1,2 Start	Blink

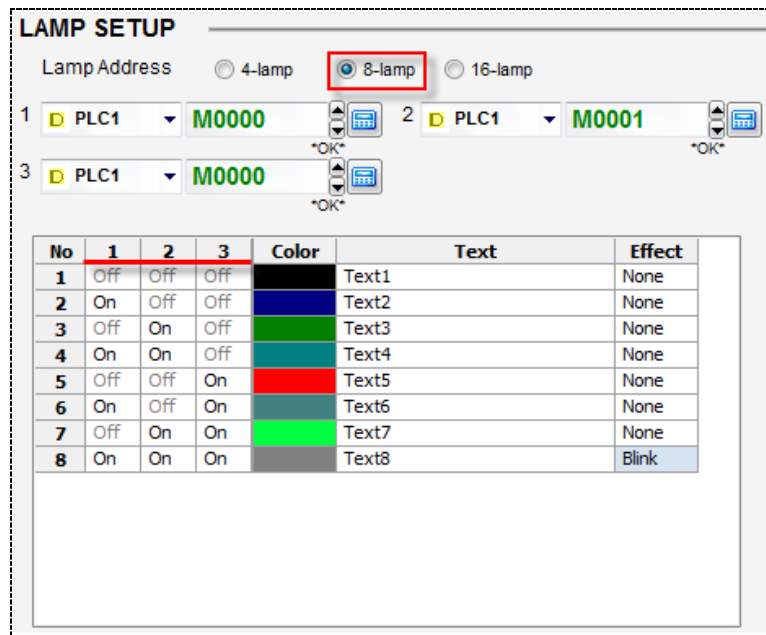
[Figure. Lamp shape setting of 4-lamp]

4-lamp	Explanation
No	Number marked in sequence as many as number of lamps.
1	Matches with data of address [1].
2	Matches with data of address [1].
Color/image	<p>Sets colors or image of lamp along ON/OFF data combination of [1] and [2].</p> <p>Sets colors in [Color palette] which pop up by click.</p>
TEXT	<p>Write characters over lamp.</p> <p>Inputs characters in [Character input screen] which pop up by double-click.</p>  <p>How to input is the same way of input [Draw]–[Text].</p> <p>(Refer to [8.6] of [Chapter 8] regarding how to input.)</p>
Effect	<p>Sets blinking/reversion effects to emphasize lamp.</p> <p>If double-clicks, an arrow appears, if clicks once more, a list appears.</p>  <p>[Blink] is emphasizing effects making character line appear and disappear with interval of 0.5 second.</p> <p>[Reverse] is the displaying effect which the lamp and basic lamp set in [Display] page display alternatively.</p>

(2) 8-lamp 8-lamp

Lamp which uses 3 lamp addresses.

3 lamp addresses become 8-lamp because they make 8 combinations and register 4 lamps.



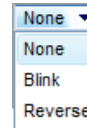
[Figure. 8-lamp]

If selects [8-lamp], 3 address input parts of [1], [2] and [3] appear.

After setting address, sets the shape of lamp along ON/OFF data combination of bit address set in below.

8-lamp	Explanation
No	Number marked in sequence as many as number of lamps.
1	Matches with data of address [1].
2	Matches with data of address [1].
3	Matches with data of address [3].
Color	Sets colors or image of lamp along ON/OFF data combination of [1] and [2]. Sets colors in [Color palette] which pop up by click.
TEXT	<p>Write characters over lamp.</p> <p>Inputs characters in [Character input screen] which pop up by double-click.</p> <div> </div> <p>How to input is the same way of input [Draw]–[Text]. (☞ Refer to [8.6] of [Chapter 8] regarding how to input.)</p>
Effect	Sets blinking/reversion effects to emphasize lamp.

If double-clicks, an arrow appears, if clicks once more, a list appears.



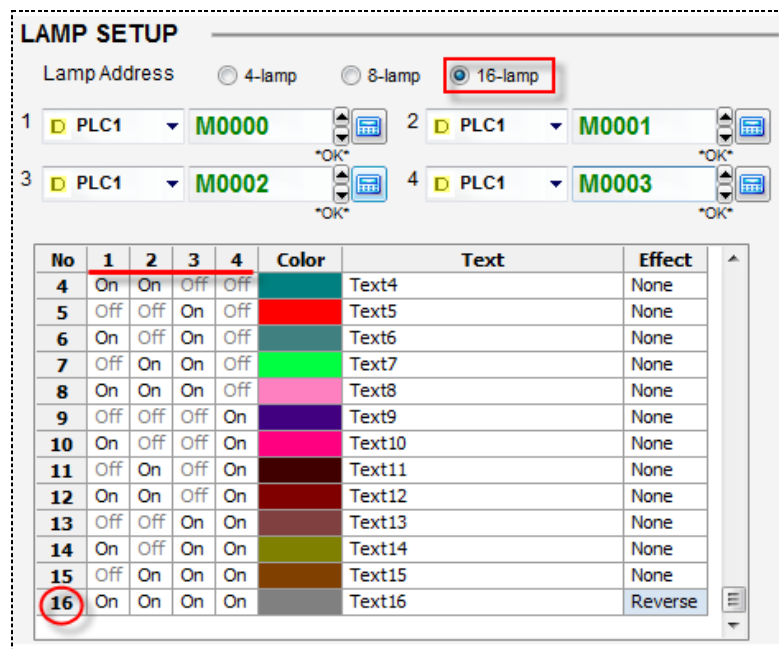
[Blink] is emphasizing effects making character line appear and disappear with interval of 0.5 second.

[Reverse] is the displaying effect which the lamp and basic lamp set in [Display] page display alternatively.

(3) 16-lamp

Lamp which uses 4 lamp addresses.

4 lamp addresses become 16-lamp because they make 16 combinations and register 16 lamps.

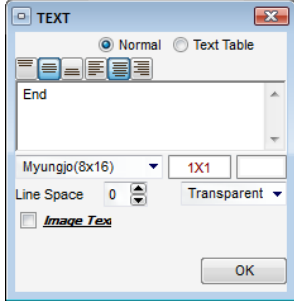
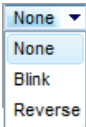


[Figure. 16-lamp]

If selects [16-lamp], 4 address input parts of [1], [2], [3] and [4] appear.

After setting address, sets the shape of lamp along ON/OFF data combination of bit address set in below.

16-lamp	Explanation
No	Number marked in sequence as many as number of lamps.
1	Matches with data of address [1].
2	Matches with data of address [1].
3	Matches with data of address [3].

4	Matches with data of address [4].
Color	<p>Sets colors or image of lamp along ON/OFF data combination of [1] and [2].</p> <p>Sets colors in [Color palette] which pop up by click.</p>
TEXT	<p>Write characters over lamp.</p> <p>Inputs characters in [Character input screen] which pop up by double-click.</p>  <p>How to input is the same way of input [Draw]–[Text]. (Refer to [8.6] of [Chapter 8] regarding how to input.)</p>
Effect	<p>Sets blinking/reversion effects to emphasize lamp.</p> <p>If double-clicks, an arrow appears, if clicks once more, a list appears.</p>  <p>[Blink] is emphasizing effects making character line appear and disappear with interval of 0.5 second.</p> <p>[Reverse] is the displaying effect which the lamp and basic lamp set in [Display] page display alternatively.</p>

CHAPTER 13 Touch Tag

CHAPTER 13 – Touch Tag

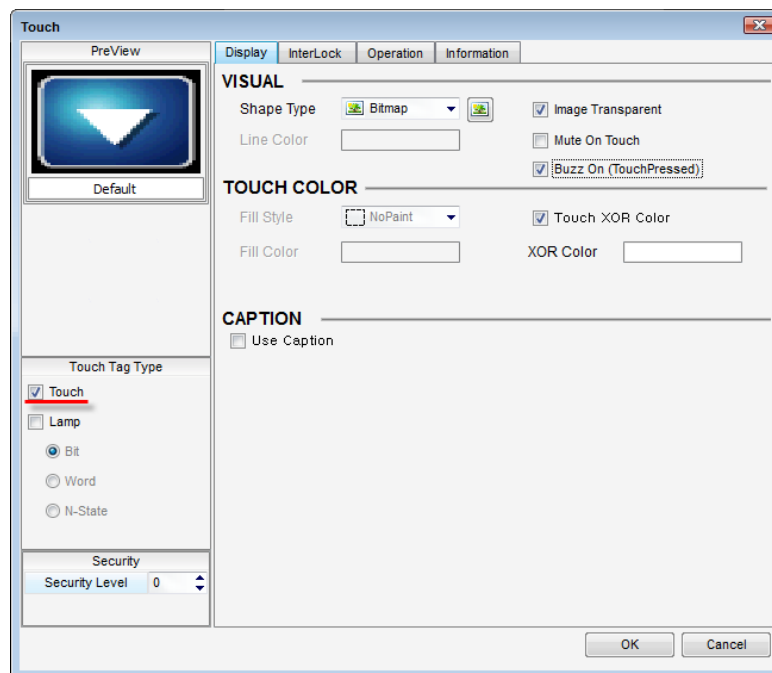
13.1 Outline of Touch Tag

Touch tag is the button which sets touch boundary and executes set operation if touches the boundary.

Touch tag carries on the operation as followings.

1. Changes ON/OFF data of bit address.
2. Changes data of word address.
3. Enables numbers and characters to be input with number key and character key.
4. Performs special functions such as screen conversion and menu screen.

Property screen of Touch tag.



[Figure. Property screen of Touch tag]

Touch tag can set the type freely.

Can set the type in [Touch tag Type] of property screen according to purpose of use.

If wants to use touch function only, checks [Touch], if wants to use lamp function only, checks [Lamp]. If wants to use both functions, checks both [Touch] and [Lamp]. In case of checking lamp function, it becomes [Bit Lamp/Word Lamp/N lamp] along selection of [Bit, word, N status].

As for Bit Lamp tag, checks [Lamp] only and selects [Bit].

13.2 Page composition of Touch tag property screen

Property screen of Word Lamp tag consists of [Display], [Case] and [Information].

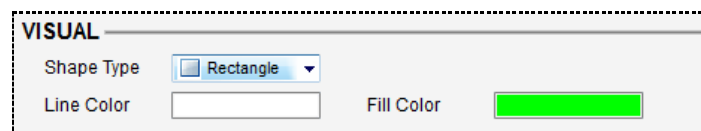
Property page	Explanation
Display	Page which sets shape of basic lamp and caption when there is no lamp address and condition.
Inter lock	Page which sets the condition to the operation of Touch Button.
Operation	Page which touches button sets the operation.
Information	Page which displays data of Word Lamp tag. It displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

13.3 Display page

Word Lamp tag is the tag which displays data of word address as lamp.

Inputs word address in display page and sets shape of basic lamp and caption displayed when there is no condition.

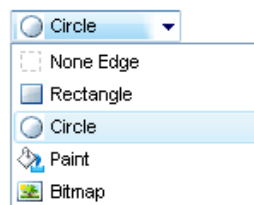
13.3.1 VISUAL



[Figure. Display setting]

Sets shape of lamp selecting type of figure.

There are [None Edge], [Rectangle], [Circle], [Paint] and [Bitmap] as types of figures.

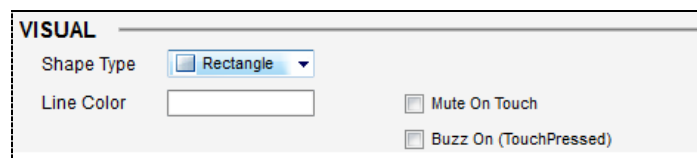


[Figure. Shape Type]

Type of figure	Explanation
None Edge	Lamp of the square without edge.
Rectangle	Lamp of the square with edge.
Circle	Lamp with circle shape.
Paint	Lamp which fills already-drawn closed figure with color only.
Bitmap	Image lamp.

(1) Figure Touch Button

If selects [None Edge], [Rectangle] and [Circle] as Shape Type, it is called as figure Touch Button.



[Figure. Figure Touch Button]

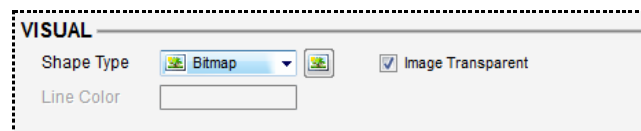
Color of line means colors of outlines.

Out of figure lamps, [Rectangle] and [Circle] set colors of lines.

Out of figure lamps, because [None Edge] and [Paint] do not have the outlines, they don't set colors of lines. So, if selects [None Edge] and [Paint] out of types of figures, parts which does not select [Color of line] is inactivated.


(2) Image Touch Button

In case of selecting [Bitmap] as type of figure, it is called image lamp.



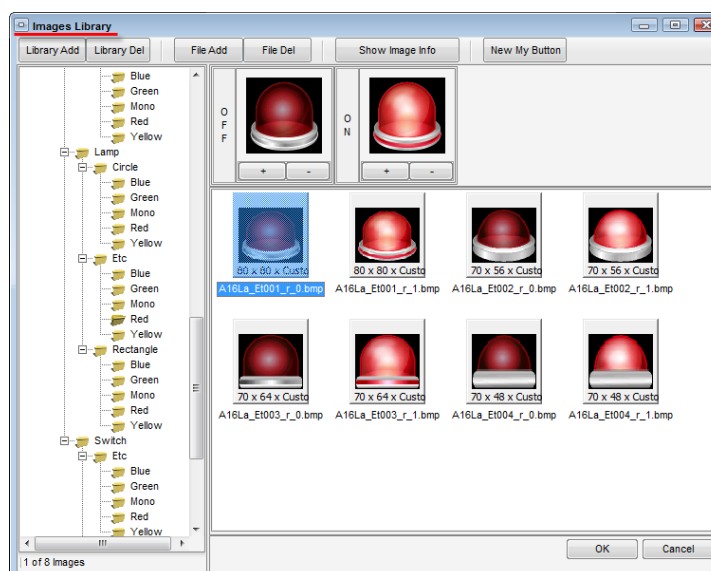
[Figure. Bitmap(image) lamp]

If selects [Bitmap] as type of figure,  button appears at right.

If clicks  button, [Image Library] is shown, and can select ON/OFF image.

Images basically provided by XDesignerPlus program and images([*.bmp], [*.jpg], [*.jpeg]) which user adds separately can be registered in [Image Library] as ON/OFF lamp image.

(Refer to [9.4] of [Chapter 9] regarding Image Library.)



[Figure. Image Library]

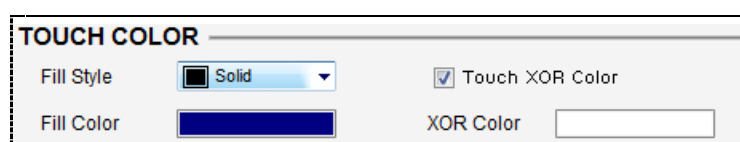
[Image Transparent] is the function which enables background color in black of registered image to be transparent when background color of screen to register is not black.

(3) Do not use touch sound/buzzer sound when press touch

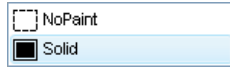
Touch sound	Explanation
Mute On Touch	If touches Touch Button, short “Beep” sounds. If wants to remove this sound, checks [Do not use touch sound].
Buzz On (Touch pressed)	If touches Touch Button, long “Beep” buzzer sounds till touching other Touch Button.

13.3.2 TOUCH COLOR

In case of figure Touch Button, sets filling color and filling property.

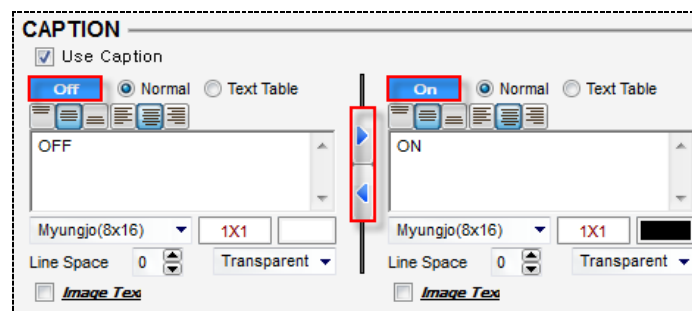


[Figure. Touch color]

Touch color	Explanation
Fill Style	<p>Selects one out of [NoPaint] or [Solid].</p>  <p>[NoPaint] is the property of Touch Button which's inside is empty. So, if selects this property, [Filling color] gets inactivated. [Solid] is the property of Touch Button which's inside is filled.</p>
Fill color	Sets internal color of Touch Button.
Touch XOR Color	Sets if checks reversion (XOR) display or not while touching Touch Button.
XOR Color	If touches Touch Button, it is the color which reverses with color of button.

13.3.3 CAPTION

Caption is the function to write over ON/OFF lamp.



[Figure. Caption]

How to input is the same as the way of input [Draw]–[Text].

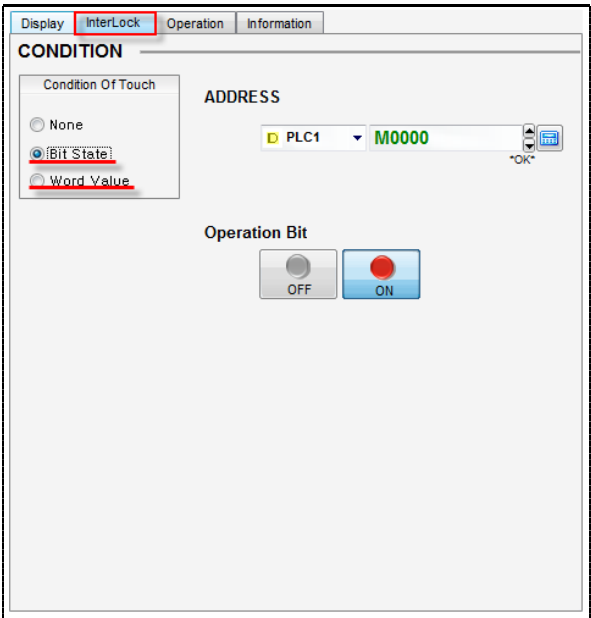
(☞ Refer to [8.6] of [Chapter 8] regarding how to input characters.)

13.4 Inter Lock page

Page which sets the condition to the operation of Touch Button.

If does not set the condition, the set operation is executes whenever touches Touch Button.

If sets the condition, the set operation is executes on when the condition is met.



[Figure. Inter Lock page of Touch tag]

13.4.1 Bit status condition

If sets bit address, and the designated bit address meets [Operation bit] condition, the designated operation is executed if touches Touch Button.

Bit status condition	Explanation
Address	Sets bit address to be a condition.
'OFF'	Only when data of the designated bit address is OFF and touches Touch Buttons. If data of bit address if ON, button is not operated.
'ON'	Only when data of the designated bit address is ON and touches Touch Buttons. If data of bit address if OFF, button is not operated.

13.4.2 Word value condition

If sets word address, data of designated word address meets [WORD RANGE], the designated operation is performed if touches Touch Button.

CONDITION

Condition Of Touch

☐ None
☐ Bit State
☒ Word Value

ADDRESS

D PLC1

D0000

OK

WORD RANGE

Min

0

~

Max

65535

[Figure. Word value condition

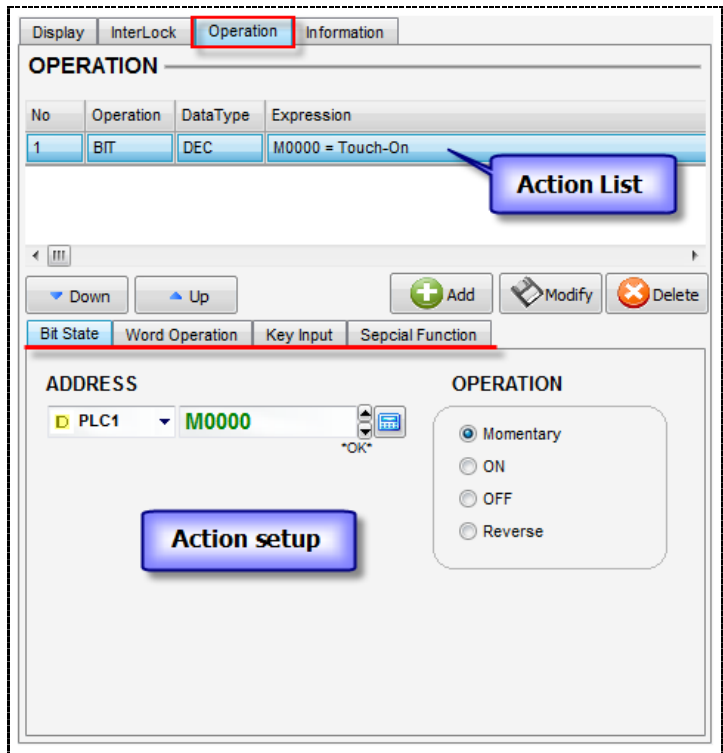
CONDITION	Explanation
ADDRESS	Sets word address to be conditioned.
WORD RANGE	<p>Input minimum value and maximum value.</p> <p>If data of word address is within minimized value, the designated operation is performed. If data of word address exceeds ranges of minimum value and maximum value, Touch Button is not work.</p>

13.5 Operation page

Page which touches button sets the operation.

Calculation page has [Operation list part] at top, [Operation setting part] at bottom.

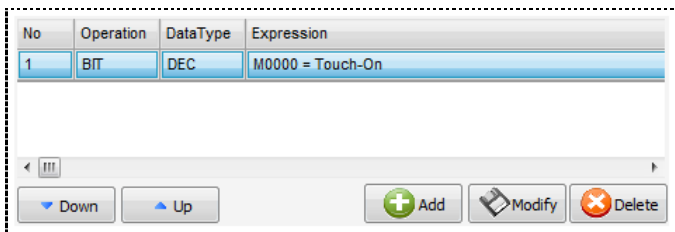
Touch Button sets operation to perform in the operation setting part and add it to operation list.





[Figure. Operation page in Touch tag]

13.5.1 Operation list part




Shows operation list Touch Button is going to perform.



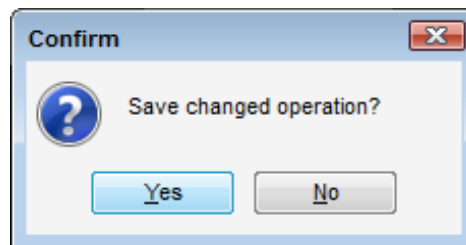
[Figure. Operation list part]

Operation list	Explanation
No.	Number which is marked in sequence whenever operation to perform is added If touches Touch Button, operation is performed in this sequence. Number can be edited using   buttons.
Operation	Displays the operation specified to [BIT], [WORD], [KEY] and [SPECIAL].
Data Type	Displays set data type. [DEC] is data type which works as symbolic decimal, [UDEC] as non-symbolic decimal, [HEX] as hexadecimal, [BCD] as hexadecimal or decimal
Expression	Set operation is displayed in calculation.

After setting operation to be performed by Touch Button in [Operation setting part] at bottom, has to register it in [Operation list part] using [Add], [Modify] and [Delete] buttons definitely.

Button	Explanation
	Registers set operation.
	Modifies the contents of already-registered operation.
	Deletes the contents of already-registered operation.

After modifying the setting in operation setting part, confirmation message as following appears when closing Touch tag property screen if does not apply it to [Operation list part].



[Figure. Confirmation message]

If presses [Yes] button, set contents is applied and property screen is terminated after modifying existing contents which was already registered, if presses [No] button, property screen is terminated without applying set contents.

13.5.2 Operation setting part

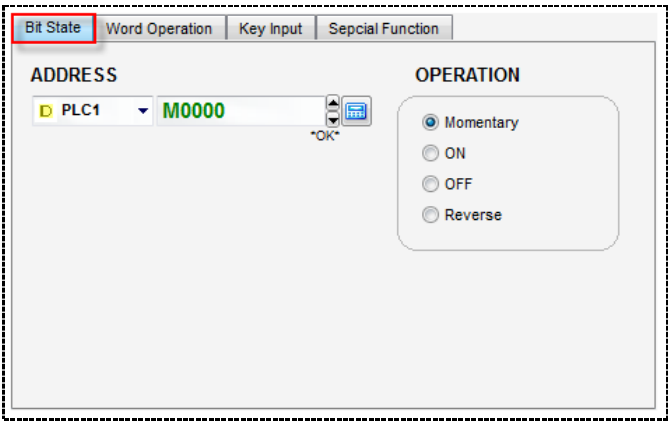
Operation of Touch Button is specified by 4 types, [Bit State], [Word operation] and [Special function].

(1) Bit State

Bit State is the operation which executes ON/OFF data of bit address.

Data of bit address has data of [0] and [1].

When it is [0], it is called [OFF], when it is [1], it is called [ON].



[Figure. Bit State]

Bit operation		Explanation
ADDRESS		Inputs bit address to operate.
OPERATION	Momentary	While pressing Touch Button, data of bit address is [ON], while releases pressing, it gets [OFF].
	ON	If presses Touch Button, data of bit address gets [ON].
	OFF	If presses Touch Button, data of bit address gets [OFF].
	Reverse	If presses Touch Button, data of bit address is converted from [ON] to [OFF] and [OFF] to [ON].

(2) Word operation

Word operation means calculation between word addresses.

It is the operation which replaces data to word address, or the results from operation between word addresses to word address.

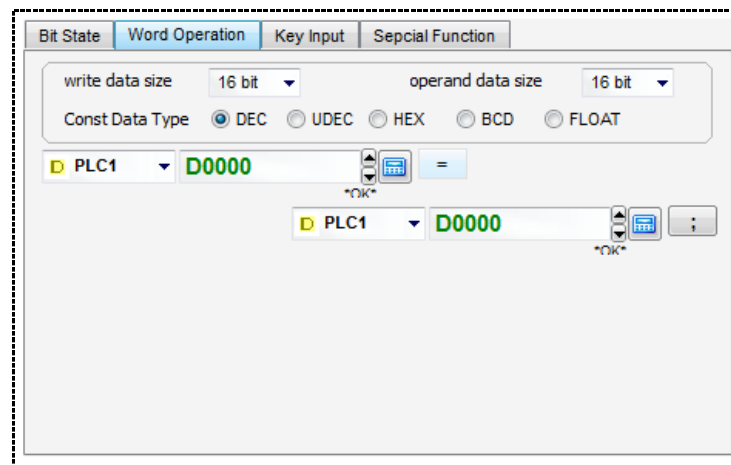
Word address is the address boundary of 16bit.

When 16bit of word address is all 0, it is [0] if changes it to decimal.

When 16bit of word address is all 1, it is [65535] if changes it to decimal.

So, data of word address has the range of [0 ~ 65535].

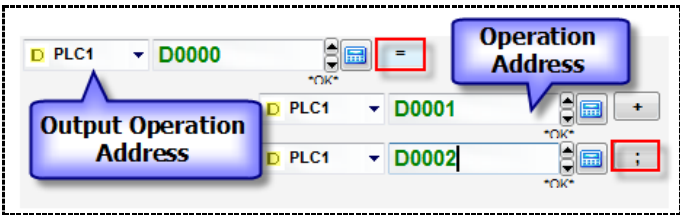
In case of symbolic decimal, it has range of [-32767 ~ 32768].





[Figure. Word operation]

Word operation	Explanation
Write data size	Size of output operation is the size of address which saves calculating results of operation. Sets one out of [16 bit] or [32 bit]. [32 bit] is used when saving bigger value than [16 bit] as using it up to next address to the designated address. The number of designated word address becomes sub-address, next number of address to the address becomes higher address.
Operand data size	Size of operation is the size of address used in operation. Sets one out of [16 bit] or [32 bit]. [32 bit] is used when saving bigger value than [16 bit] as using it up to next address to the designated address. The number of designated word address becomes sub-address, next number of address to the address becomes higher address.
Const Data Type	Sets data type of constant value. [DEC] is symbolic decimal. [UDEC] is non-symbolic decimal. [HEX] is hexadecimal. [BCD] is hexadecimal actually, it is data which is used just like decimal because numbers including A~F are not displayed.


Calculation of word operation is set as following.

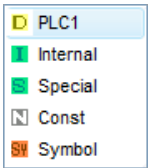


[Figure. Calculation of word operation]

Left address based on  is [Output operation address] which saves the results of calculation.
Right address based on  is [Operation address] which saves the results of calculation.

Replaces constant values to [Output operation address] using calculation, or replaces the results from operation between [Operation addresses] to [Output operation address].

Operation address can be set up to maximum 4, ending of operation specifies .
Operation address can be set as constant value as well as multiple addresses as below figure.



[Figure. Type of operation address]

Completes calculation by setting calculation between operation addresses.
If clicks [Operation button] at right of operation address, operation list appears.



[Figure. Operation list]

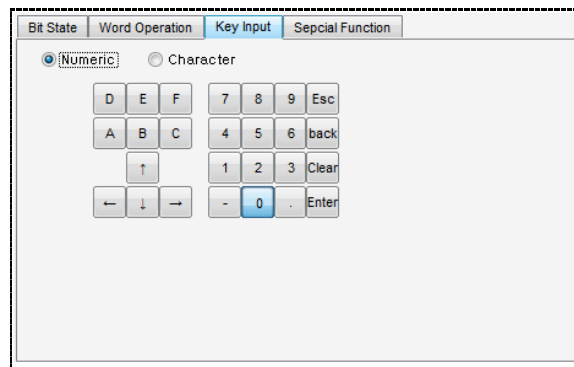
Operation	Explanation
;	Means end of operation.
+	[Add] data of two operation addresses.
-	[Subtract] data of two operation addresses.
*	[Multiply] data of two operation addresses.
/	[Divide] data of two operation addresses.

^	Bit Statewhich calculates the value of binary number by [Bit XOR] operation.
%	Balance operation which calculates balance after dividing data of two operation addresses.
&	Bit Statewhich calculates the value of binary number by [bit AND] operation.
	Bit Statewhich calculates the value of binary number by [Bit OR] operation.
<<	Bit Statewhich operates [Bit left shift]. Implements bit shift the value of left operation to right as much value of right operation.
>>	Bit Statewhich operates [Bit right shift]. Implements bit shift the value of left operation to left as much value of left operation.

(3) Key Input

Key Input is the function which makes [Number key] or [Text key] using Touch Button.

First, selects which one to register out of number key or text key.

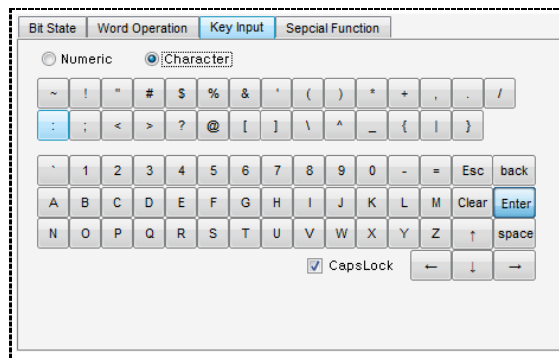


[Figure. Key Input]

If selects number key, number keys are provided as figure above.

Numeric key	Explanation
0 ~ 9	10 number keys.
A ~ F	6 keys to input hexadecimal.
Direction key	Direction key to change the position of input mode of key display tag. (Refer to [19.4] of [Chapter 19] regarding input mode of key display tag.)
-	Negative key.
.	Decimal point.
Esc	Key to cancel input.
back	Deletes one lately-key input out of key input data.
Clear	Deletes all key input data.
Enter	Inputs key input data to set address.

If selects [Text], text keys are provided as following figure.

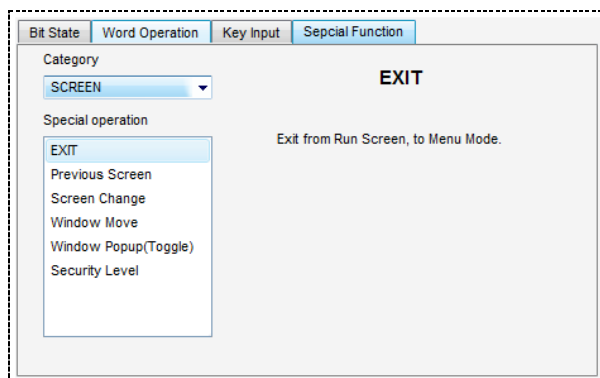


[Figure. Character key]

Text key	Explanation
Special texts	Various special keys are provided as keyboard does from [~] to [=].
0 ~ 9	10 number keys.
A ~ Z	26 English letters. Can register small letters if does not check [CapsLock] at bottom.
Direction keys	Direction keys to change the position of input mode of key display tag. (Refer to [19.4] of [Chapter 19] regarding input mode of key display tag.)
Esc	Key to cancel input.
back	Key to delete latest key input out of entire key input data.
Clear	Deletes all key input data.
Enter	Inputs key input data set in address.
space	Inputs space.

(4) Special functions

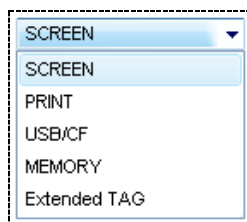
Special functions required for operation of touch screen.



[Figure. Special functions]

Several special functions are specified by 5 types.

There are various [Special operation] in [Sorting].

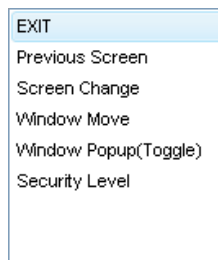


[Figure. Sorting]

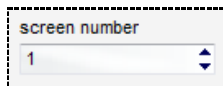
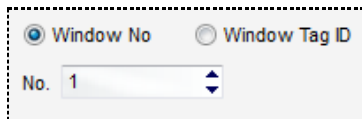
Class	Explanation
SCREEN	Special function related with screen.
PRINT	Special function related with print.
USB/CF	Special function related with USB memory storage unit or CF memory card.
MEMORY	Special function related with Memory.
Extended TAG	Special function related with tag.

- [SCREEN] special functions

Special functions related with screen.



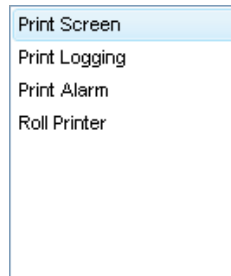
[Figure. Special Functions Related with screen]

SCREEN	Explanation
EXIT	Terminates operating screen and moves to main screen.
Previous Screen	Moves to previous screen from current screen.
Screen Change	<p>If designates screen number, moves to designated screen.</p> 
Window Move	After registering it in window screen and touching touch screen, window screen is moved to touched coordinates touched in base screen if touches base screen.
Window Popup (Toggle)	<p>Designates [Window screen number] or registered [Window tag ID].</p> <p>[Window tag ID] is displayed in [Register information] of registered window tag. The window tag has to be set as [Touch tag used] in property. If selects and designates [Window tag ID], window screen set in the window tag is imported.</p> <p>If touches it once, window screen is popped up, if touches once again, the window screen gets disappeared.</p> 
Security Level	<p>Calls password window screen.</p> <p>Can input password in password window screen.</p> <p>[Password window screen] is set automatically if implements [Password setting] in [Project] menu, it can be created in popup menu which is displayed by pressing right button of mouse of [Window screen] of [Project manager].</p> <p>(Refer to [Chapter 7.10] of [Chapter 7] regarding password setting(security level setting.)</p>

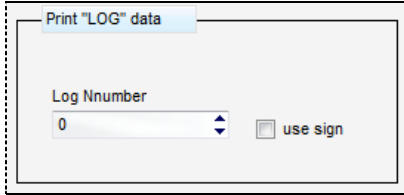
- [PRINT] special functions

Special functions related with print.

Touch screen can be print by connecting with general printers and roll printers(mini printers).

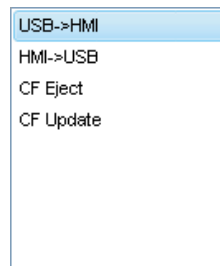


[Figure. Special functions related with print]

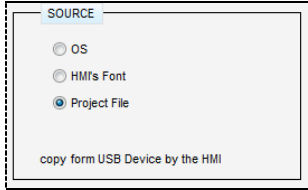
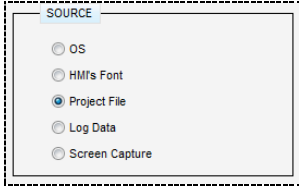
PRINT	Explanation
Print Screen	Prints current screen with connected printer.
Print Logging	<p>Prints logging data with connected printer.</p>  <p>Given that Logging can be set from [Logging 1] to [Logging 8], inputs logging number to print.</p> <p>Displays symbol(–) when printing logging data, checks [Symbol] to print negative data.</p>
Print Alarm	Prints alarm details with connect printer.
Roll Printer	<p>Can print data of touch screen by 232C communications with roll printers as mini printer.</p> <p>Prints the edited contents separately by connecting with COM1 port of touch screen.</p> <p>(Refer to [4.10] of [Chapter 4] regarding how to use roll printer.)</p>

- [USB/CF] special functions

Special functions related with USB memory storage units or CF memory card.

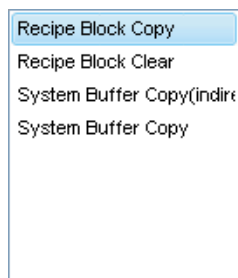


[Figure. Special functions related with USB/CF]

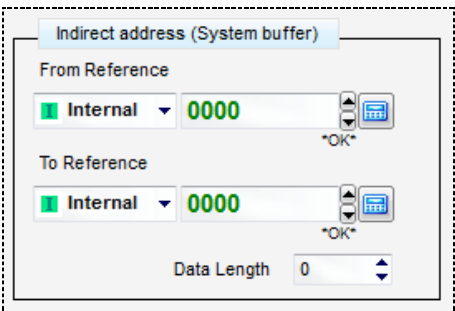
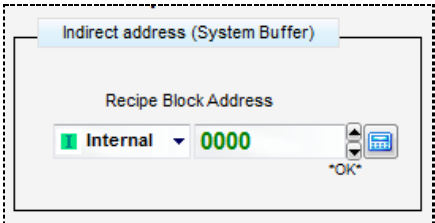
USB/CF	Explanation
USB->HMI	<p>Copies files in USB memory storage unit to memory of touch screen.</p>  <p>Selects files to copy out of OS, Font and design files.</p>
HMI->USB	<p>Copies data of touch screen to USB memory storage unit.</p>  <p>Selects files to copy out of OS, Font, design files. Logging date and screen capture. [Screen capture] function is the function which enables currently-operating screen to be captured and saved in USB memory storage unit with bitmap image as it is.</p>
CF Eject	<p>Can save logging or alarm data by mounting CF memory card at rear side of touch screen.</p> <p>Before removing this CF memory card, removes it safely by pressing [CF Eject] button definitely.</p> <p>Moves all logging or alarm data left in touch screen memory to CF memory card and removes the connection.</p>
CF Update	<p>Can save logging or alarm data by mounting CF memory card at rear side of touch screen.</p> <p>If saves logging or alarm data using CF memory card, logging date or alarm data in memory of touch screen is moved to CF memory card when it becomes the certain capacity. [CF Update] moves function logging data or alarm data to CF memory card though it does not become the certain capacity.</p>

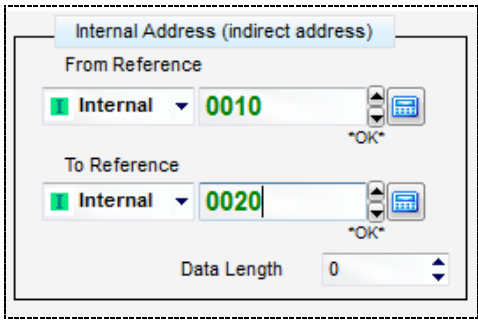
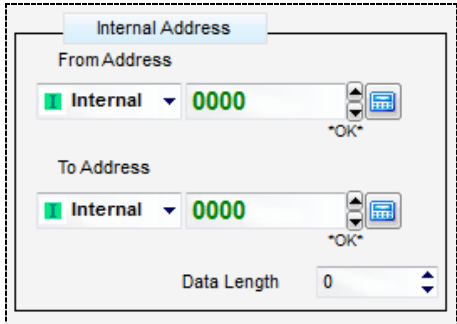
- [MEMORY] special functions

Special functions related with memory.



[Figure. Special functions related with memory]

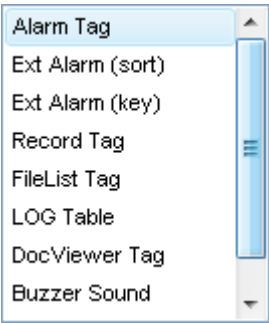
MEMORY	Explanation
Recipe Block Copy	<p>Can be used when uses recipe setting in project.</p> <p>Copies saved recipe data to other block by block unit.</p>  <p>[From Reference] and [To Reference] can set internal address only. Data of this address becomes number of block.</p> <p>Data length does not have to be input because it is not applied.</p> <p>If sets it as figure above, data of internal address [10] is [5], data of internal address [20] is [3], No. data of recipe block number 5 is copied to block number 3.</p>
Recipe Block clear	<p>Deletes data of recipe block.</p>  <p>[Recipe Block Address] can set internal address only.</p> <p>Data of this address becomes block number of recipe to delete.</p>
System Buffer Copy (indirect)	<p>Function to copy it to other address indirectly as much as [Data length] which sets data of internal address . Indirect copy means copy using reference address.</p>

	 <p>[From Reference] and [To Reference] can set internal address only. Data of this address becomes number of block.</p> <p>If sets it as figure above, data of internal address [10] is [200], data of internal address [20] is [300] and data length is [10], 10 data of internal address [200~209 address] are copied to internal address [300~309 address].</p>
System Buffer Copy	<p>Function to copy it to other address indirectly as much as [Data length] which sets data of internal address . Indirect copy means copy using reference address.</p>  <p>[From Reference] and [To Reference] can set internal address only. Data of this address becomes number of block.</p> <p>If sets it as figure above, copies data of internal address [10~19 address] to internal address [20~29 address].</p>

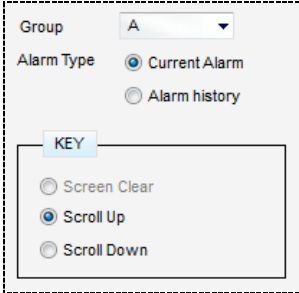
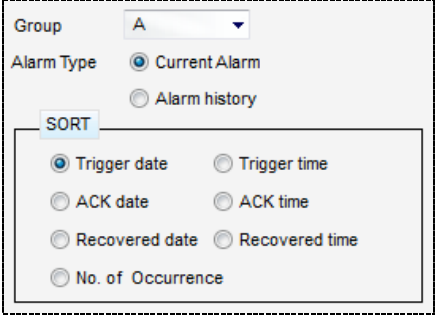
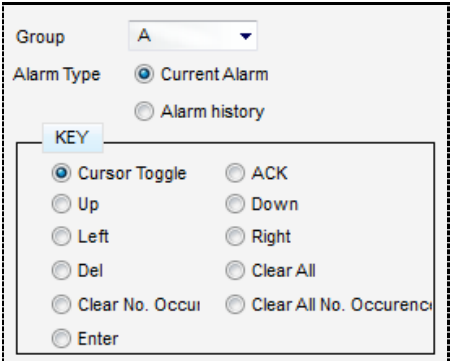
- [Extended TAG] Special functions

Special functions related with tag.


There are special functions related with alarm tag, extended alarm tag, record tag, filelist tag, logtable and Doc viewer tag and buzzer sound and system reset functions.

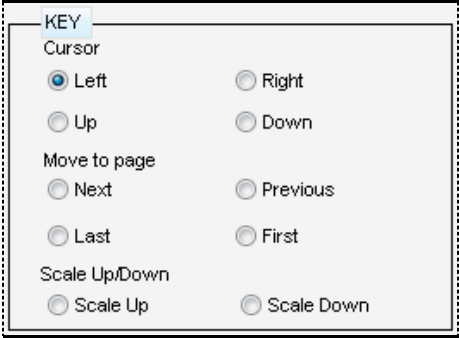


[Figure. Special functions related with tag]

Extended TAG	Explanation
Alarm Tag	<p>Touch Button used as key in alarm tag.</p> <p>Can register key in alarm tag basically, it is used when makes alarm tag and button separately.</p>  <p>Selects set group and type of alarm in alarm tag. Current alarm can register [UP/DOWN] button and alarm history can register [UP/DOWN/CLEAR] buttons.</p> <p>(Refer to [Chapter 27] regarding alarm tag.)</p>
Ext Alarm (sort)	<p>Touch Button used for sorting in extended alarm tag.</p> <p>Can sort currently-displayed alarm list by several standards'. Selects group and alarm type set in extended alarm tag. Then, selects it based on (SORT) standard.</p>  <p>[Trigger date] is occurring data, [Trigger time] is occurring hour.</p> <p>[ACK date] is checking date of user, [ACK time] is checking time of user,</p> <p>[Recovered date] is releasing date, [Recovered time] is releasing time and</p> <p>[No. of Occurrence] is occurring frequency.</p> <p>(Refer to [Chapter 28] regarding extended alarm tag.)</p>
Ext Alarm (key)	<p>Touch Button used as key in extended alarm tag.</p> <p>Can register key in alarm tag basically, it is used when makes alarm tag and button separately.</p> 

	<p>Selects set group and type of alarm in alarm tag.</p> <p>Then, selects key to register.</p> <p>[Cursor Toggle] is cursor key</p> <p>[ACK] is the key displays checking date/hour of user</p> <p>[UP/DOWN] is the key which moves alarm list or cursor up and down</p> <p>[Left/Right] is the key moves alarm list left and right of the score.</p> <p>[Del] is the key deletes one selected alarm by cursor.</p> <p>[Clear All] is the key deletes entire alarm which was released</p> <p>[Clear No. Occurrence] is the key which deletes one occurrence frequency selected by cursor.</p> <p>[Clear All No. Occurrence] is the key entire occurrence frequency</p> <p>[Enter] is the key to take action</p> <p>(Refer to [Chapter 28] regarding extended alarm tag.)</p>
Record Tag	<p>Touch Button which is used as cursor key and screen moving key in record tag.</p> <div> </div> <p>[LEFT] moves it to left as size of one data</p> <p>[RIGHT] moves it to right as size of one data.</p> <p>[UP] becomes several graphs which meets cursor when displays several graphs. At this time, it displays intersection with the graph displays moving to upper graphs from bottom graph.</p> <p>[DOWN] becomes several graphs which meets cursor when displays several graphs. At this time, it displays intersection with the graph displays moving to bottom graphs from upper graph.</p> <p>[NEXT] moves to next page.</p> <p>[PREV] moves to previous page</p> <p>[FIRST] moves to first page.</p> <p>[LAST] moves to last page.</p>
FileList Tag	<p>Touch Button which uses as key in file list tag.</p>

	<div> <div>KEY</div> <div> <input checked="" type="radio"/> Scroll Up <input type="radio"/> Scroll Down <input type="radio"/> Copy to Left <input type="radio"/> Copy to Right <input type="radio"/> PopUp(Toggle) <input type="radio"/> Enter <input checked="" type="radio"/> Delete </div> </div> <p>[Scroll Up] moves up files in file list part by one file.</p> <p>[Scroll Down] moves down files in file list part by one file.</p> <p>[Copy to Left] is used when two file list are registered. It copies files selected from left file list to the selected memory of right file list.</p> <p>[Copy to Right] is used when two file list are registered. It copies files selected from right file list to the selected memory of left file list.</p> <p>[Pop Up(Toggle)] implements popup [File manager] registered in window screen of base screen. If touches one, it popped up, and if touches one again, it disappears.</p> <p>[Enter] is used when [CF-recipe] function is used.</p> <p>After selecting recipe files saved in CF memory card, if press [Enter] button, recipe is moved to [Storage address when recipe is moved].</p> <p>[Delete] deletes the selected files.</p> <p>( Refer to [Chapter 40] regarding file list tag.)</p>
LOG Table	<p>Touch Button which is used as key in log table tag.</p> <div> <div>KEY</div> <div> Log Num : <input type="text" value="1"/> Scroll Count : <input type="text" value="1"/> <input checked="" type="radio"/> Up <input type="radio"/> Down <input type="radio"/> Left <input type="radio"/> Right <input type="radio"/> CF <input type="radio"/> SRAM <input type="radio"/> First <input type="radio"/> Last </div> </div> <p>Sets logging number set in log table.</p> <p>Number of scroll is the time of scrolling when it is moved by [Up/Down/Left/Right] buttons.</p> <p>[Up] moves up logging blocks displayed as number of scroll.</p> <p>[Down] moves down logging blocks displayed as number of scroll.</p> <p>[Left] moves logging column displayed as number of scroll to left.</p> <p>[Right] moves logging column displayed as number of scroll to right.</p> <p>[CF] imports and display logging data saved in CF memory card.</p> <p>[SRAM] imports and display logging data saved in touch screen.</p> <p>[First] moves it to most upper part of log table.</p> <p>[Last] moves it to lowest part of log table.</p>

	<p>Touch Button which is used as key in DocViewer tag.</p> 
DocViewer Tag	<p>[Left] moves screen to left.</p> <p>[Right] moves screen to right.</p> <p>[Up] moves screen upward.</p> <p>[Down] moves screen downward</p> <p>[Next] moves screen to next page.</p> <p>[Previous] moves screen to next page.</p> <p>[Last] moves screen to the last page.</p> <p>[First] moves screen to the first page.</p> <p>[Scale Up] enlarges document.</p> <p>[Scale Down] shrinks document.</p> <p>(☞ Refer to [Chapter 41] regarding DocViewer tag.)</p>
Buzzer Sound	Sounds short [Beep].
System Reset	In case of using PLC screen conversion, displays other screen which does not communicate with PLC, restores it to set screen in PLC screen conversion address if press this button when re-open communications.

CHAPTER 14 Touch+ Bit Lamp Tag

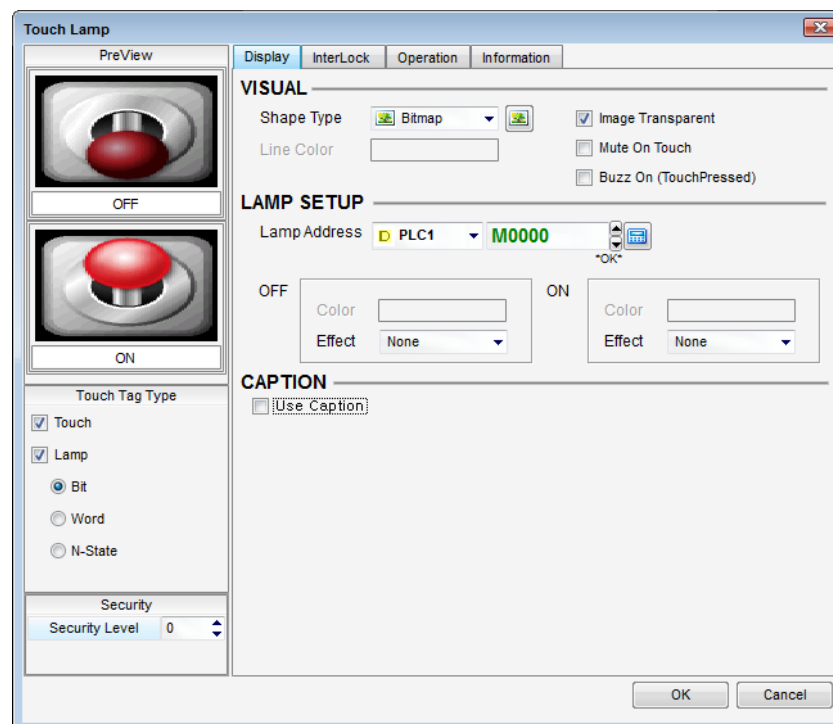
CHAPTER 14 – Touch + Bit Lamp Tag

14.1 Outline of touch + Bit Lamp Tag

Integrated tag with Touch tag and bit map tag functions.

Property screen consists of [InterLock] which is the same as Touch tag, [Operation] page and [Display] page which is the same as Bit Lamp tag.

So, refer to Bit Lamp tag regarding touch + Bit Lamp tag.



[Figure. Touch + Bit Lamp]

[Touch tag Type] is displayed when checks [Touch] and [Lamp] simultaneously, and [Bit] is selected.

CHAPTER 15 Touch + Word Lamp Tag

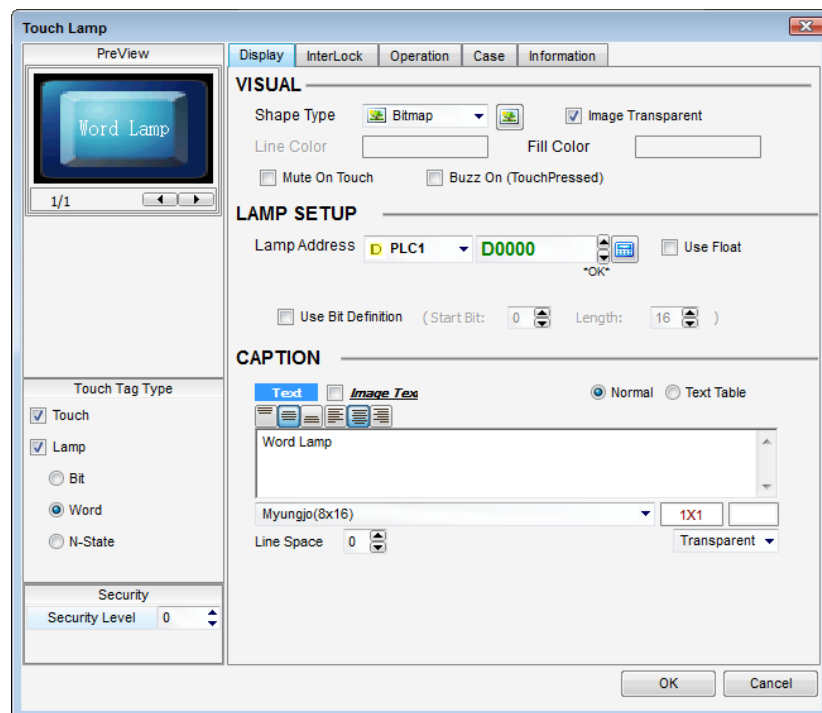
CHAPTER 15 – Touch + Word Lamp Tag

15.1 Outline of touch + Word Lamp Tag

Integrated tag with Touch tag and Word Lamp tag functions.

Property screen consists of [InterLock], [Operation] page, [Display] page which is the same as Bit Lamp tag and [Case] page.

So, refer to Touch tag and Bit Lamp tag regarding touch + Word Lamp tag.



[Figure. Touch + Word Lamp]

[Touch tag Type] is displayed when checks [Touch] and [Lamp] simultaneously, and [Word] is selected.

CHAPTER 16 Touch+ N-State Lamp Tag

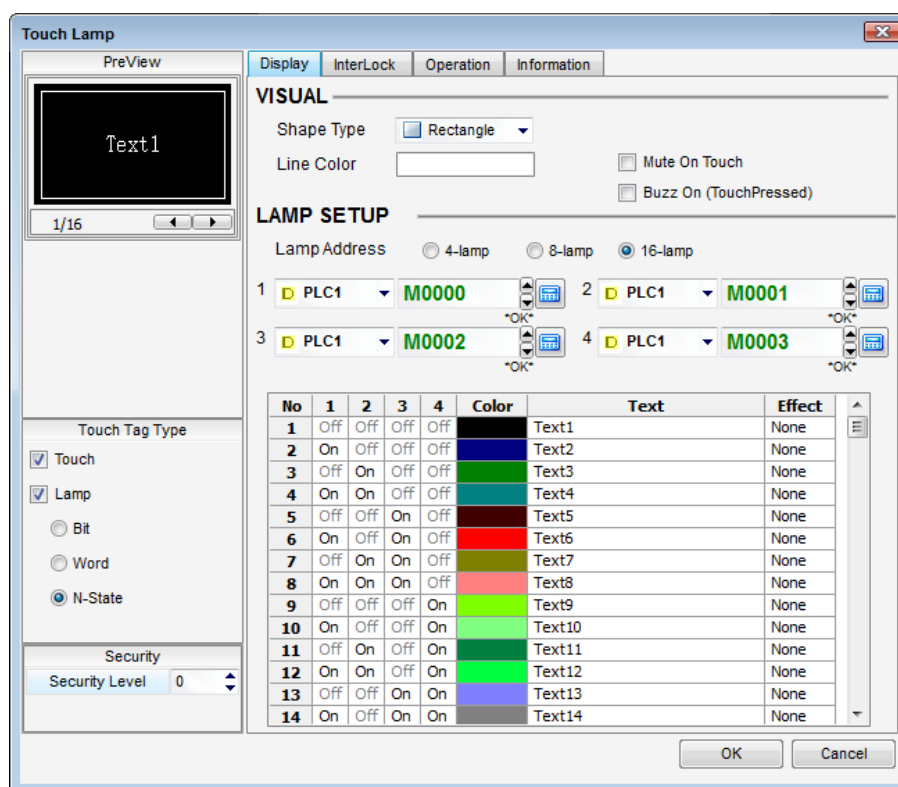
CHAPTER 16 – Touch + N-State Lamp Tag

16.1 Outline of touch + N Lamp Tag

Integrated tag with Touch tag and Word Lamp tag functions.

Property screen consists of [InterLock], [Operation] page, [Display] page which is the same as N-State Lamp.

So, refer to Touch tag and N-State Lamp regarding touch + N-State Lamp.



[Figure. Touch + N lamp]

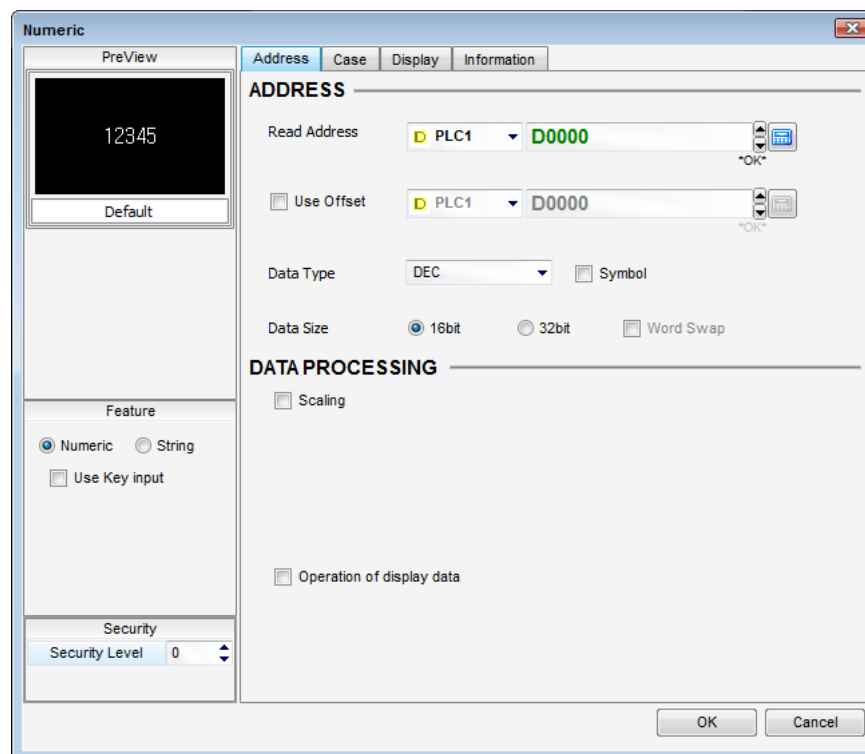
[Touch tag Type] is displayed when checks [Touch] and [Lamp] simultaneously, and [N status] is selected.

CHAPTER 17 Numeric Tag

17.1 Outline of Numeric Tag

Numeric tag displays data saved in address by number.

Can display the results by calculating additionally or word color of number and background color differently by setting condition.



[Figure. Property screen of Numeric tag]

Can change tag type in [Feature] at left center.

If selects [Numric], it becomes Numeric tag, if selects [String], it becomes character line.

At the time of selecting [Numric], if checks [Use Key Input], it becomes Keypad Display(Numeric), at the time of selecting [String], if checks [Use Key Input], it becomes Keypad Display(String).

17.2 Page composition of Numeric tag property screen

Property of Numeric tag consists of [Address], [Display] and [Information] page.

Property page	Explanation
Address page	Input the address to input, and sets data type and size. Also, apply additional operation to data of address and display its results.
Case page	Page to display color of number and background color differently along the conditions by using status of bit/word address as condition.
Display page	Page which designates displayed font of color and color and sets the type.
Information page	Page which displays data of Numeric tag. Displays the number of registered screen, tag ID, creating time, editing time, position and size information, and can edit position and size information.

17.3 Address page

Inputs address to display and sets type of data and size.

Also, apply additional operation to data of address and displays its results.

The screenshot shows the 'Address' page of the Numeric tag property screen. At the top, there are four tabs: 'Address', 'Case', 'Display', and 'Information'. The 'Address' tab is selected and highlighted with a red box. Below the tabs, the page is divided into two main sections: 'ADDRESS' and 'DATA PROCESSING'. The 'ADDRESS' section contains the following fields: 'Read Address' with a dropdown set to 'D PLC1' and a text field 'D0010'; 'Use Offset' with a dropdown set to 'D PLC1' and a text field 'D0000'; 'Data Type' set to 'DEC'; and 'Data Size' with radio buttons for '16bit' (selected) and '32bit', and a checkbox for 'Word Swap'. The 'DATA PROCESSING' section contains a checked checkbox for 'Scaling', two rows of input fields for 'Device' and 'Display' with 'Min' and 'Max' values (both set to 0 and 100), and a checked checkbox for 'Operation of display data' with a dropdown menu below it.

[Figure. Address page]

17.3.1 ADDRESS

Address setting		Explanation
Read Address		Input address to read.
Use Offset		<p>As a Numeric tag, displays data of address set in [Read Address], or uses it when displays data of next addresses.</p> <p>After checking [Use Offset], sets address. The value which adds data of set address to address number of [Read Address] becomes address to display in Numeric tag.</p> <p>For example, when [Read Address] is [D0010] and address of [Use Offset] is [D0200], if data of [D0200] is 10, Numeric tag displays data of address [D0010], if data of [D0200] is [21], Numeric tag displays data of [D0031].</p>
Data Type		<p>Selects data type from the list below.</p> <div> <p>DEC HEX BCD FLOAT BIN</p> </div> <p>[DEC] is decimal. [HEX] is hexadecimal. [BCD] is numeral system which uses one digit of decimal combining binary number 4 digits. Though it is actually hexadecimal, it is data which is used just like decimal because it does not show data containing A~F. [FLOAT] is data which can use decimal point, and [BIN] is binary number.</p>
Symbol		<p>Displays symbol in the displayed data. In case of not using symbol, data is displayed in positive only, in case of using symbol, data is displayed in both positive/negative.</p> <p>If wants to display negative data, has to check [symbol] definitely.</p>
Data Size	16bit	Uses size of data to display with 16bit.
	32bit	<p>Uses size of data to display with 16bit.</p> <p>Displays bigger data than 16bit data, or uses it in case of address of double word.</p>
Word swap		When [Data size] is 32bit, displays the positions of [Upper word(16bit0)] and [Bottom word(16bit0)] in reverse.

17.3.2 DATA PROCESSING

[DATA PROCESSING] does not display data of [Read Address] as it is, but displays changed data after applying additional processing to data. Actual data of [Read Address] is not changed, displayed data only is changed and displayed.

DATA PROCESSING

☒ Scaling

Device Min 0 Max 4000

Display Min 0 Max 100

☒ Operation of display data

DISPLAY DATA = Read Address + 50

[Figure. Data processing]

(1) Scaling

[Scaling] is the function which enlarges/shrinks data in proportion and displays it in maximum value/minimum value if it exceeds maximum value/minimum value.

Scaling	Explanation
Device	Actual data which is set in [Read] data. Sets Min. and Max. along range of address data.
Display	Inputs Min. and Max. of data to display in proportion of [Address value].


Displaying value is calculated as below.

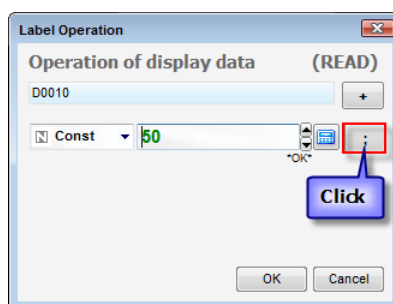
Displaying value = $[(\text{Max. of display value} - \text{Min. of display value}) / (\text{Max. of device} - \text{Min. of device value})] \times \text{address value}$.

For example, if Min. of [Device] value is [0], Max. is [4000], Min. of [Display] value is [0], Max. is [100], it becomes $[(\text{Max. of display value} - \text{Min. of display value}) / (\text{Max. of device} - \text{Min. of device value})] = (100 - 0) / (4000 - 0) = 1/40$. So, if [Device] value is [4000], it becomes [100] because [Display] value is $4000 \times (1/40)$, if [Device] value is [1000], [Display] value becomes [25] because it is $1000 \times (1/40)$. Also, if address value is less than [0], it displays [0], if [[Device] value is more than [4000], it displays [4000].

(2) Operation of display data


It is the function which applies additional operation to data and displays its results.

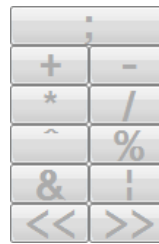
If checks [Operation of display data] and press  button, [Label operation] screen is displayed as figure below.



[Figure. Operating screen of number display]

Displays the set address in [Read Address] of first line.

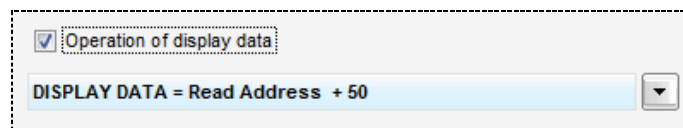
Adds the operation to next line by clicking  button and selecting calculation.



[Figure. Operation list]

Operation	Explanation
;	Means end of operation.
+	[Add] data of two operation addresses.
-	[Subtract] data of two operation addresses.
*	[Multiply] data of two operation addresses.
/	[Divide] data of two operation addresses.
^	Bit Statewhich calculates the value of binary number by [Bit XOR] operation.
%	Balance operation which calculates balance after dividing data of two operation addresses.
&	Bit Statewhich calculates the value of binary number by [bit AND] operation.
	Bit Statewhich calculates the value of binary number by [Bit OR] operation.
<<	Bit Statewhich operates [Bit left shift]. Implements bit shift the value of left operation to right as much value of right operation.
>>	Bit Statewhich operates [Bit right shift]. Implements bit shift the value of left operation to left as much value of left operation.

If adds the operation to [Label operation] screen and press [OK] button, operation is displayed in operating part of displaying data.



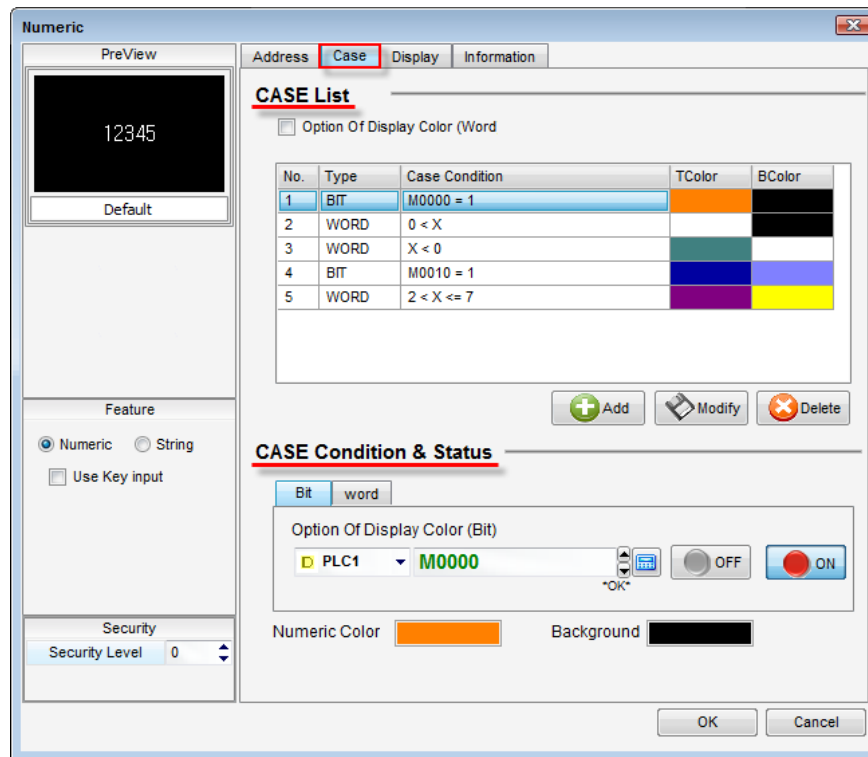
[Figure. Operation of display operation]

If sets it as above, data which always adds [50] to [D0010] of [Read Address] is displayed.

17.4 Case page

[Case] is the function which displays color of number and background color according to condition by using status of bit/word address as conditions.

If meets the condition of case set in [CASE List], data of [Read Address] is displayed into number color and background color set in the case.



[Figure. Case page]

17.4.1 CASE List

List of set condition.

[Case] can be set up to maximum 64.

If meets more than 2 condition out of set cases simultaneously, previously-registered case is applied.

(1) Case list

Registers it in base list by setting [Case].




No.	Type	Case Condition	TColor	BColor
1	BIT	M0000 = 1	Orange	Black
2	WORD	0 < X	White	Black
3	WORD	X < 0	Teal	White
4	BIT	M0010 = 1	Blue	Blue
5	WORD	2 < X <= 7	Purple	Yellow

[Figure. Case list]

Case	Explanation
No.	Sequential number registered in case.
Type	Displays if case is [Bit condition] or [Word condition].
Case Condition	Displays operating condition of case. In case of using address other than [Read Address], displays address too.
TColor	Displays number color of the case.
BColor	Displays number color of the case.

(2) Add/edit/delete case

[Add/edit/delete] case.


Case	Explanation
 Add	Adds case set in [CASE Condition & Status] to [Case list].
 Modify	Edits the selected case. After editing setting, case is changed if press [Mdfify] button.
 Delete	Deletes the selected case.




(3) Number display color option

When uses [Word condition] in case, it is the function which enables data of other address other than [Read Address] to be used as condition. If checks [Option Of Display Color(Word)], address input part is displayed.

If sets address, data of this address is used as condition of [Word condition].

CASE List
☒ Option Of Display Color (Word)

 PLC1
 D0000




OK

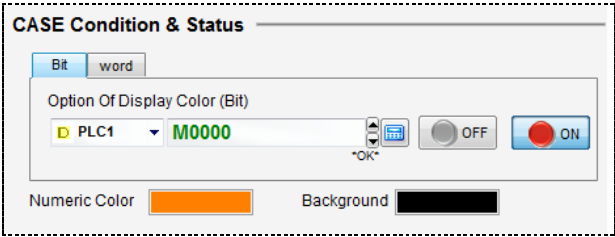
[Figure. Option Of Display Color(Word)]

17.4.2 CASE Condition & Status setting

Sets [Case]. There are largely [Bit] and [Word] condition cases in [Case].

(1) Bit case setting

Applies color of number and background color according to [ON/OFF] status of bit address.

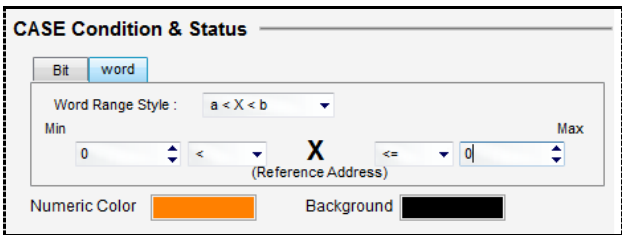


[Figure. Bit condition case]

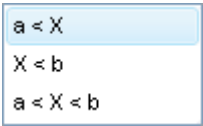
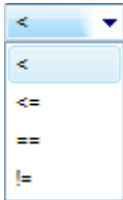
Bit condition	Explanation
Option Of Display Color (Bit)	Inputs address to use in case as bit condition.
OFF	When data of set address is OFF, case is applied.
ON	When data of set address is ON, case is applied.
Numeric Color	Sets number color to apply when case operates.
Background	Sets number color to apply when case operates.

(2) Word case setting

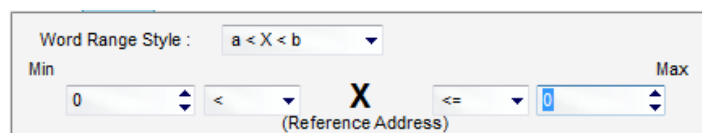
Changes number color and background color according to condition of data of word address.



[Figure. Word condition case]

Word condition	Explanation
Word Range Style	<p>[a] means minimum value, [X] means word address set display page and [b] means maximum value.</p>  <p>[a<X] is the condition which data is bigger than minimum value. [X<b] is the condition which data is smaller than maximum value. [a<X<b] is the condition which data is between minimum value and maximum value. [<] calculation can be selected out of several comparison calculations.</p>
Reference Address X	<p>It is a address input in [Read Address]. But if [Option Of Display Color(Word)] is checked, a address set in it becomes [Reference Addresss X].</p>
Min	Minimum value to compare in word condition. Sets a constant.
Max	Maximum value to compare in word condition. Sets a constant.
Calculation	<p>Sets calculation of condition.</p>  <p>[<] – Bigger or less, , [<=] – ‘Bigger or same’, or ‘less or same’ [==] – Same, [!=] – Not same</p>
Numric Color	Sets color of number to apply when case is operating.
Background	Sets background color to apply when case is operating.

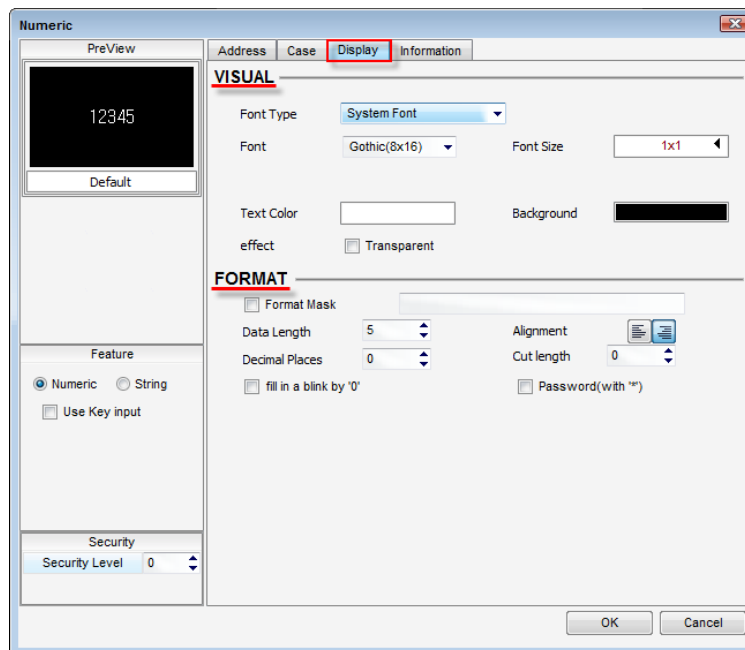
For example, if sets word case as below, Numeric tag is displayed in number color and background color set in case if data of address reference is bigger or same than [5] and less than [50].



[Figure. Operation example of word condition case]

17.5 Display page

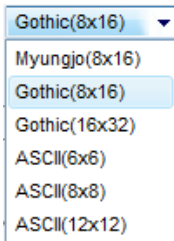
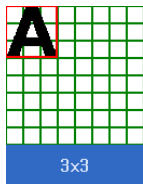
Page which sets font and color of number and display format.



[Figure. Display page]

17.5.1 VISUAL

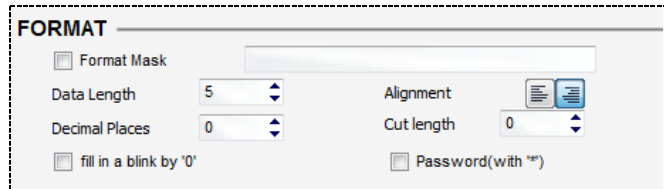
Sets font and color of number.

Display setting	Explanation
Font type (Pixel)	Sets font of number which is displayed. 
Font Size	Enlarges size of width/length as much as size of selected font from fonts. 
Text Color	Sets color of number which displays number.
Background	Sets background color which displays number.

effect	If checks [In transparent], background of number which displays number is displayed in transparent.
--------	---

17.5.2 FORMAT

Sets display format of number.



[Format. Format setting]

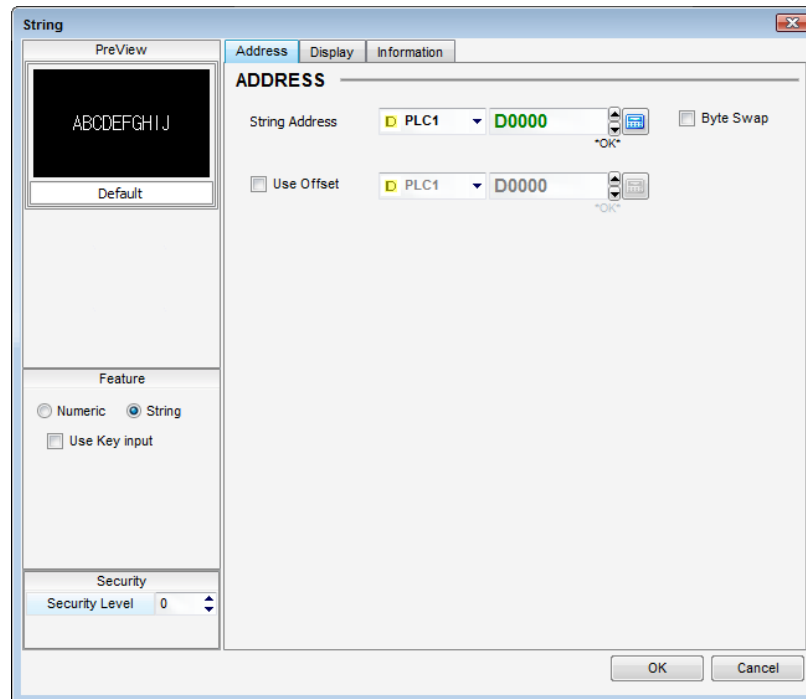
Format	Explanation
Formet Mask	Sets format of number which is displayed. Can insert texts in the middle with number. Input data by [*] and text to display together. For example, if inputs [**/**version] and data is 12345, Numeric tag displays [12/345version].
Data Length	Sets length of data to display.
Alignment	Selects one out of left sorting or right sorting.
Decimal Places	Sets decimal point to display. For example, if [Decimal point] is [3] and data is [12345], Numeric tag displays [12.345].
Cut Length	Cuts displayed number as much as length to cut from lower digit. For example, [Length to cut] is 2 and data is [12345], [123] is displayed.
Fill in a blank by '0'	Displays empty digit with '0'. If [Data length] is [3] and data is [3], [003] is displayed.
Password (with '*')	Displays data with '*'. If [Data length] is [3] and data is [3], [003] is displayed.

CHAPTER 18 String Tag

CHAPTER 18 – String Tag

18.1 Outline of String Tag

String tag is the function which displays data with ASCII in screen.



[Figure. Property screen of String tag]

Can change tag type in [Feature] at left center.

If selects [Numeric], it becomes Numeric tag, if selects [String], it becomes String tag.

At the time of selecting [Numeric] if checks [Use Key input], it becomes Keypad Display(Numeric),
at the time of selecting [String] if checks [Use Key Input], it becomes Keypad Display(String).

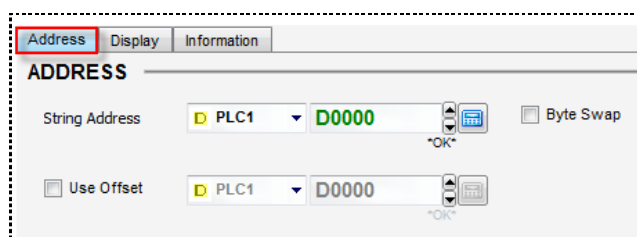
18.2 Page composition of String tag property screen

Property screen of String tag consists of [Address], [Display] and [Information] pages.

Property page	Explanation
Address page	Page which sets address of Sting tag to read.
Display page	Page which sets font and color of character line.
Information page	Page which displays data of String tag. Displays the number of registered screen, tag ID, creating time, editing time, position and size information, and can edit position and size information.

18.3 Address page

Sets address of String tag to read.

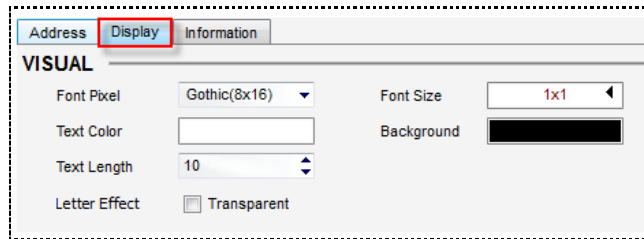


[Figure. Address page]

Address page	Explanation
String Address	Sets start address of address to display character line. One word address can save 2 English letters. If wants to read character line more than 2 letters, has to read next addresses to set address in [String Address].
Use Offset	As one String tag, it is used when displays data of set address in [String Address], or when data of the next addresses. After checking [Use Offset], sets address. The value which adds data of set address to address number of [String Address] becomes the address to display in String tag. For example, when [String Address] is [D0020], address of [Use Offset] is [D0300], if data is [0], character tag displays data from [D0020], if data of [D0300] is [21], and it displays data from [D0041].
Byte Swap	Can change the position of character save in address. If checks [Byte Swap], data saved in [AB] is displayed by [BA], [ABCDEF] displays [BADCFE].

18.4 Display page

Sets number of letters, font and color of character line.



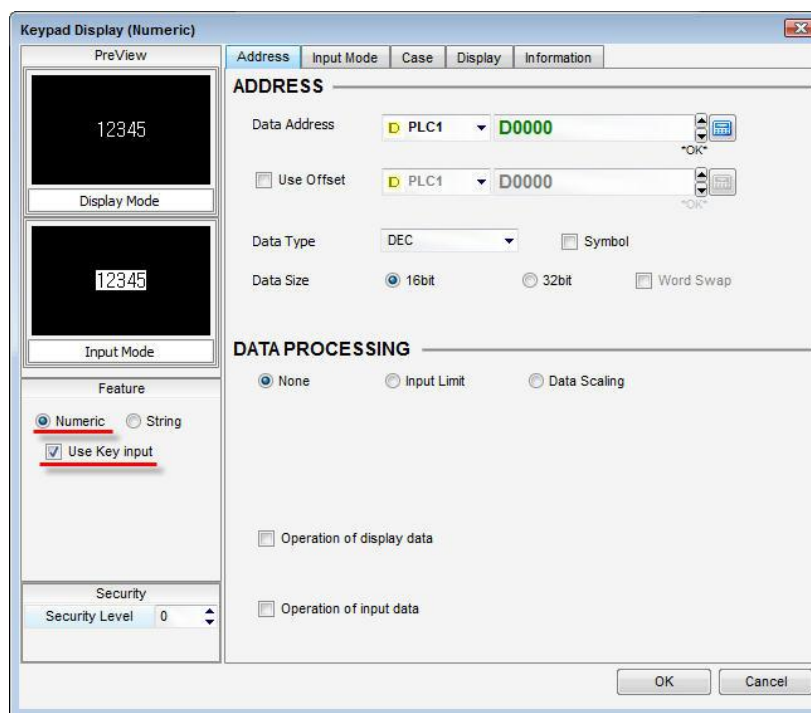
[Figure. Page of display]

Display setting	Explanation
Font Pixel	<p>Sets font of number which is displayed.</p>
Font Size	<p>Enlarges size of width/length as much as size of selected font from fonts.</p>
Text Color	Sets color of number which displays number.
Background	Sets background color which displays number.
Letter Effect	If checks [transparent], background of number which displays number is displayed in transparent.

CHAPTER 19 Numeric KeyDisplay Tag

19.1 Outline of Numeric KeyDisplay Tag

[Numeric KeyDisplay Tag] input data in set address and displays input data with number.
Inputs data using keypad(Tenkey), if [ENTER] key is input, records the input data in the address.



[Figure. Property screen of Numeric KeyDisplay Tag]

Can change tag type in [Feature] at left bottom.

If selects [Numeric], it becomes Numeric tag, if selects [String], it becomes String tag.

At the time of selecting [Numeric], if checks [Use Key Input], it becomes Numeric KeyDisplay Tag, at the time of selecting [String], if checks [Use Key Input], it becomes String KeyDisplay Tag.

19.2 Page composition of Numeric KeyDisplay Tag

Property screen of Numeric KeyDisplay Tag consists of [Address], [Input mode], [Case], [Display] and [Information] pages.

Property page	Explanation
Address page	Input the address to input, and sets data type and size. Also, apply additional operation to data of address and display its results.
Input mode page	Page which sets condition of [Input mode] that can input data with keypad.
Case page	Page to display color of number and background color differently along the conditions by using status of bit/word address as condition.
Display page	Page which designates displayed font of color and color and sets the type.
Information page	Page which displays data of Keypad Display(Numeric) tag. Displays the number of registered screen, tag ID, creating time, editing time, position and size information, and can edit position and size information.

19.3 Address page

Page which sets address and data operation.

The screenshot shows the 'Address' page of the Numeric KeyDisplay Tag property screen. The page has a tabbed interface with 'Address' selected. The 'ADDRESS' section contains the following fields and options:

- Data Address:** A dropdown menu set to 'D PLC1' and a text field containing 'D0000'. There is an 'OK' button next to the text field.
- Use Offset:** A checkbox that is unchecked. Below it, a dropdown menu is set to 'D PLC1' and a text field contains 'D0000'. There is an 'OK' button next to the text field.
- Data Type:** A dropdown menu set to 'DEC'. To its right is a checkbox labeled 'Symbol' which is unchecked.
- Data Size:** Three radio buttons: '16bit' (selected), '32bit', and 'Word Swap' (unchecked).

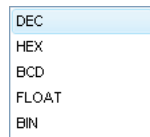
The 'DATA PROCESSING' section contains the following options:

- Three radio buttons: 'None' (selected), 'Input Limit', and 'Data Scaling'.
- A checkbox labeled 'Operation of display data' which is unchecked.
- A checkbox labeled 'Operation of input data' which is unchecked.

[Figure. Address page]

19.3.1 ADDRESS

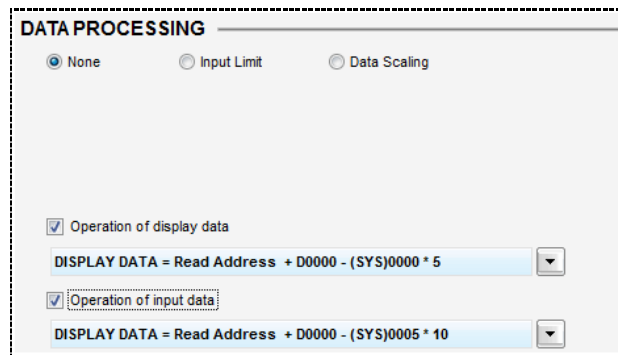
Inputs data and sets address to display.

Address setting		Explanation
Data Address		Input address to read and write.
Use Offset		<p>As a Numeric tag, displays data of address set in [Data Address], or uses it when displays data of next addresses.</p> <p>After checking [Use Offset], sets address. The value which adds data of set address to address number of [Data Address] becomes address to display in Numeric tag.</p> <p>For example, when [Data Address] is [D0010] and address of [Use Offset] is [D0200], if data of [D0200] is 10, Numeric tag displays data of address [D0010], if data of [D0200] is [21], Numeric tag displays data of [D0031].</p>
Data Type		<p>Selects data type from the list below.</p> <div>  </div> <p>[DEC] is decimal. [HEX] is hexadecimal. [BCD] is numeral system which uses one digit of decimal combining binary number 4 digits. Though it is actually hexadecimal, it is data which is used just like decimal because it does not show data containing A~F. [FLOAT] is data which can use decimal point, and [BIN] is binary number.</p>
Symbol		<p>Displays symbol in the displayed data. In case of not using symbol, data is displayed in positive only, in case of using symbol, data is displayed in both positive/negative.</p> <p>If wants to display negative data, has to check [Symbol] definitely.</p>
Data Size	16bit	Uses size of data to display with 16bit.
	32bit	<p>Uses size of data to display with 16bit.</p> <p>Displays bigger data than 16bit data, or uses it in case of address of double word.</p>
Word Swap		When [Data size] is 32bit, displays the positions of [Upper word(16bit0)] and [Bottom word(16bit0)] in reverse.

19.3.2 DATA PROCESSING

[DATA PROCESSING] is used when inputs processing to the input data additionally.

Data processing is [Input Limit], [Data Scaling], [Operation of display data] and [Operation of input data].



[Figure. Display, input data processing]

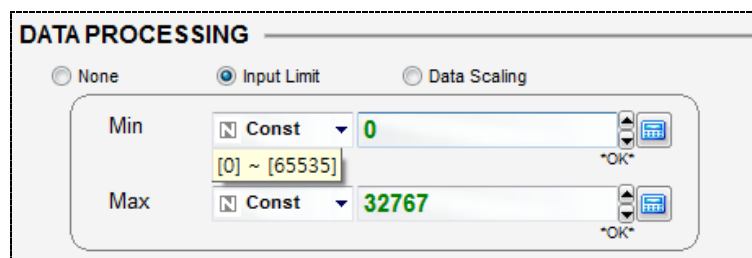
(1) None

Input the input data to the set address as it is without data processing.

(2) Input Limit

Sets range of data which can be input using keypad.

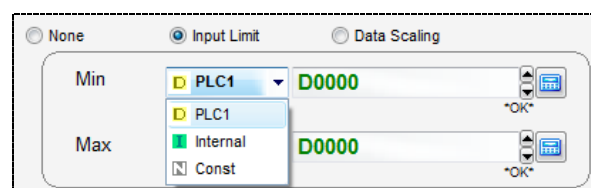
If input value exceeds set range, the value is not saved.



[Figure. Input Limit]

Part	Explanation
Min.	Sets Min.value which can be input.
Max.	Sets Max.value which can be input.

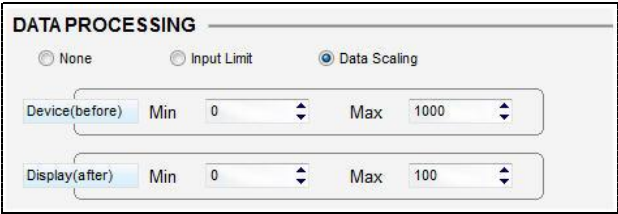
Min./Max. enables themselves to be fluid by setting address as well as [Constant].



[Figure. Input Limit]

(3) Data Scaling

[Data Scaling] is the function which enlarges/shrinks input data with Numeric KeyDisplay Tag and save it in the address. Proportion value is calculated in input range of [Device(before)] and [Display(after)]. Also, if value to input exceeds range of [Display(after)], it disables it to be input.



[Figure. Data Scaling]


If inputs data, [Input data] becomes [Display(after)] value which Numeric KeyDisplay Tag displays. If sets figure above, range of data which can be input with Numeric KeyDisplay Tag is [1~100] which is [Display(after)]. If it exceeds this range of data, cannot input.

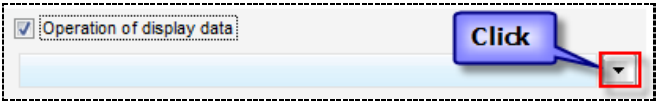
But, [Device(before)] to be saved in address actually is saved after scaling.
Device value is calculated as following.
Address value = [(Max.of device value – Min.of device value)/(Max.of display value – Min. of display value)] x input data.

If [Device(before)] is [10~1000], [Display(after)] is [1~100], inputs [50], Keypad Display(Numeric) displays [50], and [(1000–10)/(100–1)x50 = 500] is saved in the address.

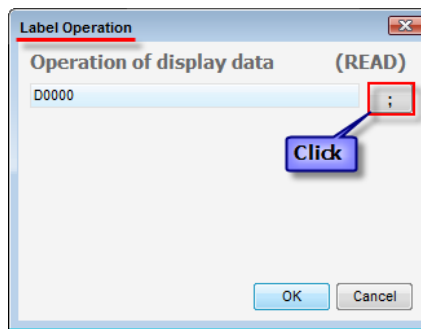
Data Scaling	Explanation
Device(before)	Actual data which is set in [Read] data. Sets Min. and Max. along range of address data.
Display(after)	Inputs Min. and Max. of data to display in proportion of [Address value].

(4) Operation of display data

[Operation of display data] is the function which applies additional operation to data and displays its results. If checks [Operation of displaying data] and press  button, [Label Operation] screen is displayed as figure below.



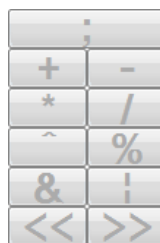
[Figure. Operation of display data]



[Figure. Label Operation display]

Set address is displayed in [Data address] at first line.

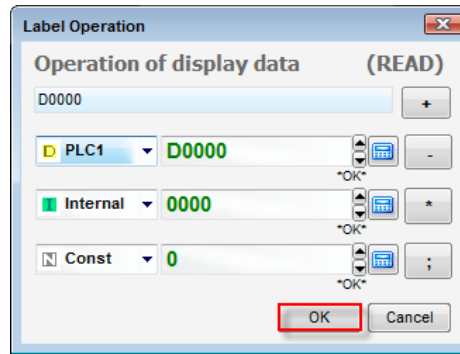
Selects operation by clicking  button, and adds the operation to next line.



[Figure. Operation list]

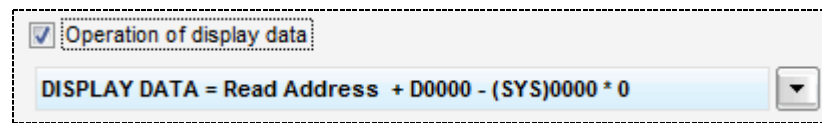
Operation	Explanation
;	Means end of operation.
+	[Add] data of two operation addresses.
-	[Subtract] data of two operation addresses.
*	[Multiply] data of two operation addresses.
/	[Divide] data of two operation addresses.
^	Bit Statewhich calculates the value of binary number by [Bit XOR] operation.
%	Balance operation which calculates balance after dividing data of two operation addresses.
&	Bit Statewhich calculates the value of binary number by [bit AND] operation.
	Bit Statewhich calculates the value of binary number by [Bit OR] operation.
<<	Bit Statewhich operates [Bit left shift]. Implements bit shift the value of left operation to right as much value of right operation.
>>	Bit Statewhich operates [Bit right shift]. Implements bit shift the value of left operation to left as much value of left operation.

Completes operation in [Label Operation] using operation and address.



[Figure. Operation of display data]

If adds operation in [Label Operation] and press [OK] button, operation is displayed in operating part of display data.




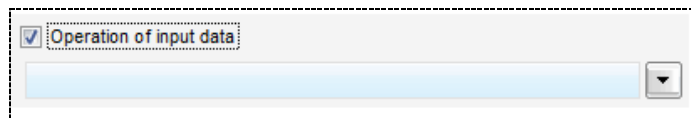
[Figure. Operation of display data]

If sets it as above, always adds data of [D0020] to data [D0010] of [Data address], subtracts data of address [0000] from the results, displays multiplies the results by [2].

Calculation is done by input sequence without priority of the four rules of arithmetic.

(5) Operation of input data

[Operation of input data] is the function which applies additional operation to input data and saves its results in the address. Checks [Operation of input data], sets the operation in [Label Operation] which is shown by pressing  button.



[Figure. Operation of input data]

How to add operation is the same way of [Operation of display data].



[Figure. Operation of input data]

If sets it as above, input data is saved in [Data address] adding [50] always.

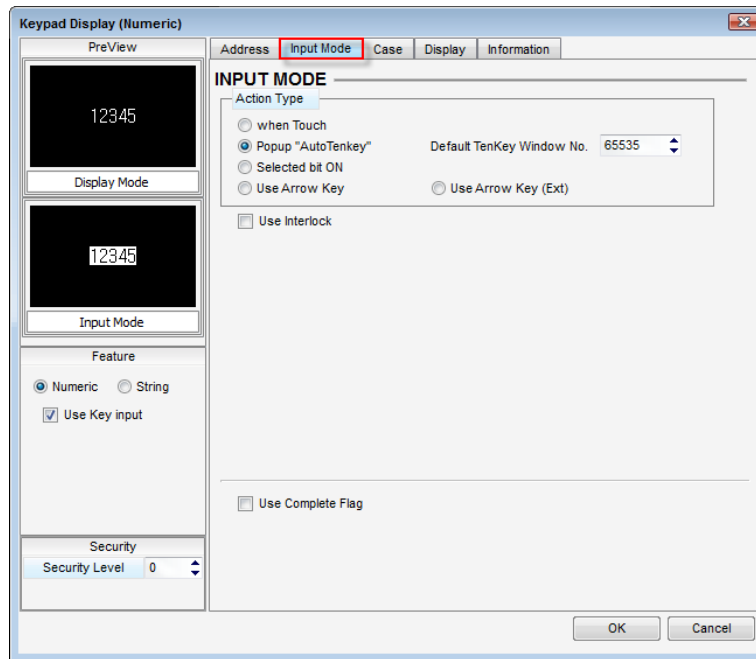
Calculation is done by input sequence without priority of the four rules of arithmetic.

19.4 Input mode page

Keypad Display(Numeric) has the status of [Input mode] and [Display mode].

[Display mode] is the status of display data of set address, and [Input mode] is status which can receive data of keypad(Tenkey). Given that there is one key display tag with condition of [Input mode] in one screen, key display tag which was in existing [Input mode] is converted to [Display mode].

Sets the condition which changes Keypad Display(Numeric) to [Input mode] in [Input mod] page.



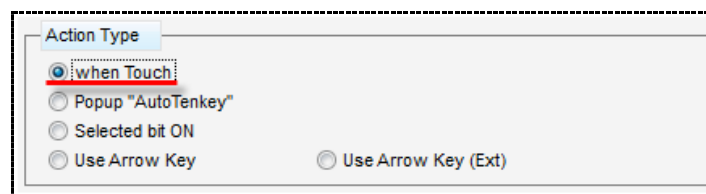
[Figure. Input mode page]

19.4.1 INPUT MODE

There are [When Touch], [Pop "Auto Tenkey"], [Selected bit ON], [Use Arrow Key] and [Use Arrow Key(Ext)] regarding [Input mod] treating setting.

(1) When touch

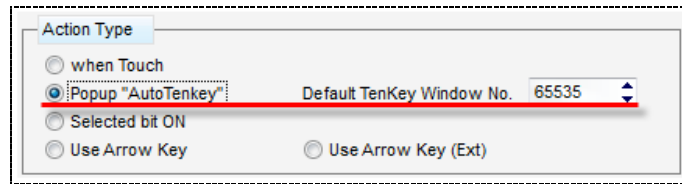
Converts it to [Input mode] when touches number key display.



[Figure. When touch]

(2) Popup “Auto Tenkey”

When touches number key display, it is converted automatically.



[Figure. Popup “Auto Tenkey”]

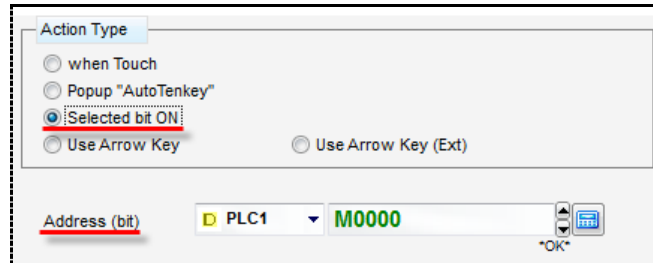
[Default Tenkey Window No.] is set as [65535] basically, window screen [65535] is the display which is created when project is created.

If wants popup in other window screen, composed of new window screen, it is OK to input window screen number to [Default Tenkey Window No.].

(3) Selected bit ON

Converts it to [Input mode] at the time data of set bit address is [ON].

If data is input, [Enter] key is input and data of bit address gets [OFF], it converts it to [Display mode] again.



[Figure. Selected bit ON]

(4) Use Arrow Key

When multiple Numeric KeyDisplay Tag are used in one screen, moves [Input mode] using right/left/up/down direction keys.

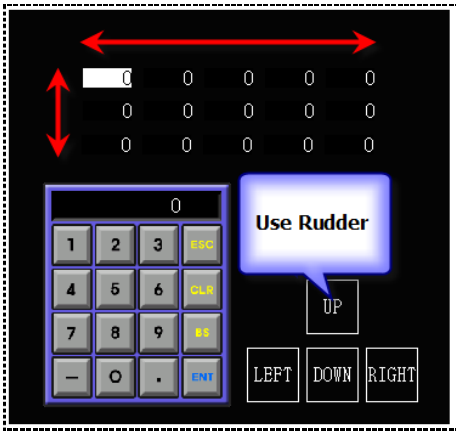
If right/left/ up/down direction keys are made to be applied, have to set conditional bit address of multiple Numeric KeyDisplay Tag, and the address has to be [ON].

At the moment of being [ON], most prior Numeric KeyDisplay Tag in [Key input sequence] is converted to [Input mode], If it is [OFF] or [ESC] key is input, Numeric KeyDisplay Tag in [Input mode] is converted to [Display] mode.

Also, when conditional bit address set as [Direction key] is status of [ON], if touches Numeric

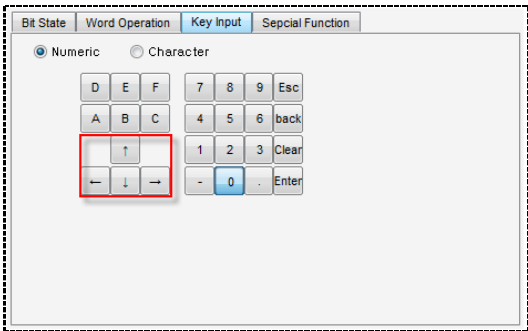
KeyDisplay Tag one, it is converted to [Input mode], if touches once again, it is converted to [Display mode].

If presses right/left/ up/down direction keys, [Input mode] is moved.



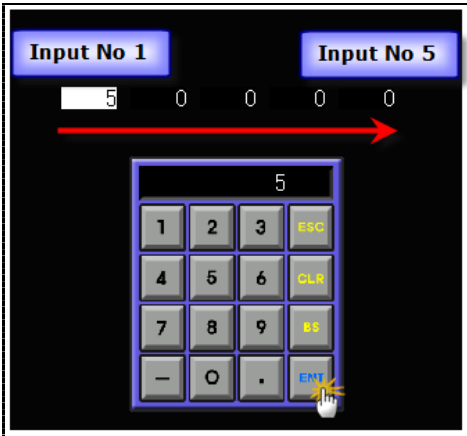
[Figure. Use Arrow key]

Direction keys are registered using Touch tag. It is registered in [Key input] of [Operation] page.



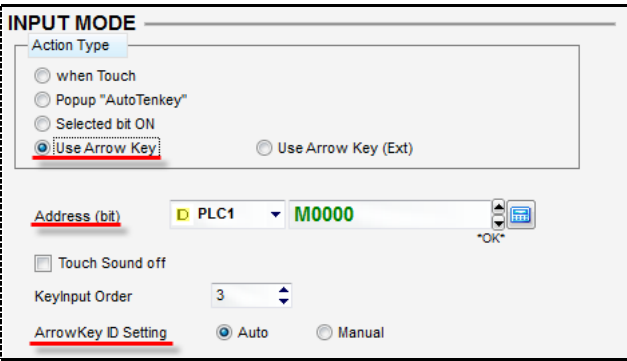
[Figure. Register direction key]

If [ENTER] key which completes input is input, the input data is save in the address, [Input mode] is moved to the next along [Key input sequence].



[Figure. When inputs ENTER key]

Direction keys are set as following.



[Figure. Use Arrow key]

User arrow key		Explanation
Address(bit)		Sets bit address to use as condition of direction keys. Sets all Numeric KeyDisplay Tag to use as direction keys in one screen to be the same.
Touch sound off		When [Address(bit)] is status of [ON], if touches Numeric KeyDisplay Tag, [Input mode] and [Display mode] are converted each other, at this time, [Beep] touch sound is not sounded.
Key input Order		If [ENTER] key is input, input mode is moved along key input sequence. At the moment [Address(bit)] is [ON], most prior Keypad Display(Numeric) in [Key input Order] is converted to input mode.
ArrowKey ID setting	Auto	If presses right/left/upper/down direction keys to move [Input mode], input mode is moved along position of Numeric KeyDisplay Tag. That is, if presses up direction key, it moves to Numeric KeyDisplay Tag which is positioned at higher place than current Numeric KeyDisplay Tag. Also, if [Enter] is pressed, input mode is moved along [Key input Order].
	Manual	When presses right/left/up/down direction keys and [Enter] key, sets the sequence of Numeric KeyDisplay Tag to become status of [Input mode]. <div></div> [Next ID] is ID of each Numeric KeyDisplay Tag. If ID is the number which is marked with registered sequence, it is shown in Information.

(5) Use Arrow Key(Ext)

[Use Arrow Key(Ext)] operates in the same way of [Use Arrow Key].

But, applying range of direction keys is extended.

[Use Arrow Key] is applied in Numeric KeyDisplay Tag only which uses the same bit address, though [Use Arrow Key(Ext)] is different from bit address, if it is [ON] status, direction keys are applied.

[Figure. Use Arrow Key(Ext)]

(6) Use interlock and input complete bit

[Use Interlock] can be used only in case of [When touch] and [Popup "Auto Tenkey"].

If data of conditional bit address is [OFF], Numeric KeyDisplay Tag of [Interlock] does not work, if it is [ON], it works.

[Figure. Use interlock]

[Use Complete Flag] is used when checks if data input is completed.

If the input data is input in the address, data of address(bit) is [ON].

[Figure. Use Complete Flag]

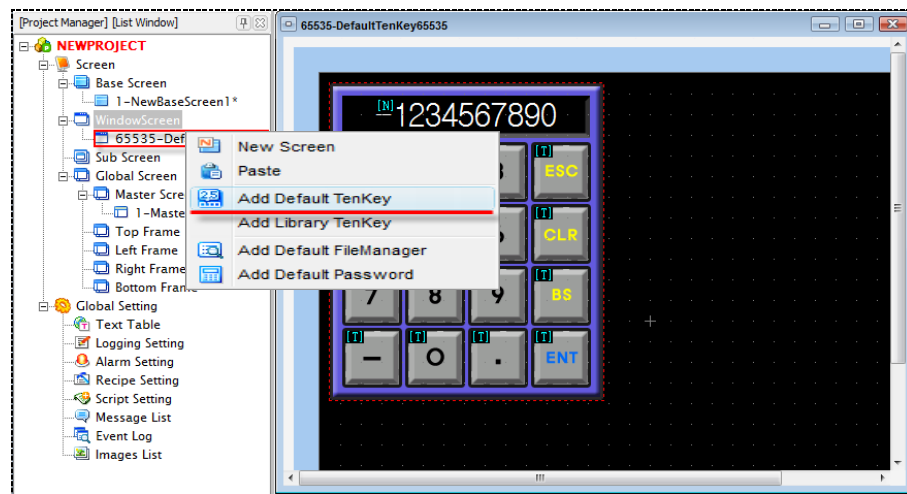
Data which becomes [ON] once is not converted to [OFF] automatically.

19.4.2 Register keypad(Tenkey)

Explain how to register the keypad used in Numeric KeyDisplay Tag and String KeyDisplay Tag.

(1) Basic Tenkey No. 65535

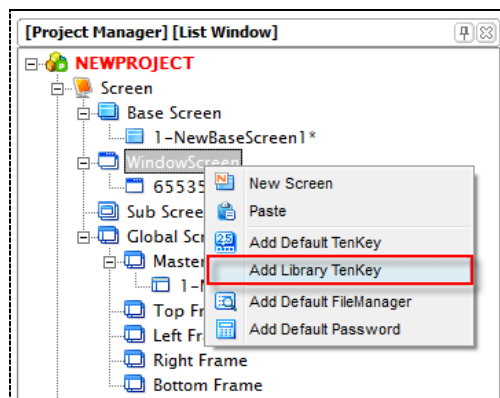
If creates new project, window screen No. 65535 called [Default TenKey65535] is created in [Window Screen] basically. In case of deleting this window screen, it can be recreated using [Add Dafault TenKey] menu in [Window Screen] popup menu.



[Figure. Default Tenkey window]

(2) Add it to window screen with Tenkey library

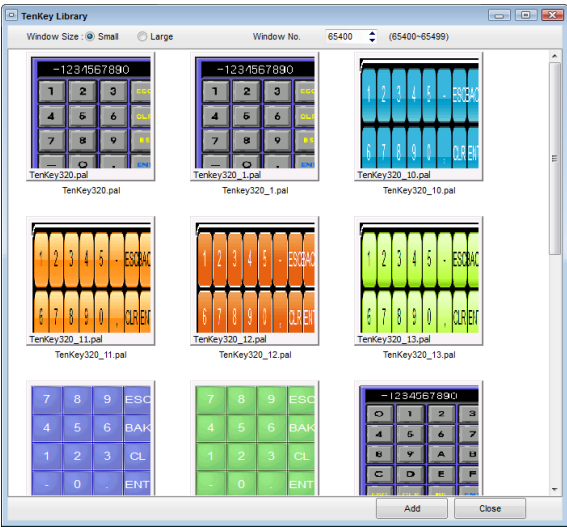
Tenkey can be added in [Project Manager]. If clicks [Window Screen] of [Project Manager] with right button of mouse, popup menu appears as below figure.



[Figure. Add Library Tenkey]

If presses [Add Library Tenkey] of popup menu, [Tenkey Library] appears.

If selects the desire Tenkey and presses [Add] button after input window number, Tenkey is added in [Window Screen].



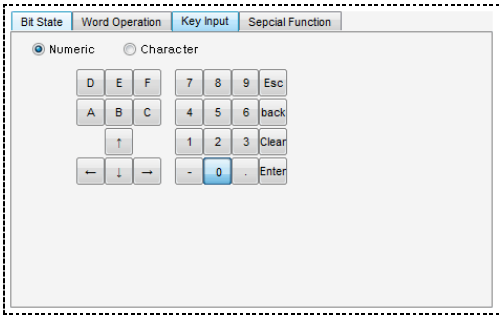
[Figure. Tenkey Library]

Part		Explanation
Window Size	Small	Enumerate small size of Tenkey list.
	Large	Enumerate large size of Tenkey list.
Window No.		Selects the number of window screen to be created by register of Tenkey. Number of window screen for Tenkey uses 65400 to 65499.
Add		Adds the selected Tenkey to window screen.
Close		Closes Tenkey library.

(3) Register keypad in base screen

If wants to register keypad in base screen, there are ways which copies Tenkey of window screen registered in Tenkey library and pastes it to base screen, or which makes it using Touch tag in person.

(☞ Refer to [13.5.2] of [Chapter 13] regarding explanation on each key.)

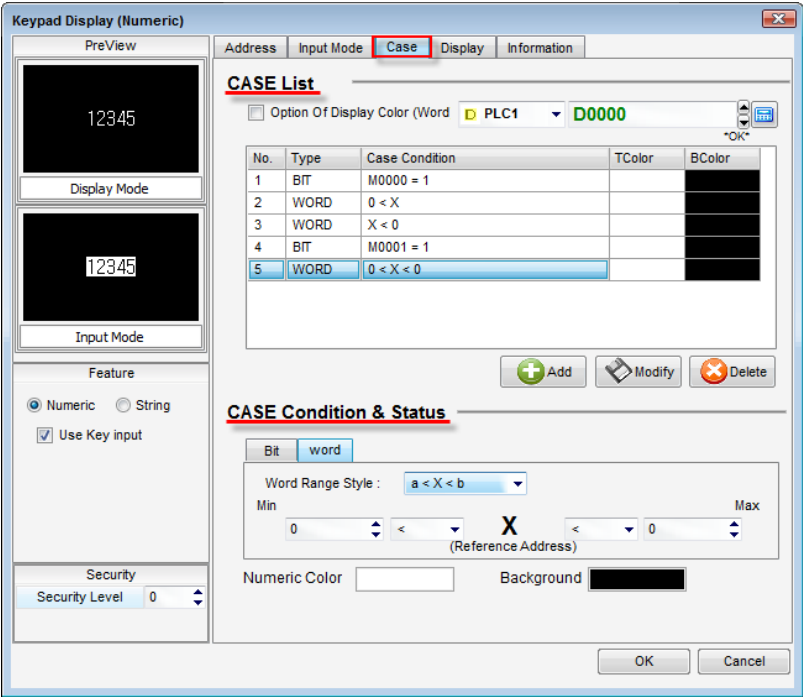


[Figure. Key registration of Touch tag operation]

19.5 Case page

[Case] is the function which displays color of number and background color according to condition by using status of bit/word address as conditions.

If meets the condition of case set in [CASE List], data of [Data Address] is displayed into number color and background color set in the case.



[Figure. Case page]

19.5.1 CASE List

List of set case.

[Case] can be set up to maximum 64.

If more than 2 conditions are met at a time out of set cases, priory-registered case is applied.

(1) Case list




No.	Type	Case Condition	TColor	BColor
1	BIT	M0000 = 1	Orange	Black
2	WORD	0 < X	Yellow	Black
3	WORD	X < 0	Green	Black
4	WORD	0 < X < 0	Green	Black

[Figure. Case list]

Case	Explanation
No.	Sequence case is registered.
Type	Displays if the case is [Bit condition] or [Word condition].
Case Condition	Displays operating condition of case. In case of using other address than [Data address], it is displayed with different address.
TColor	Displays number color of the case.
BColor	Displays background color of the case.

(2) Add/Modify/Delete case

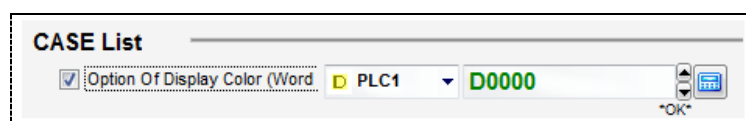
[Add/Modify/Delete] case.

Case	Explanation
 Add	Add case set in [CASE Condition & Status] to [Case list].
 Modify	Edits the selected case. If presses [Modify] button after changing setting, case is changed.
 Delete	Deletes the selected case.

(3) Option Of Display Color(Word)

When uses [Word condition] in case, it is the function which enables data of other address other than [Data Address] to be used as condition. If checks [Option Of Display Color(Word)], address input part is displayed.

If sets address, data of this address is used as condition of [Word condition].



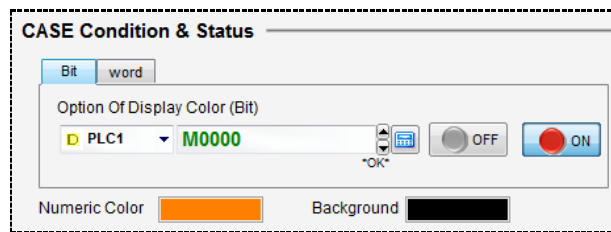
[Figure. Option Of Display Color(Word)]

19.5.2 CASE Condition & Status

Sets [Case]. There are largely [Bit] and [Word] condition cases in [Case].

(1) Bit Statecase setting

Sets colors and background colors along [ON/OFF] status of bit address.

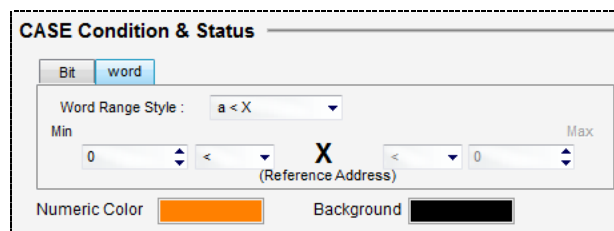


[Figure. Bit condition case]

Bit condition	Explanation
Option Of Display Color (Bit)	Inputs the address to use as bit condition in case.
OFF	When data of set address is OFF, the case is applied.
ON	When data of set address is ON, the case is applied.
Numeric Color	When case is under operation, sets number color to apply.
Background	When case is under operation, sets background color to apply.

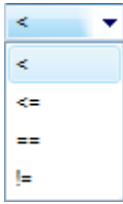
(2) Word operation case setting

Changes number colors and background colors along condition of data of word address.

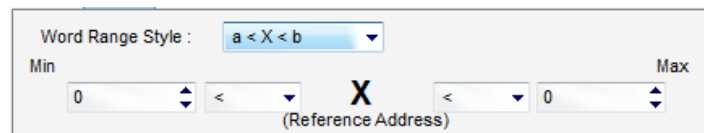


[Figure. Word condition case]

Word condition	Explanation
Word Range Style	<p>[a] means minimum value, [X] means word address set display page and [b] means maximum value.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>a < X</p> <p>X < b</p> <p>a < X < b</p> </div> <p>[a<X] is the condition which data is bigger than minimum value.</p> <p>[X<b] is the condition which data is smaller than maximum value.</p> <p>[a<X<b] is the condition which data is between minimum value and maximum value.</p> <p>[<] calculation can be selected out of several comparison calculations.</p>
Calculation X	<p>It is a address input in [Read Address].</p> <p>But if [Option Of Display Color(Word)] is checked, a address set in it becomes [Reference Addresss X].</p>
Min	Minimum value to compare in word condition. Sets a constant.

Max	Maximum value to compare in word condition. Sets a constant.
Calculation	<p>Sets calculation of condition.</p>  <p>[<] – Bigger or less, [, <=] – ‘Bigger or same’, or ‘less or same’ [==] – Same, [!=] – Not same</p>
Number Color	Sets color of number to apply when case is operating.
Background	Sets background color to apply when case is operating.

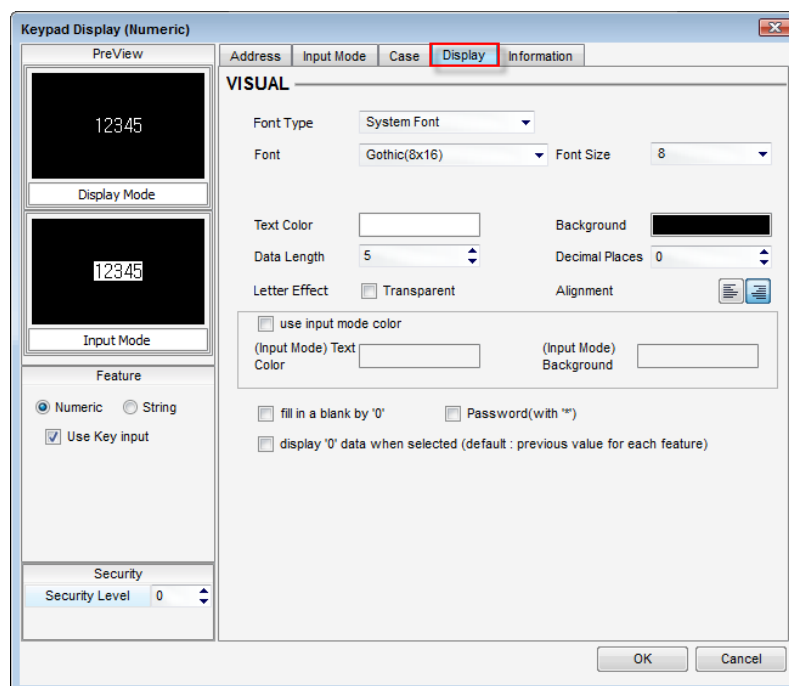
For example, if sets word case as below, Numeric tag is displayed in number color and background color set in case if data of address reference is bigger or same than [5] and less than [50].



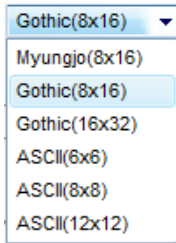
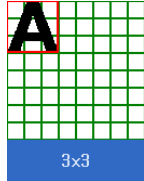
[Figure. Word condition case operation]

19.6 Display page

Page which sets font and color of number and display format.



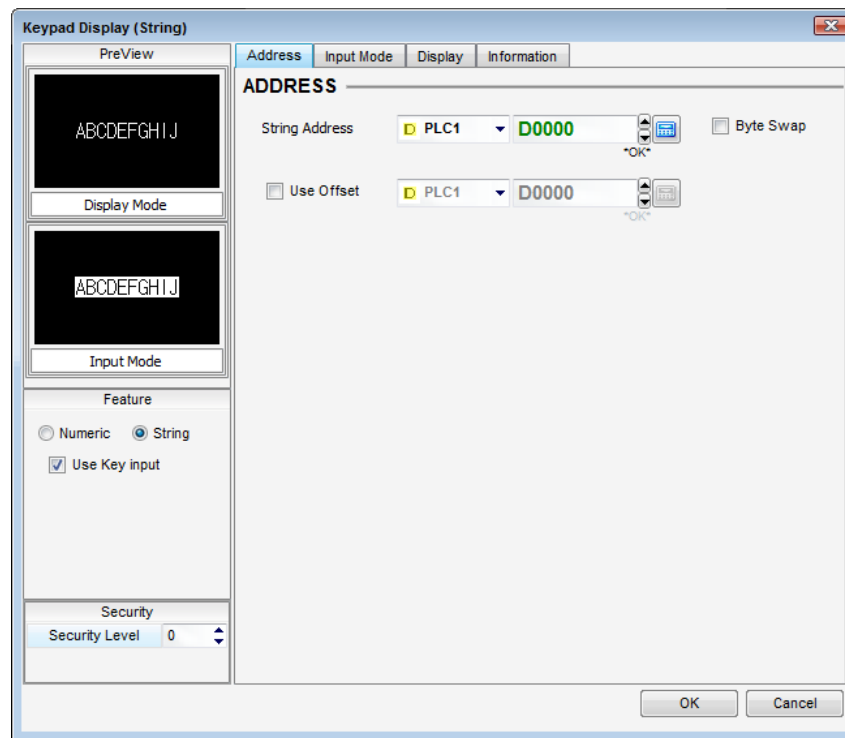
[Figure. Display page]

Display setting	Explanation
Font Type (Pixel)	<p>Sets font of number which is displayed.</p> 
Font Size	<p>Enlarges size of width/length as much as size of selected font from fonts.</p> 
Text Color	Sets color of number which displays number.
Background	Sets background color which displays number
Data Length	Sets total digits of number to display.
Decimal Places	Sets decimal point to display. For example, if [Decimal point] is [3] and data is [12345], Numeric tag displays [12,345].
Letter Effect	If checks [In transparent], background of number which displays number is displayed in transparent.
Alignment	Selects one out of left sorting or right sorting.
Use input mode color	Sets font color and background color of number when it is input mode.
(Input Mode)Text Color	Sets font color when it is converted to input mode.
(Input Mode) Background	Sets background color when it is converted to input mode.
Fill in a blank by '0'	<p>Displays empty digit with '0'.</p> <p>If [Data length] is [3] and data is [3], [003] is displayed.</p>
Password (with '*')	Displays data with '*'.
Display '0' data when selected	Displays [0] when it becomes input mode.

CHAPTER 20 Keypad Display(String)

20.1 Outline of Keypad Display(String)

Keypad Display(String) inputs ASCII to address, and displays input characters in screen.



[Figure. Property screen of Keypad Display(String)]

Can change tag type in [Feature] at left center.

If selects [Numeric], it becomes Numeric tag, if selects [String], it becomes character line.

At the time of selecting [Numeric], if checks [Use Key Input], it becomes Keypad Display(Numeric), at the time of selecting [String], if checks [Use Key Input], it becomes Keypad Display(String).

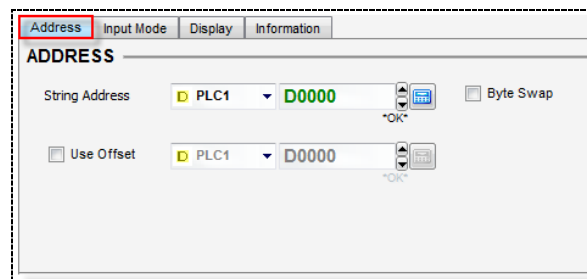
20.2 Page composition of Keypad Display(String)

Property screen of Keypad Display(String) consists of [Address], [Input mode], [Case], [Display] and [Information] pages.

Property page	Explanation
Address page	Input the address to input.
Input mode page	Page which sets condition of [Input mode] that can input data with keypad.
Case page	Page to display color of text and background color differently along the conditions by using status of bit/word address as condition.
Display page	Page which designates displayed font of color and color and sets the type.
Information page	Page which displays data of Keypad Display(String) tag. Displays the number of registered screen, tag ID, creating time, editing time, position and size information, and can edit position and size information.

20.3 Address page

Page which sets address to input characters.



[Figure. Address page]

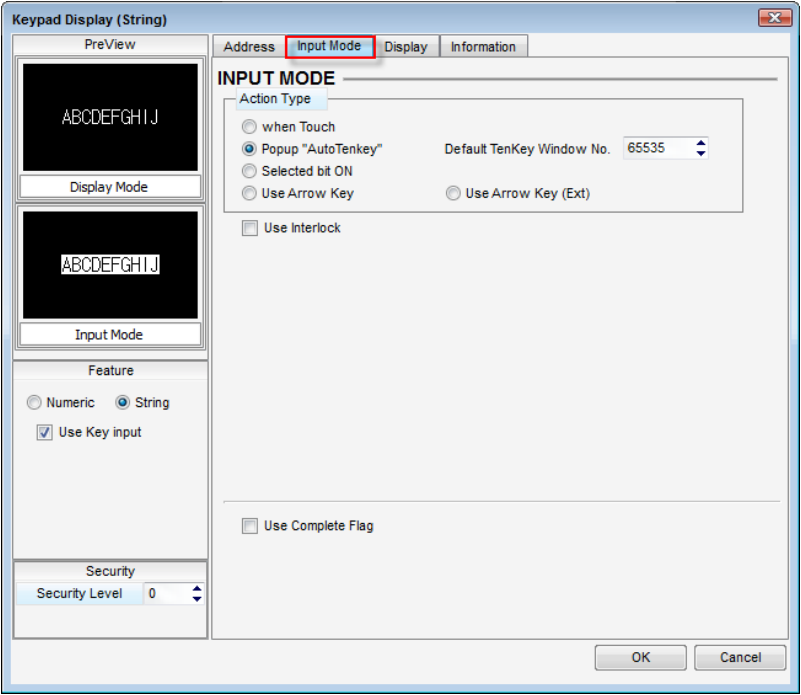
Address page	Explanation
String Address	Sets start address of address to display character line. One word address can save 2 English letters. If wants to read character line more than 2 letters, has to read next addresses to set address in [String Address].
Use Offset	As one String tag, it is used when displays data of set address in [String Address], or when data of the next addresses. After checking [Use Offset], sets address. The value which adds data of set address to address number of [String Address] becomes the address to display in String tag. For example, when [String Address] is [D0020], address of [Use Offset] is [D0300], if data is [0], character tag displays data from [D0020], if data of [D0300] is [21], and it displays data from [D0041].
Byte Swap	Can change the position of character save in address. If checks [Byte Swap], data saved in [AB] is displayed by [BA], [ABCDEF] displays [BADCFE].

20.4 Input mode page

Sets the condition of changing Keypad Display(String) which is [Display mode] to [Input mode] in [Input mode] page.

This part is the same as [Input mode page] of Keypad Display(Numeric).

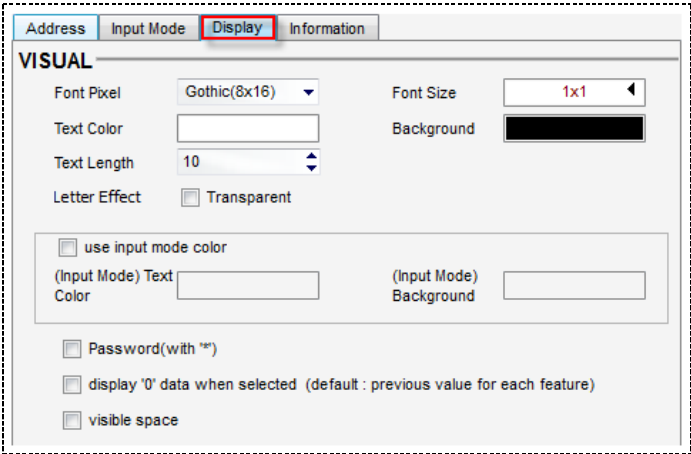
(Refer to [19.4] of [Chapter 19] regarding input mode page.)



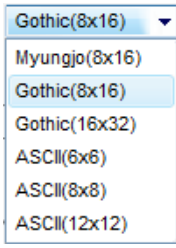
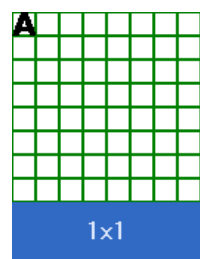
[Figure. Input mode page]

20.5 Display page

Sets number of letters of character line, font and color.



[Figure. Display page]

Display setting	Explanation
Font Pixel	<p>Sets font of number which is displayed.</p> 
Font Size	<p>Enlarges size of width/length as much as size of selected font from fonts.</p> 
Text Color	Sets color of number which displays number.
Background	Sets background color which displays number.
Text Length	Sets total digits of number to display.
Letter Effect	If checks [Transparent], background of number which displays number is displayed in transparent.
Alignment	Selects one out of left sorting or right sorting.
Use input mode color	Sets font color and background color of number when it is input mode.
(Input Mode) Text Color	Sets font color when it is converted to input mode.
(Input Mode) Background	Sets background color when it is converted to input mode.
Display '0' data when selected	Displays before data as '0'.

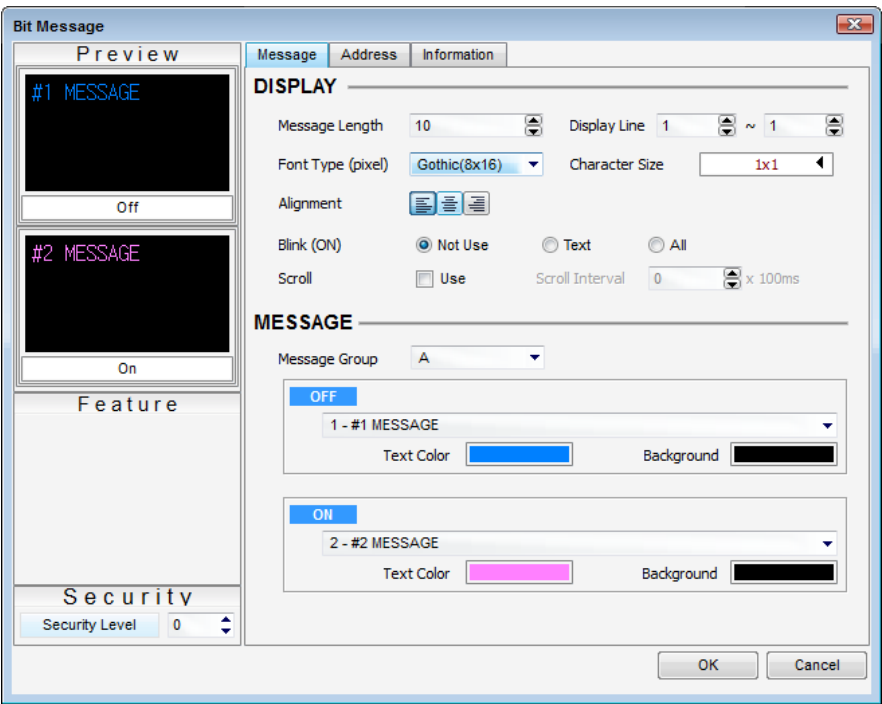
CHAPTER 21 Bit Message Tag

CHAPTER 21 – Bit Message Tag

21.1 Outline of Bit Message Tag

Bit Message Tag imports and displays message registered in [Message Table] along [ON/OFF] status of Bit Address.

(☞ Refer to [7.8] of [Chapter 7] regarding [Message Table].)



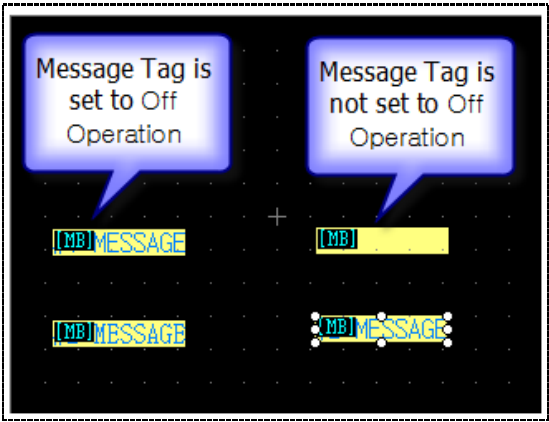
[Figure. Property screen of Bit Message Tag]

21.2 Page composition of Bit Message Tag Property

Property screen of Bit Message Tag consists of [Message], [Address] and [Register information].

Property	Explanation
Message	Sets the displayed message setting and group of message and number along ON/OFF status.
Address	Sets Bit Address to use as condition for calling Message.
information	Page which displays data of Bit Message Tag. Screen number of registered screen, Tag ID, Creat time, Modified time, Position and Size information. Position information cannot be edited.

Bit Message Tag which is registered in screen. If registers Message Tag in edit screen, message registered in OFF operation is displayed. If no message is registered in OFF operation, background color is displayed only as below figure.



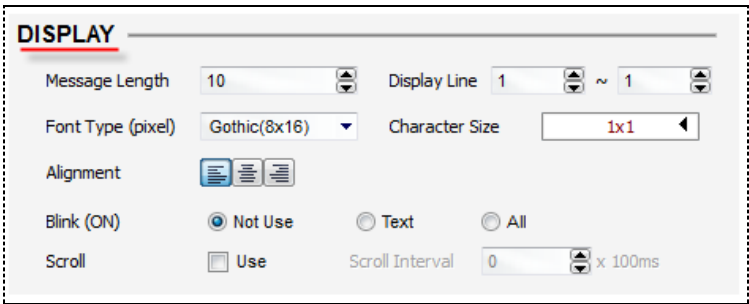
[Figure. Bit message tag registered in edit screen]

21.3 Message page

Sets the setting of displayed message and group and number of message to display along ON/OFF status. .

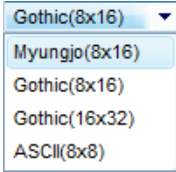
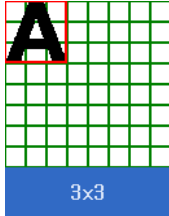
21.3.1 DISPLAY SETUP

Sets items related with display of message.

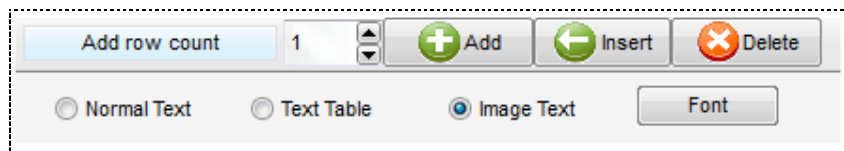


[Figure. Display setting]

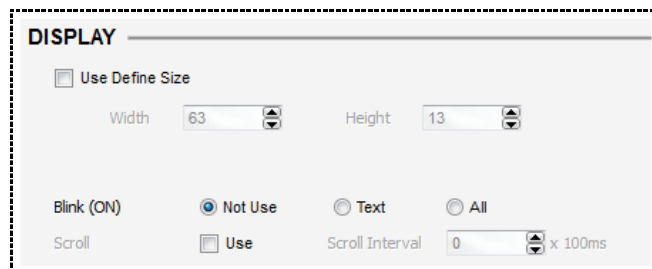
Display setting	Explanation
[Message Length]	<p>Sets number of characters to display message.</p> <p>Each number of characters of message is displayed in [Message Table].</p> <p>Input the longest number of message out of messages in use.</p> <p>Number of characters is [1] for English per one letter, [2] for Korean per one letter.</p>
[Display Line]	<p>Sets number of lines to display message.</p> <p>Sets it as number of the longest lines out of message to display.</p>

[Font Type(Pixel)]		Selects font of message from list as below figure. 
[Character Size]		Enlarges size of width/length as the selected font size from fonts. 
Alingment		Selects one from [Left], [Center] and [Right].
Blink(On)	Blinking	Blinking appears and disappears in interval of 0.5 second as message emphasizing effect of [ON status].
	Not use	Does not use function of blinking.
	Text only	Texts blinks only, set background color does not blink.
	All	Both texts and background blink.
Scroll		Message moves by one letter from right to left. Cannot use it with blinking function simultaneously.
Scroll interval		When use [Scroll] function, sets 100ms(0.1sec) unit for moving interval.

If set enabling [Image text] to be used in [Message table] as below figure, contents of display setting is changed.



[Figure. Message table set as [Image Text]]

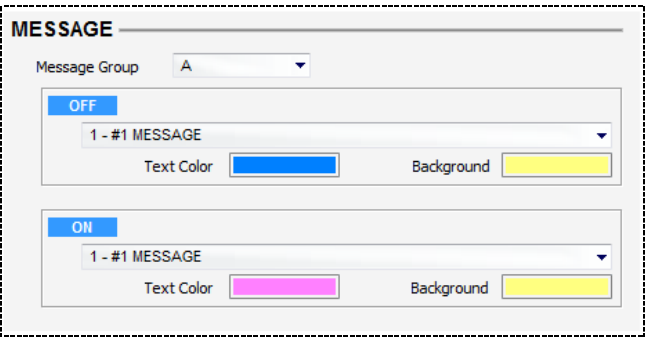


[Figure. Display setting]

Display setting	Explanation
Use Define Size	Sets size of boundary displaying message freely.
Width	Sets width of boundary displaying message.
Height	Sets height of boundary displaying message.
Blink(On)/scroll	Cannot use when using image text.

21.3.2 MESSAGE SETUP

Selects group of message registered in [Message table] and registers message to display each when it is OFF and ON status.

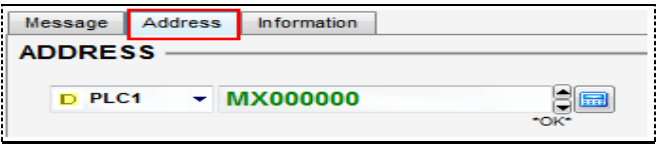


[Figure. Message setting]

Message	Explanation
Message Group	Selects Group registered in [Message Table] from A~Z.
OFF	Selects message to display from message list when bit address is OFF.
[Text Color]	Selects text color of message displaying when it is OFF status.
[Background]	Selects background color of message displaying when it is OFF status.
ON	Selects message from message list when bit address is ON.
Text Color	Selects text color of message displaying when it is ON status.
Background color	Selects background color of message displaying when it is ON status.

20.9. Address Page Setup

Sets bit address to use it as condition for calling message.



[Figure. [Address] page]

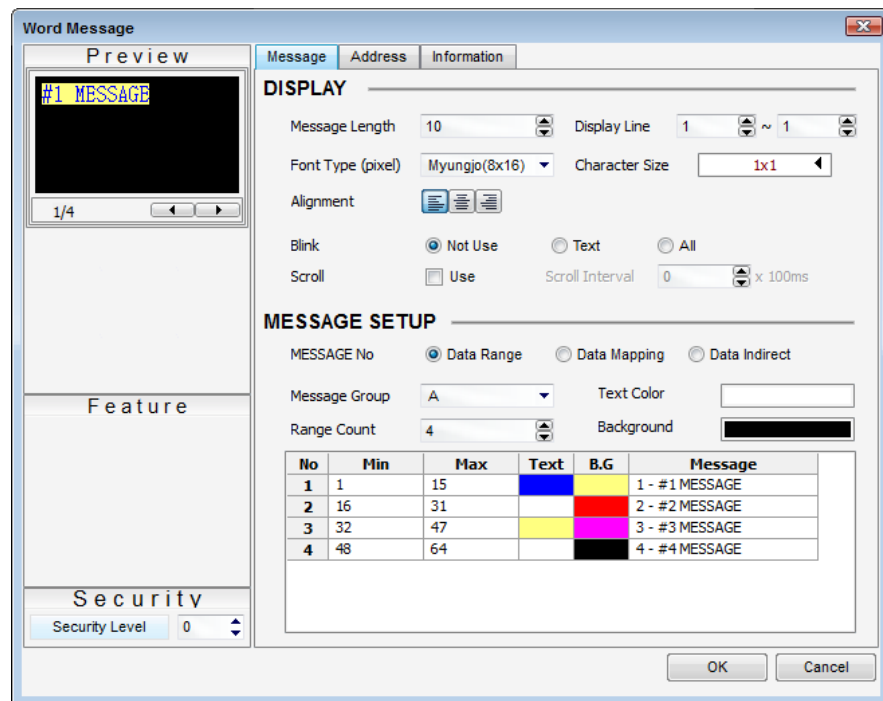
CHAPTER 22 Word Message Tag

CHAPTER 22 – Word Message Tag

22.1 Outline of Word Message Tag

Word Message Tag is the function which calls and displays message registered in [Message Table] along data of Word Address. It is used along condition which sets multiple message.

(Refer to [7.8] of [Chapter 7] regarding [Message Table].)



[Figure. Property screen of Word Message Tag]

22.2 Page composition of Word Message Tag

Property screen of Word Message Tag consists of [Message], [Address] and [information].

Property page	Explanation
Message page	Sets group and number of message to display along setting of message display and data.
Address page	Inputs Word Address to use it as condition for calling message.
information page	Page which displays data of Word Message Tag. Displays number of registered screen, Tag ID, Create Time, Modified Time, Position and Size information. Position information can be edited.

22.3 Message page

Property screen of Word Message Tag consists of [Message], [Address] and [information]

22.3.1 Display Setup

Sets items related with display of message.

DISPLAY

Message Length: 10 Display Line: 1 ~ 1

Font Type (pixel): Gothic(8x16) Character Size: 1x1

Alignment: [Left] [Center] [Right]

Blink (ON): ☒ Not Use ☐ Text ☐ All

Scroll: ☐ Use Scroll Interval: 0 x 100ms

[Figure. Display setting]

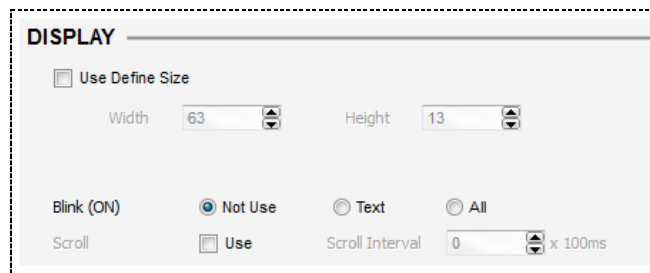
Display setting		Explanation
[Message Length]		<p>Sets number of characters to display message.</p> <p>Each number of characters of message is displayed in [Message Table].</p> <p>Input the longest number of message out of messages in use.</p> <p>Number of characters is [1] for English per one letter, [2] for Korean per one letter.</p>
[Display Line]		<p>Sets number of lines to display message.</p> <p>Sets it as number of the longest lines out of message to display.</p>
[Font Type(Pixel)]		<p>Selects font of message from list as below figure.</p>
[Character Size]		<p>Enlarges size of width/length as the selected font size from fonts.</p>
Alignment		Selects one from [Left], [Center] and [Right].
Blink(On)	Blinking	Blinking appears and disappears in interval of 0.5 second as message emphasizing effect of [ON status].
	No use	Does not use function of blinking.

	Text only	Texts blinks only, set background color does not blink.
	All	Both texts and background blink.
Scroll		Message moves by one letter from right to left. Cannot use it with blinking function simultaneously.
Scroll Interval		When use [Scroll] function, sets 100ms(0.1sec) unit for moving interval.

If set enabling [Image text] to be used in [Message Table] as below figure, contents of display setting is changed.



[Figure. Message Table set as [Image Text]]



[Figure. Display setting]

Display setting	Explanation
Use Define Size	Sets size of boundary displaying message freely.
Width	Sets width of boundary displaying message.
Height	Sets height of boundary displaying message.
Blink/scroll	Cannot use when using image text.

22.3.2 MESSAGE SETUP

Selects message number calling method. There are three ways of message calling method, [Data Range], [Data Mapping] and [Data indirect]. Sets Group and Message Number of message to display along Message Number calling method.

(1) Data Range

Calls message designated along Data Range of Word Address.

Number of block(Range Count) which can be set in [Data Range] is maximum 64.

First, sets Message Group and Text Color and Background color to display message.

Next, after input number of setting block(Range Count), sets [Text Color/Background color/Message number] along Max. and Min. of each section.

The screenshot shows the 'MESSAGE SETUP' dialog box with the 'Data Range' radio button selected. The 'Message Group' is set to 'A', 'Range Count' is 4, 'Text Color' is white, and 'Background' is black. Below these settings is a table with 6 columns: No, Min, Max, Text, B.G, and Message.

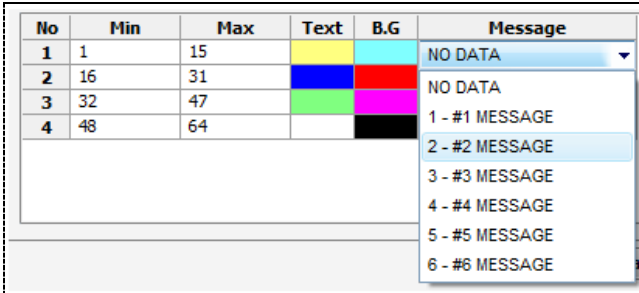
No	Min	Max	Text	B.G	Message
1	1	15	Yellow	Cyan	1 - #1 MESSAGE
2	16	31	Blue	Red	2 - #2 MESSAGE
3	32	47	Green	Magenta	3 - #3 MESSAGE
4	48	64		Black	4 - #4 MESSAGE

[Figure. [Data Range]]

If sets it as figure above, if data of Word Address is [0~10], displays message number 1, if it is [11~20], displays message number 2, if it is [21~30], displays message number 3.

If data of word address is beyond the range, nothing is displayed.

Data Range	Explanation
Message Group	Selects group of message registered in [Message Table] from A~Z.
Text Color	In case of value beyond setting range, sets Text Color.
Background color	In case of value beyond setting range, sets background color.
Range Count	Sets number of message to call along the Block
Number	Sequential number as number of setting section
Min.	Min.of the section. Sets it avoiding overlapping with other section.
Max.	Max.of the section. Sets it avoiding overlapping with other section.
Text	Sets text color of the message.

B.G	Sets Background Color of the message.
Message	<p>Selects message registered in [Message Table] along set group.</p> <p>If clicks message, list is displayed.</p> 

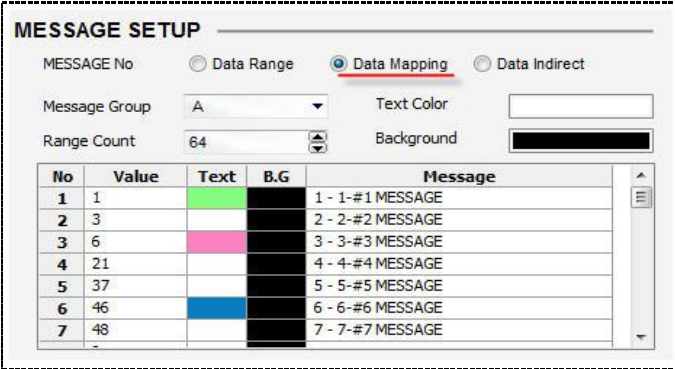
(2) Data Mapping

Calls message along setting data.

When [Value] is set and data meets the value, the message is called.

First, sets message group and text color and background color to display message.

Next, after input number of setting section, sets [Text Color/Background color/Message number] along Max. and Min. of each Range.



No	Value	Text	B.G	Message
1	1			1 - 1-#1 MESSAGE
2	3			2 - 2-#2 MESSAGE
3	6			3 - 3-#3 MESSAGE
4	21			4 - 4-#4 MESSAGE
5	37			5 - 5-#5 MESSAGE
6	46			6 - 6-#6 MESSAGE
7	48			7 - 7-#7 MESSAGE

[Figure. Data Mapping]

If data of Word Address is [1], displays message number 1, if it is [3], displays message number 2, if it is [6], displays message number 3.

If data of word address is beyond the range, nothing is displayed.

(3) Data Indirect

Calls message of the same number as data of word address.

Number of message which can call in [Data Indirect] is maximum 32767.

First, sets Message Group and Text Color and Background color to display message.
Next, sets RANGE OF MESSAGE NO.

[Figure. Data Indirect]

If data of Word Address is [1~999], the same number of message as data of Word Address is called.
If data of Word Address is not [1~999], message is not called.

[Group Indirect] is the function which sets Word Address and can change Group of Message along data of Word Address. Data of word Address [0~25] matches group [A~Z].

If wants to call message of A Group, inputs [0] into data of Word Address, if wants to call message of C group, inputs [2] into data of Word Address.

22.4 Address page

Sets Word Address to use it as condition in Word Message Tag.

If checks [Use float], data type of input Word Address is changed to float, can use decimal point.

[Figure. Address page]

CHAPTER 23 Bit Window Tag

CHAPTER 23 – Bit Window Tag

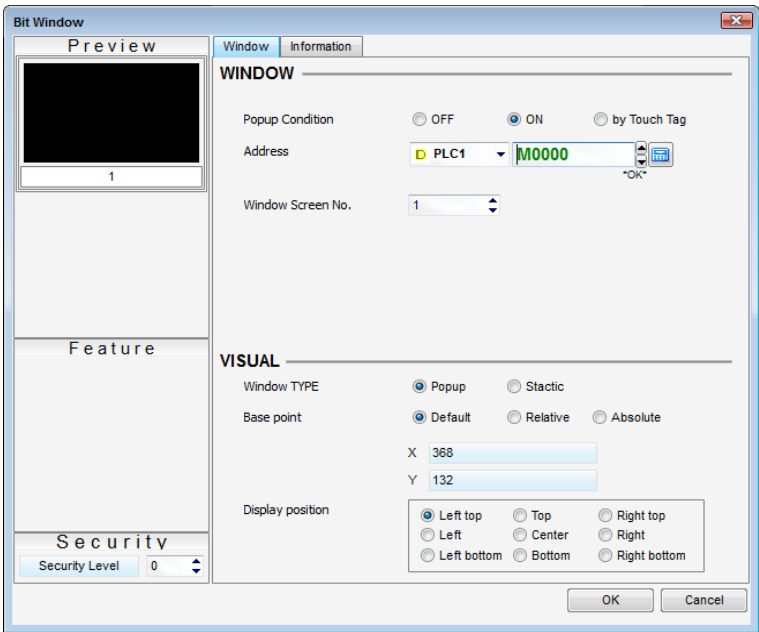
23.1 Outline of Bit Window Tag

Bit Window Tag is the tag which calls window screen along ON/OFF status of Bit Address.

There is no limit for number of Window Tag to register in base screen, number of window which implements popup simultaneously is maximum 8, popup type 4, and Static type 4. That is, if 8 window screens are popped up in screen, 9th popped up window screen can be popped up only after one window screen is closed.

23.2 Page composition of Bit Window Tag

Property screen of Bit Window Tag consists of [Window] and [information].



[Figure. Property screen of Bit Window Tag]

Property page	Explanation
Window page	Page which sets popup condition of window screen, screen number and popup position.
information page	Page which displays data of Word Message Tag. Displays number of registered screen, Tag ID, Create time, Modified time, Position and Size information. Position information can be edited.

23.3 Window page

Page which sets popup condition of window screen, screen number and popup position.

[Figure. Window page of Bit Window Tag]

23.3.1 Window Setup

Sets popup condition and Window Screen number.

Property	Explanation	
Popup Condition	OFF	While the designated Bit Address is OFF, the Window Screen is displayed.
	ON	While the designated Bit Address is ON, the window screen is displayed.
	By Touch Tag	<p>Operates Window Tag by registering Touch Tag.</p> <p>[Figure. [Window popup] function of Touch Tag]</p> <p>Selects [Special Function] in [Operation] page of Touch Tag. Sets it classified as [Screen], uses [Window Popup(Toggle)] function. Selects Window Tag ID, inputs ID of the Window Tag.</p>

		(Tag ID is displayed in register information, it is number in registering sequence.) If sets Touch Tag as figure above and register it with Window Tag, if touches once, window screen is popped up, if touches once again, window screen disappears given that Touch Tag is toggle condition.
Address	Inputs Bit Address which uses it as condition for calling Window Screen.	
Window Screen number	Sets Window Screen number to call.	

23.3.2 Visual Setup

(1) Window TYPE

Type of window is classified as [Popup type] and [Fixed type] along proceeding method when imports window screen in base screen.

Window Type	Explanation
Popup Type	Used when pops up Window Screen for a while and makes it disappeared. After window screen is popped up and disappeared, previous Base Screen which is displayed before Window Screen is restored.
Static Type	Used when Static and uses window screen at fixed position of Base Screen. After Window Screen is popped up and disappeared, previous Base Screen which is displayed before Window Screen is not restored, but blacked out as wide as boundary of window screen. Black out phenomenon is painted by black color as wide as boundary Window Screen which touch screen popped up internally.

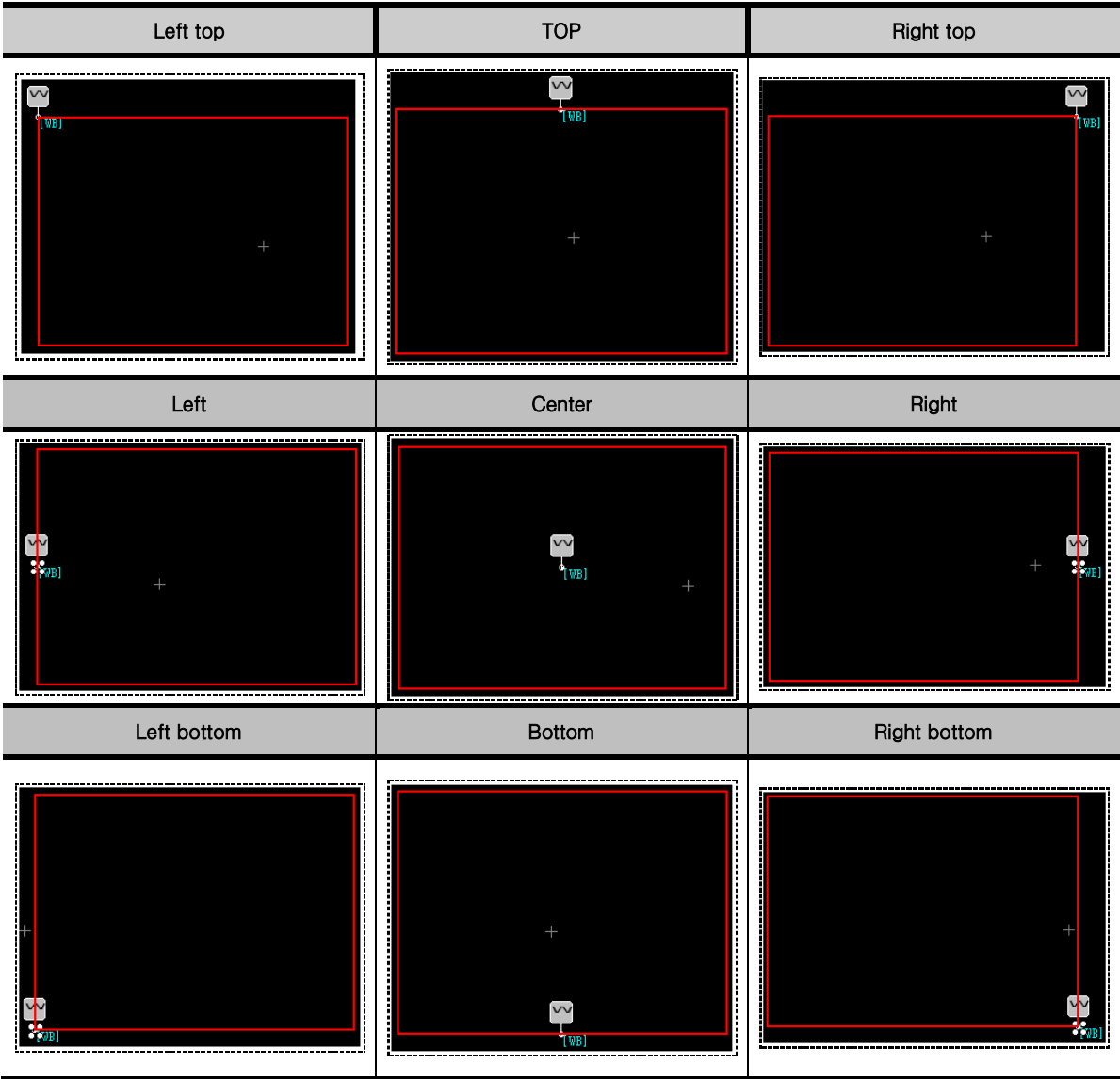
(2) Base point

As setting method of window popup position, can select one out of [Default], [Relative] and [Absolute], but [Default] function is provided only because Bit Window Tag calls one Window Screen. Word Window Tag which calls multiple Window Screens can be selected from [Default], [Relative] and [Absolute].

(3) Display position

Display position is to set where Window Screen needs to be positioned and called based on the position registered Window Tag. Position to register [Window Tag] in screen becomes [Display position] of Window Screen to call and Window Screen is popped up.

Below chart displays the position where Window Screen pops up along 9 display directions.
 Position of [W] is the place which registered Window Tag, the square in red shows Window Screen. .



CHAPTER 24 Word Window Tag

CHAPTER 24 – Word Window Tag

24.1 Outline of Word Window Tag

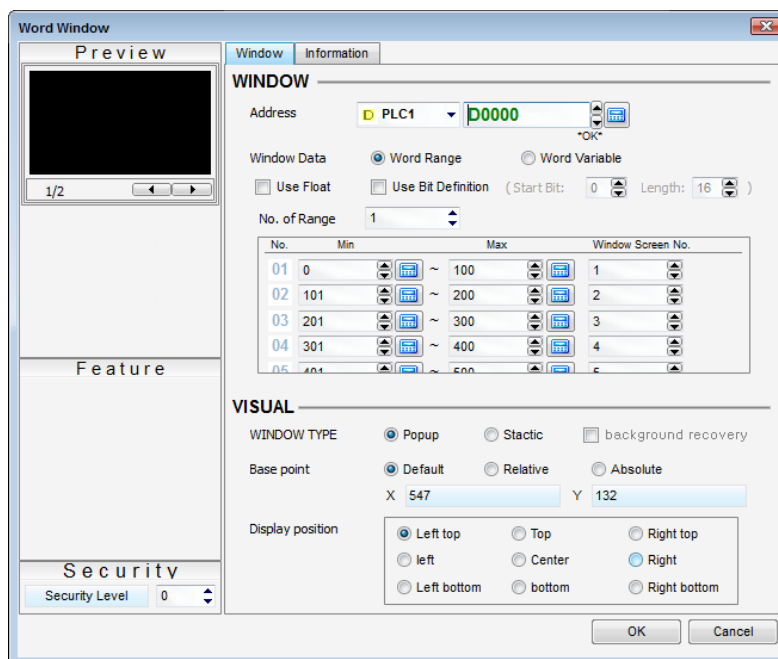
Word Window Tag calls Window Screen along data of Word Address.

It is used when calls multiple Window Screen along set condition.

There is no limit for number of Window Tag to register in Base Screen, number of window which implements popup simultaneously is maximum 8, Popup type 4, and Static type 4. That is, if 8 window screens are popped up in screen, 9th popped up Window Screen can be popped up only after one Window Screen is closed.

24.2 Page composition of Word Window Tag property screen

Property screen of Word Window Tag consists of [Window] and [information].



[Figure. Property screen of Word Window Tag]

Property page	Explanation
Window page	Page which sets popup condition of Window Screen, Screen number and popup position
information	Page which displays data of Word Message Tag. Displays Screen No, Tag ID, Create time, Modified time, Position and Size information. Position information can be edited.

24.3 Window page

Window page is the page which sets Window Screen number and popup position of Window Screen along popup condition of Window Screen.

The screenshot shows the 'Window' configuration page. The 'WINDOW' section includes an 'Address' field set to 'PLC1' and 'p0000'. Under 'Window Data', 'Word Range' is selected. Below this, a table lists ranges and their corresponding window screen numbers:

No.	Min	Max	Window Screen No.
01	0	100	1
02	101	200	2
03	201	300	3
04	301	400	4
05	401	500	5

The 'VISUAL' section includes 'WINDOW TYPE' set to 'Popup', 'Base point' set to 'Default', and 'X' and 'Y' coordinates set to 547 and 132 respectively. The 'Display position' is set to 'Left top'.

[Figure. Window page of Word Window Tag]

24.3.1 Window Setup

(1) Address

As conditional address to call the Window Screen, sets Word Address.

(2) Window Data(Number designating method)

Selects method to designate Window Screen Number along data of Word address.

There are two ways to designate number, [Word Range] and [Word Variable].

- **Word Range**

Calls Window Screen designated along the range(scope) of data of Word Address.

Number of Window Screen calls along section of [Word] is maximum 8.

[Figure. Word Range]

If data of the Word Address of setting has the value of [0~100], Window Screen number 1 is popped up, if it has the value of [101~200], Window Screen number 2 is popped up.
If data of the Word Address of setting has value other than 8 section, Window Screen is not popped up.

Word Range Setting	Explanation
No of Range	Sets number of Window Screen to call along section.
No.	Sequential number as many as number of section.
Min.	Min.of section. Sets it avoiding overlapping with other section.
Max.	Max.of section. Sets it avoiding overlapping with other section
Window Screen No.	Sets Window Screen number to call.
Use Float	<p>Decimal point can be input because data type of Min. and Max. which inputs section are floated.</p> <p>Cannot be used with [Use Bit Definition] simultaneously.</p>
Use Bit Definition	<p>Use Bit Definition changes [Word Address] which are conditional address to binary number.</p> <p>For example, when conditional address is [D0000], data of [D0000] is [2000], it becomes [0000/0111/1101/0000] if changes [2000] to binary number.</p> <p>If sets starting Bit as [2], length as [4], it is the function which uses 4 Bit only from 2nd Bit out of [0000/0111/11[01/00]00].</p> <p>Cannot be used with [Use Float] simultaneously.</p>

- Word Variable

Calls the same Window Screen number as Word Address data of setted.

Number of Window Screen to calls in [Word Variable] is maximum 65535.

The screenshot shows a configuration window for 'Word Variable'. At the top, there are three radio buttons: 'Window Data', 'Word Range', and 'Word Variable' (which is selected). Below these, there is a checkbox for 'Popup Condition' which is checked. Under 'Condition', there are two radio buttons: 'OFF' (selected) and 'ON'. To the right, there is a dropdown menu showing 'PLC1' and a text field showing 'M0000'. Below this, there is a section titled 'RANGE OF WINDOW NO.' with two spinners: 'Min' set to '1' and 'Max' set to '999'. An 'OK' button is visible on the right side.

[Figure. Word Variable]

If data of Bit Address [M0000] is ON, data of conditional Word Address of Word Window Tag is [1~999], Window Screen which has the same data of word address and window screen number is called.

If data of Bit Address [M0000] is OFF, or data of conditional Word Address of Word Window Tag is not [1~999], Window Screen is not called.


Word Variable	Explanation
Popup condition	If uses popup condition, Window Screen is called when data of set [Bit Address] is the Popup condition (OFF/ON). *Reference) In case of not using Popup condition, data of Word Address is in range of window number, Window Screen is always called.
Range of WINDOW NO.	Range of window screen number to call is designated as Min.and Max.

24.3.2 Visual Setup

(1) Window Type

Type of Window is classified as [Popup type] and [Static type] along proceeding method when imports Window Screen in base screen.

Window Type	Explanation
Popup type	Used when pops up Window Screen for a while and makes it disappeared. After Window Screen is popped up and disappeared, previous Base Screen which is displayed before Window Screen is restored.
Static type	Used when Static and uses window screen at fixed position of Base screen. After Window Screen is popped up and disappeared, previous Base Screen which is displayed

	<p>before window screen is not restored, but blacked out as wide as boundary of Window Screen.</p> <p>Black out phenomenon is painted by black color as wide as boundary Window Screen which touch screen popped up internally.</p>
Background recovery	<p>Can be set in case of [Static].</p> <p>If checks it, Window Screen is popped up and disappeared, black painting operation is not executed as wide as popup Window Screen boundary.</p> 

(2) Base Point

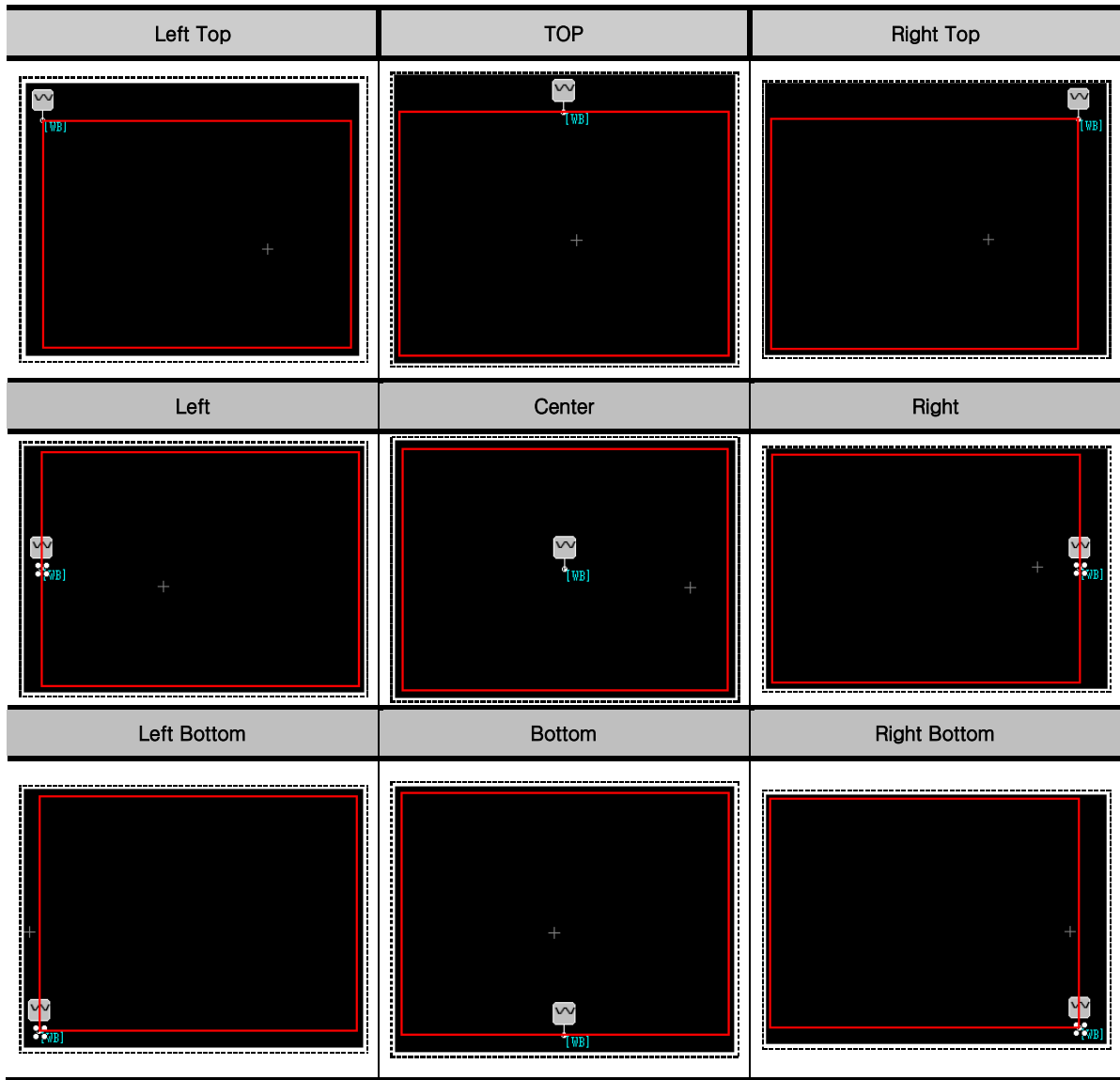
As setting method of Window popup position, can select one out of [Default], [Relative] and [Absolute].

Base Point	Explanation
Default	Window Screen is called at (X, Y) position where Window Tag is registered.
Relative	<p>Window Screen is called at the position, (X, Y) where Window Tag is registered adds data of next two Addresses to [Word Address] to (X, Y) coordinates each.</p> <p>Using Relative, can call Window Screen at the desire position controlling data of [D0001] and [D0002] whenever Window Screen is called.</p> <p>Reference) If Word Address set in Window Tag is [D0000], position where Window Tag is registered is (50, 100), the position where Window Screen is called is (data of 50+[D0001], data of 100+[D0002]).</p>
Absolute	<p>Having nothing to do with position of (X, Y) which Window Tag is registered, data of the next two Addresses to [Word Address] set as conditional address becomes the position to call Window Screen.</p> <p>Using absolute, can call Window Screen at the desire position controlling data of [D0001] and [D0002] whenever Window Screen is called.</p> <p>Reference) If Word Address set in Window Tag is [D0000], position where Window Tag is called is (data of [D0001], data of [D0002]).</p>

(3) Display position

Display position is to set where Window Screen needs to be positioned and called based on the position registered Window Tag. Position to register [Window Tag] in screen becomes [Display position] of Window Screen to call and Window Screen is popped up.

Below chart displays the position where Window Screen pops up along 9 display directions. Position of [W] is the place which registered window Tag, the square in red shows Window Screen.

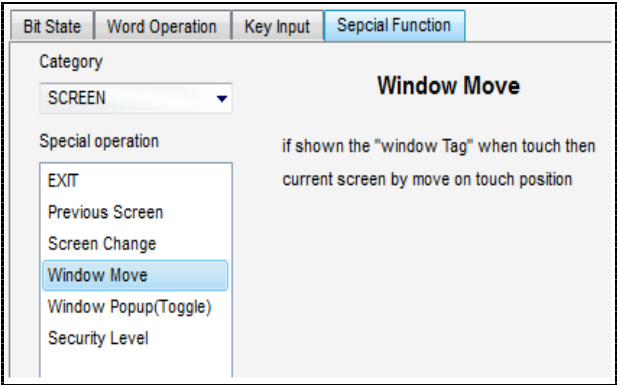


24.4 Moving position of window screen under operation

Window screen can be moved during operation.

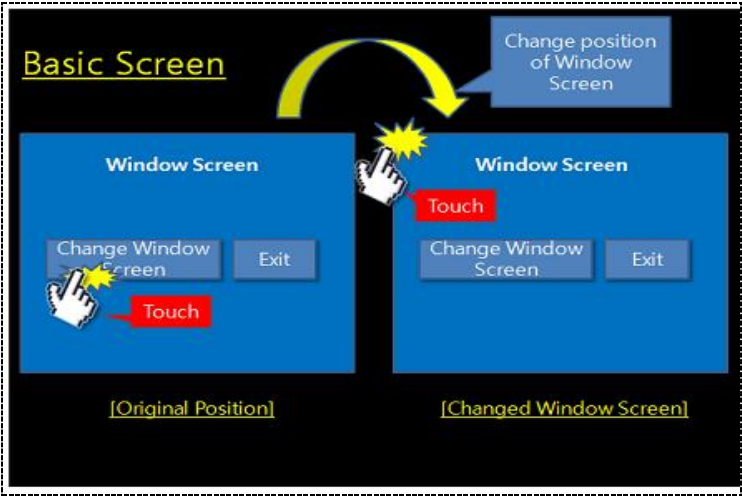
If registers set [Touch Tag] to Window Screen as below figure, touches touch button once, touches the position to move to, Window Screen is moved to the desired position.

Function of moving Window Screen is the special function of [Operation] page of Touch Tag. Selects classification by [Screen] in Category and function of [Window Move] in Special Operation.



[Figure. Function of Moving Window Screen of Touch Tag]

Registers Touch Tag which is set as function of Window Move in Window Screen.



[Figure. Moving position of Window Screen during operation]

When Window Screen is called in Base screen as figure above, if wants to move Window Screen, touches [Window screen move] Touch Tag registered in Window Screen firstly. Next, if touches position to move, Window Screen is moved to the place touched.

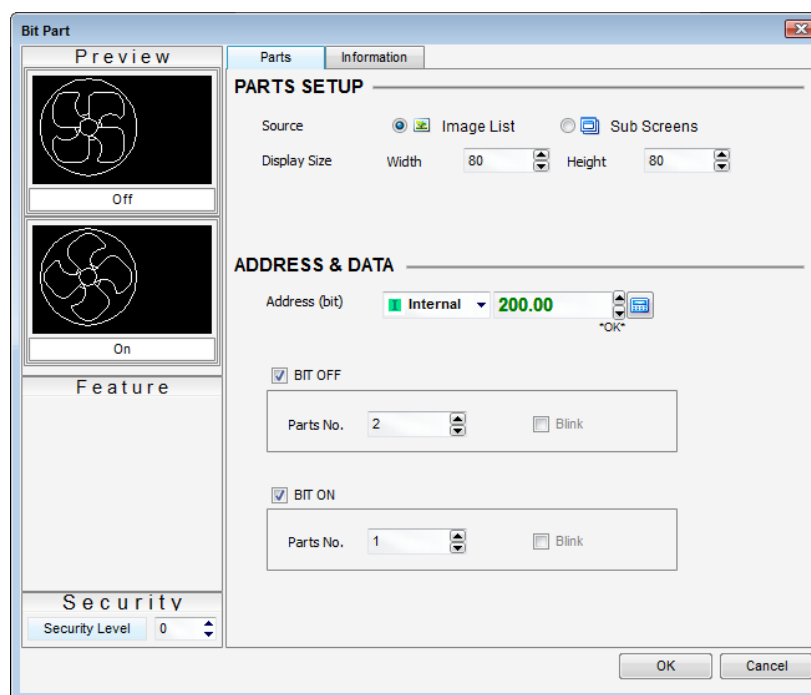
CHAPTER 25 Bit Part Tag

25.1 Outline of Bit Part Tag

Bit Part Tag is the function which calls and displays Images or Subscreen registered in Image List along ON/OFF status of Bit Address.

When set Bit Address is ON, registered images or subscreens are displayed, when it is OFF, images and subscreens are displayed. One of ON status or OFF status can be displayed after selection.

Can express two different images using this function, or take animation effect.



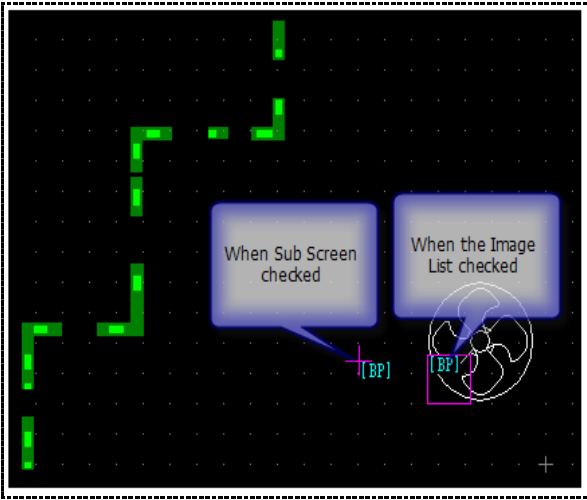
[Figure. Property screen of Bit Part Tag]

25.2 Page composition of Bit Part Tag Property Screen

Property screen of Bit Part Tag consists of [Parts] and [information].

Property page	Explanation
Parts	Selects type of Parts, and sets Bit Address and Part number to display when ON/OFF.
information	Page which displays data of Bit Parts Tag. Screen No. registered, Tag ID, Create time, Modified time, Position. Position information can be edited.

Bit Parts Tag registered in screen. The shapes of Parts Tag using Image List and Parts Tag using Subscreen are displayed differently as below figure.



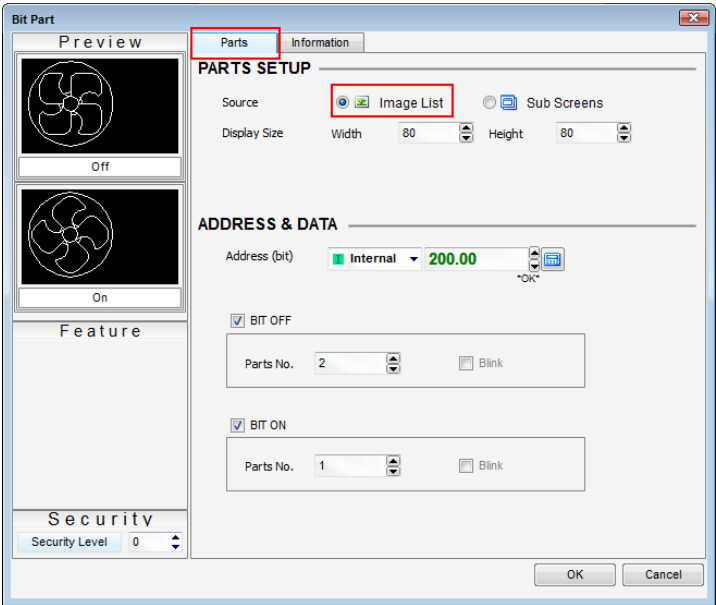
[Figure. Bit Parts Tag registered in Sub screen]

25.3 Part page

Page which sets display screen type and bit address to use in Bit Parts Tag.

25.3.1 Parts Setup for Image List

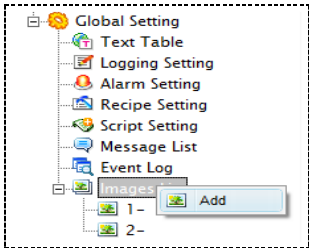
Calls registered Image in [Global Setting]–[Image list] of Project Manager Window, along [ON/OFF] status of Bit Address.



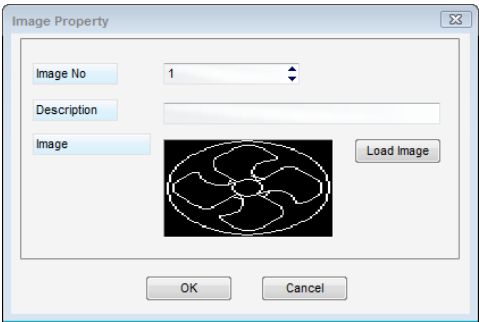
[Figure. When sets it with image list]

(1) Register images in image list

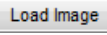
Image list is positioned at Global Setting of Project Manager Window. It can register maximum 32767 images. After selecting image list, [Image property] screen is displays if presses [Add] by clicking right button of mouse. It can add images in [Image property] screen.



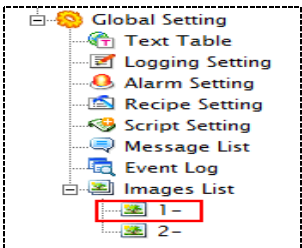
[Figure. Add image]



[Figure. Image property]

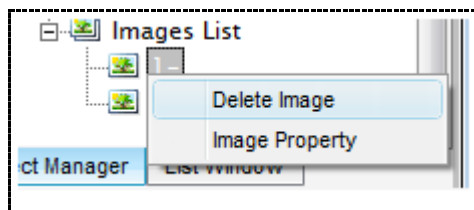
Image property	Explanation
Image No.	Sets number of images. Can input 0 ~ 32767.
Explanation	Inputs explanation on images.
Image	<div>Calls images to register by pressing  button.</div> <div>Can view imported images in [Preview].</div>

After completing image import, images are added in image list as below figure if presses [OK] button.



[Figure. Registered image]

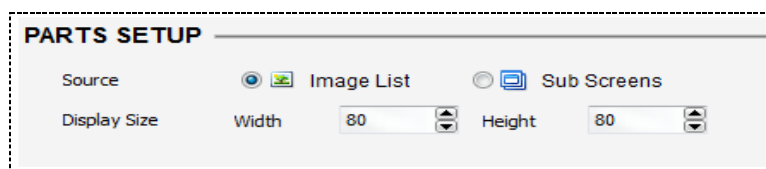
If clicks registered image with right button of mouse, popup menu appears as below figure.
Can delete images or change property through popup menu.



[Figure. Popup menu of registered image]

(2) Parts setup

Selects type of Sources with [Image list] and sets [Display Size].

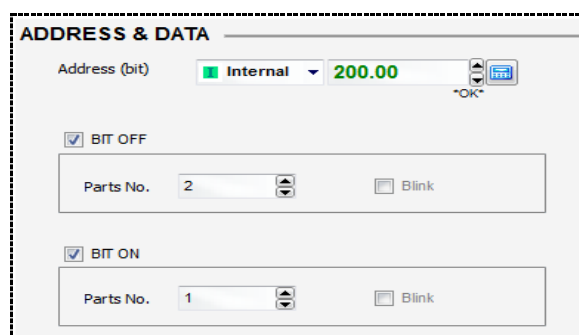


[Figure. Parts setup]

Though width and height of Display Size and size of image are not the same, total registered images are displayed in screen. But when image is disappeared, balance parts are remained the same in screen.

Also, when sizes of ON image and OFF image are different, afterimage of bigger image is left in screen. So set Display Size up should be same and larger than bigger image.

(3) ADDRESS & DATA



[Figure. Address and Parts number setting]

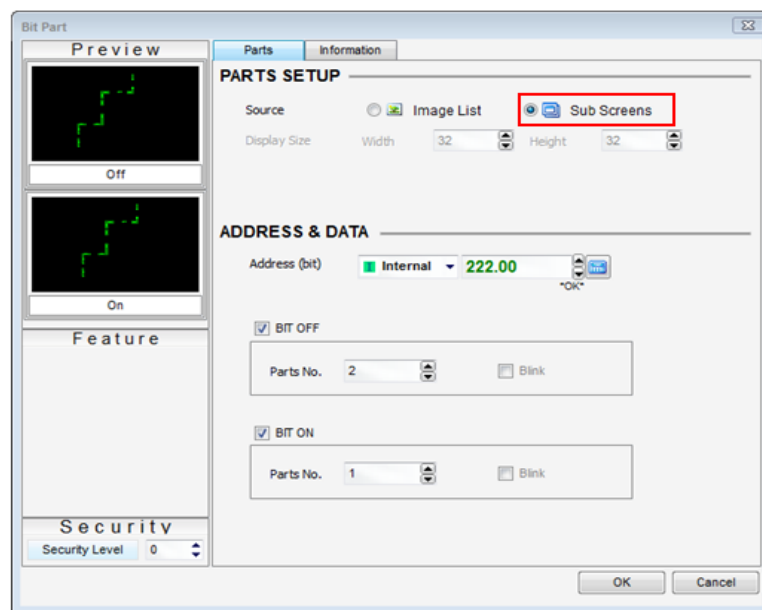
Address & Parts No	Explanation
Address(Bit)	Sets Bit Address to call parts.
OFF status (Bit Off)	Sets images to display when Bit Address is OFF. Inputs image number registered in [Image list] as [Part number]. In case of [Image list], [Blinking] function is not supported.
ON status (Bit On)	Sets images to display when bit address is ON. Inputs image number registered in [Image list] as [Part number]. In case of [Image list], [Blinking] function is not supported.

25.3.2 Parts Setup for Subscreen

Call the screen registered in [Subscreen] along ON/OFF status of Bit Address.

Subscreen can register figure only, not Tag.

(☞ Refer to [3.4.3] of [Chapter 3] regarding [Subscreen].)



[Figure. When sets Subscreen]

(1) Parts setup

Sets type of Source as [Subscreen].

No need to sets [Display Size] because Sub Screen is called in total screen.

(2) ADDRESS & DATA

Address & Parts No.	Explanation
Address(Bit)	Sets Bit Address to call parts.
OFF status (Bit OFF)	<p>When bit address is OFF, sets subscreen to display.</p> <p>Inputs image number registered in [Image list] as [Part number].</p> <p>[Blink] function is available when sets one of [OFF status] and [ON status] only.</p> <p>Blink function is the function which subscreen appears and disappears with interval of 0.5 second.</p>
ON status (Bit ON)	<p>When Bit address is ON, sets Subscreen to display.</p> <p>Inputs image number registered in [Image list] as [Part number].</p> <p>Sets images to display when Bit address is ON.</p> <p>[Blink] function is available when sets one of [OFF status] and [ON status] only.</p> <p>Blink function is the function which Sub Screen appears and disappears with interval of 0.5 second.</p>

ADDRESS & DATA

Address (bit) Internal 222.00 OK

☒ BIT OFF

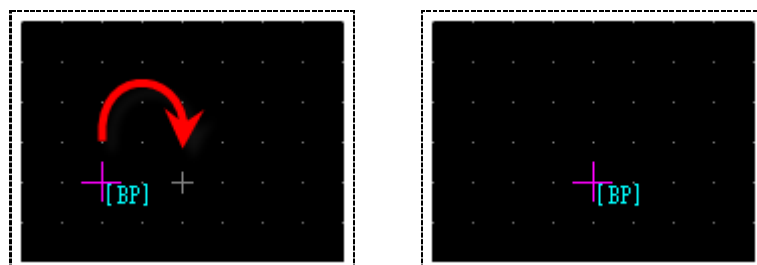
Parts No. 2 Blink

☒ BIT ON

Parts No. 1 Blink

[Figure. Address and Part number setting]

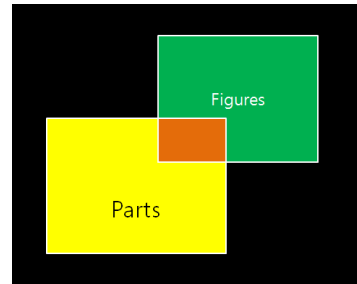
If wants to display position of figures registered in Sub Screen, Part Tag has to be placed at the center of Base Screen correctly.



[Figure. Same position as center point]

**Note**

When uses Part Tag which calls Subscreen, it is the caution when uses one of OFF status/ON status. If background color is set in base screen, or figures with other colors are placed at the position where Parts(figures of subscreen) of Part Tag are displayed, color of parts get reversed(XOR).



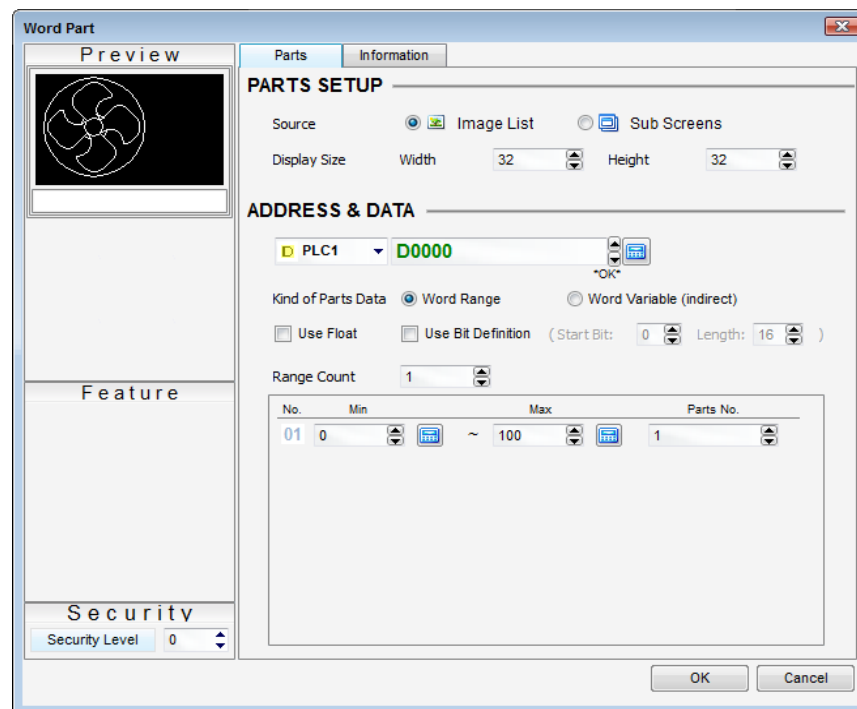
CHAPTER 26 Word Part Tag

CHAPTER 26 – Word Part Tag

26.1 Outline of Word Part Tag

Word Part Tag is the function which calls and displays the images registered in Image List or Sub Screen along data of Word Address.

It is used when multiple images or Subscreen along set condition.



[Figure. Property Window of Word Part Tag]

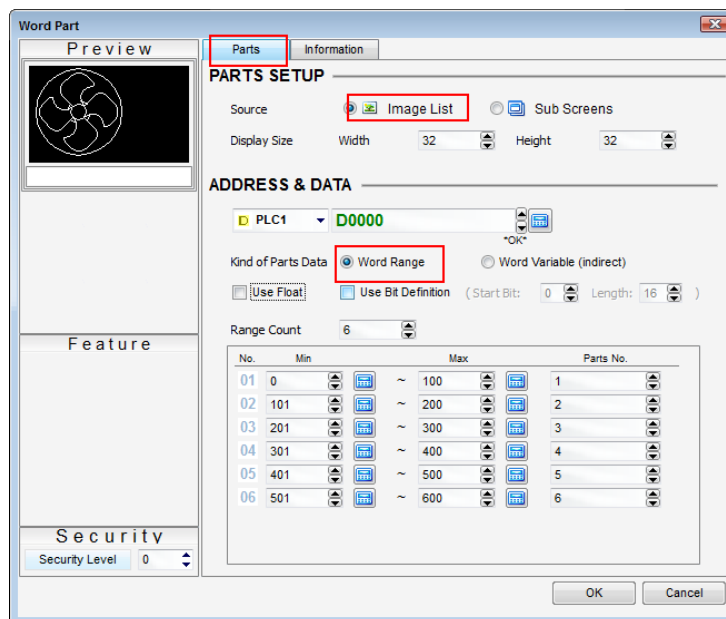
26.2 Page composition of Word Part Tag

Property Window of Bit Part Tag consists of [Parts] and [Information].

Property page	Explanation
Parts	Page which selects type of display screen, and sets Word Address and Parts to call.
Information	Page which displays data of Word Part Tag. Displays number of registered screen, Tag ID, Create time, Modified time, Position and Size information. Position information can be edited..

26.3 Parts page

Page which selects type of display screen, and sets word address and Part to call.



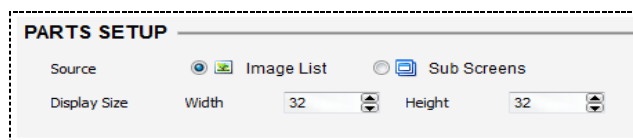
[Figure. Part page]

26.3.1 Parts setup

Selects type of Source with [Image list] and [Sub Screen].

[Image list] is called along data of Word Address image registered in [Image List].

[Sub Screen] is called along data of Word Address image registered in [Sub Screen].



[Figure. Parts setup]

(1) Image List

Sets [Display Size] in case of selecting type of Source as Image List.

Registered entire image is displayed in screen though width and height of Display Size are not the same as size of image. But, when image disappears, balance part remains the same as it is because Display Size part(Area) disappears only.

Also, when size of called images are different, afterimage of bigger image remains.

So, Display Size is the same as the size of the biggest image, or set as bigger.

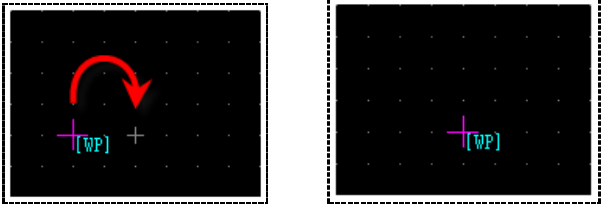
The method of registering image is same as Bit Part Tag.

(Refer to [25.3.1] of [Chapter 25] regarding how to add images.)

(2) Sub Screen

In case of selecting type of Source as [Subscreen], it is no need to set [Display Size] because Sub Screen is called in entire screen.

If wants to display position of figure registered in Sub Screen at the same position in Base Screen, Part Tag has to be placed at the center of Base Screen.

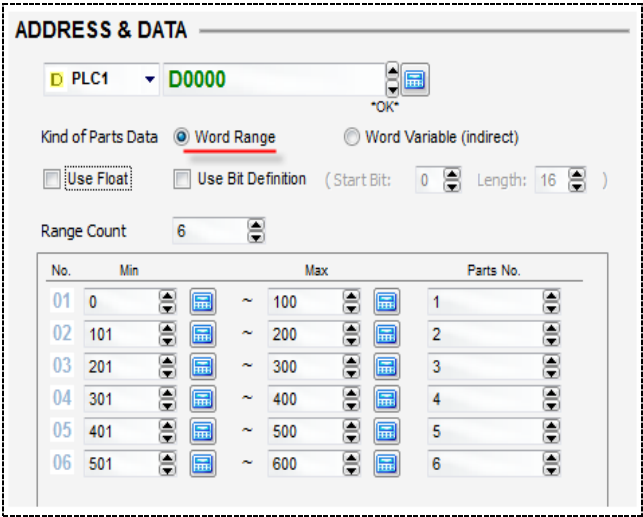


[Figure. Same position as center point]

26.3.2 ADDRESS & DATA Setup

Sets Word Address to call Part and Part number along number designation method(Kind of Parts Data).

First, selects one out of [Word Range] or [Word Variable(Indirect)] in number designation method(Kind of Parts Data). [Word Range] is the method which calls Parts along section of data of Word Address. [Word Variable(Indirect)] is the method which calls Parts along same Parts No.of data of Word Address.



[Figure. Address & Data setting]

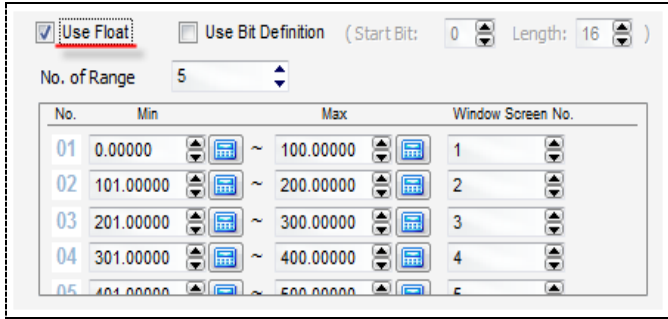
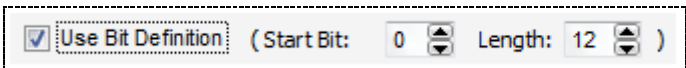
(1) Word Range Setting

In case of selecting [Word Range], first sets number of Range Count. Maximum 8 Range can be set in [Word Range]. Then, inputs [Min.] and [Max.] designated in each Range, sets [Parts number] to call along each Range. [Part No] of Image List is number of image, [Parts No] of Sub Screen becomes screen number of Sub Screen.

If data of the set Word Address has the value of [0~100], No.1 Image or Sub Screen is popped up, if it Has the value of [101~200], No.2 Image or Sub Screen number is popped up.

If data of the set Word Address has value other than 8 Range, Image or Subscreen is not popped up.

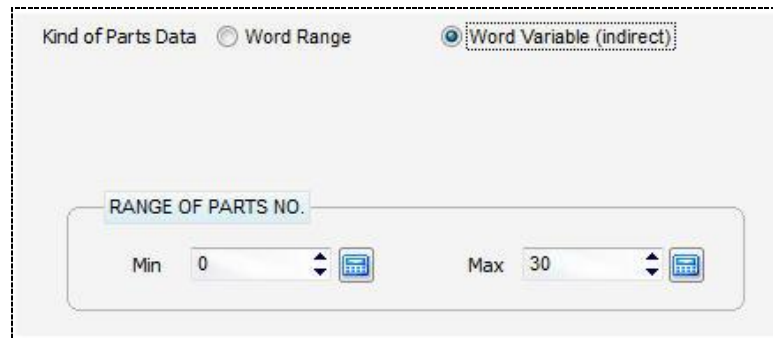
Use Float Use Bit Definition are as followings.

Option	Explanation
Use Float	<p>Decimal point can be input because data type of Min. and Max. which inputs section are floated. Cannot be used with [Use Bit Definition] simultaneously.</p> 
Use Bit Definition	<p>Use Bit Definition changes [Word Address] which are conditional address of Word Parts Tagsd to binary number.</p> <p>For example, when conditional address is [D0000], data of [D0000] is [2000], it becomes [0000/0111/1101/0000] if changes [2000] to binary number.</p>  <p>If sets starting bit as [2], length as [4], it is the function which uses 4 Bit only from 2nd Bit out of [0000/0111/11[01/00]00].</p> <p>Cannot be used with [Use Float] simultaneously.</p>

(2) Word Variable(Indirect) Setting

In case of selecting [Word Variable(Indirect)], sets the range of Parts number.

Number of Parts to call in [Word Variable(Indirect)] is maximum 65536.



[Figure. Word Variable(Indirect)]

If data of Word Address of Word Part Tag is [1~30], Part with the same Part No. of Word Address data is called. If word address data is not [1~30], Parts cannot be called.

CHAPTER 27 Alarm Tag

CHAPTER 27 – Alarm Tag

Alarm Tag is the Tag which shows occurred alarm list.

Alarm indicates error or problem items which are occurred in system.

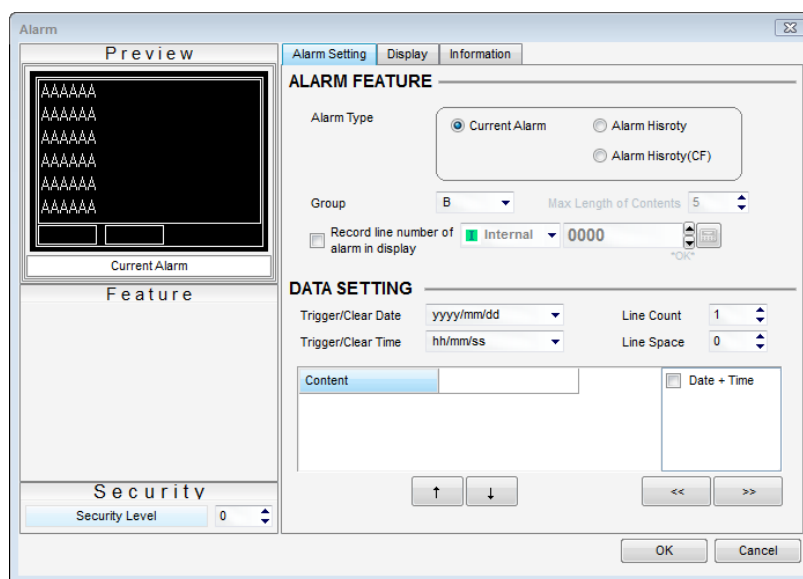
Each alarm is registered in [Alarm Setting] with Bit Address.

[Alarm setting] can be viewed if sets [Alarm setting] in [Global setting] of [Project manager], or [Alarm setting] in [Project] menu.

(☞ Refer to [7.5] of [Chapter 7] regarding how to set alarm setting.)

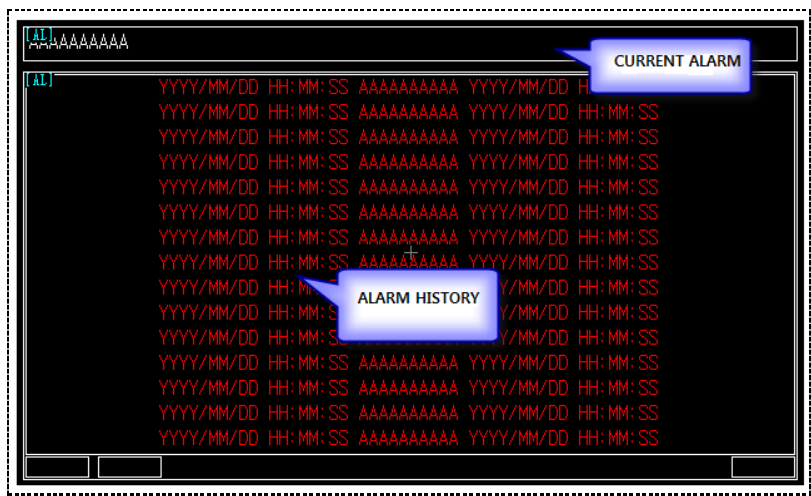
There are [Alarm Tag] and [Extended Alarm Tag] in alarm tag. Though Alarm Tag and Extended Alarm Tag has the same function, Extended Alarm Tag has more functions than Alarm Tag.

Property Window of Alarm Tag.



[Figure. Property Window of Alarm Tag]

Alarm Tag registered in screen.



[Figure. Alarm Tag registered in Screen]

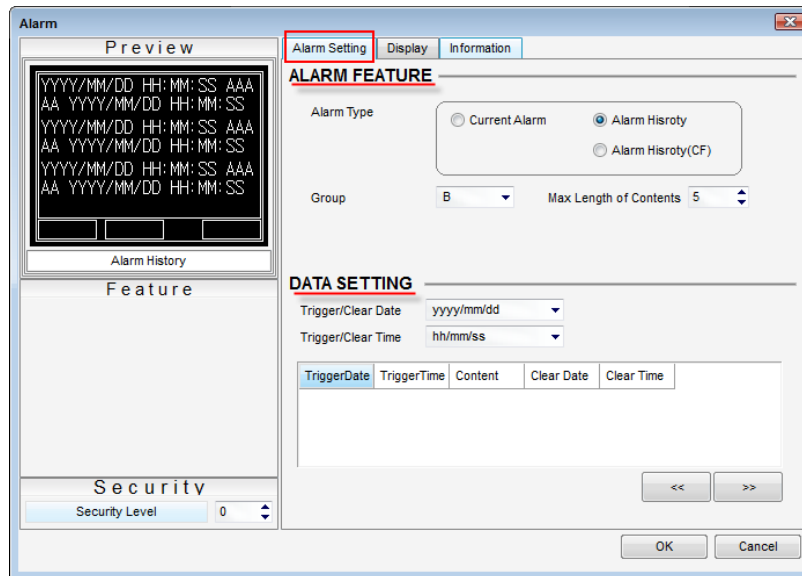
27.1 Property Window page composition of Alarm Tag

Alarm Tag consists of 3 pages, [Alarm Setting], [Display] and [Information].

Property	Explanation
Alarm Setting	Page which sets composition of Alarm Tag contents Sets type of Alarm and Data to display.
Display	Page which sets design of Alarm Tag. Sets Frame, Screen option, Font and Color of Alarm Tag.
Information	Page which displays data of number tag. Displays the number of registered screen, Tag ID, Creatie time, Modified time, Position and Size information, and can edit position and size information.

27.2 Alarm Setting page

Sets Alarm feature and Data setting.



[Figure. Alarm Setting page]

There are [Current Alarm], [Alarm History] and [Alarm History(CF)] regarding Type of Alarm.

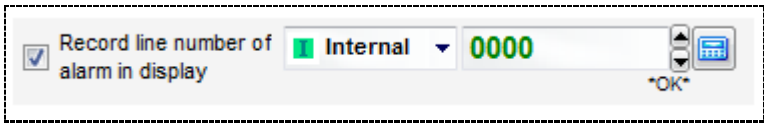
Type of Alarm	Explanation
Current Alarm	Displays currently-appeared alarm. If Alarm is appeared, it is displayed. If released, it disappears from Alarm Tag automatically.
Alarm History	Alarm which is already released is not disappeared, but remained and displayed as history in occurring sequence as well as currently-appeared alarm.
Alarm History (CF)	Displays Alarm History data saved in CF memory card.

27.2.1 Setting of Current Alarm

Current Alarm displays currently-set alarm list only.

(1) Alarm feature

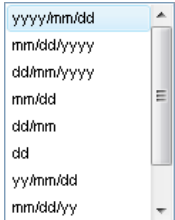
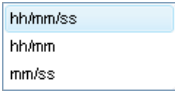
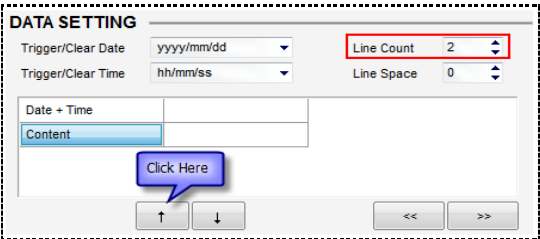
Alarm type	Explanation
Alarm type	Sets Current Alarm.
Group	Selects appeared Alarm to show group from A~Z Groups.
Max Length of Contents	In case of Current Alarm, it is displayed till end of contents though the longest length of contents is not set.



<p>Record line number of alarm</p> <p>In display</p>	<p>Used in Current Alarm only.</p> <p>Enables sequence No. of Alarm appears which is displayed in the first line out of Alarm List displayed in alarm tag to be saved in the designated address.</p> <p>Internal address of HMI system only is available regarding Address.</p> <div>  </div> <p>So, if displays this address as [Numeric Tag] in screen, can display sequence number of currently-displayed alarm in screen.</p>
--	--

(2) Alarm Data Setting

Sets data to show Current Alarm.

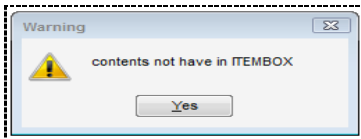
- Setting [Trigger/Clear Date:Date format], [Trigger/Clear Time:Time format], [Line Count:Number of lines] and [Line Space] of data to display

Property	Explanation
<p>Trigger/Clear</p> <p>Date</p> <p>(Date format)</p>	<p>Format which displays occurred/released dates of alarm. y means year, m means month, d means day. Selects one out of multiple formats.</p> <div>  </div>
<p>Trigger/Clear</p> <p>Time</p> <p>(Time format)</p>	<p>Format which displays occurred/released time of Alarm. h means hour, m means minute, s means second. Selects one out of multiple formats.</p> <div>  </div>
<p>Line Count</p> <p>(Number of lines)</p>	<p>Used in current alarm. Number of lines to show one alarm.</p> <p>One alarm can be displayed in multiple lines. Date and time can be displayed in the first line and alarm contents can be displayed in the second line.</p> <div>  </div> <p>[Figure. Position changes of Alarm Data]</p> <p>After selecting data to change position, positions of data are switched upside down if</p>

	presses   buttons.
Line Space	Used in current alarm. Sets displayed alarm and gap between alarms.

- **Type setting to display data**

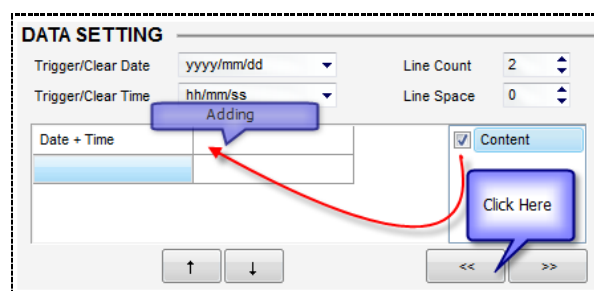
There are 2 ways to display type of data in current alarm , [Date + Time] and [Contents].

Type of data	Explanation
Date + Time	Date and Time which alarm is appeared. This data can be displayed or not be displayed along user's desire.
Contents	Contents of appeared alarm. This data is essential item to be displayed. If this data is excluded, following error message is displayed when presses [Confirm] button. 

- **How to add or delete data to display in Current Alarm**


- ① **How to add Alarm Data**

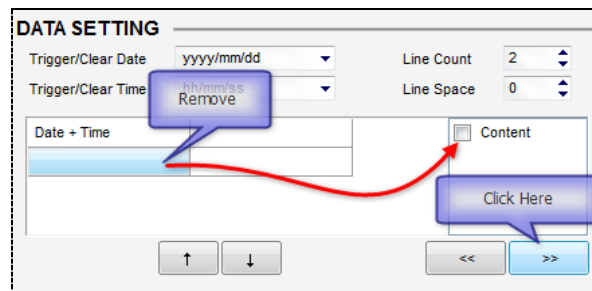
After selecting data + time in right list, Alarm Table is added if press  button at bottom.



[Figure. Adding alarm table]

- ② **How to delete alarm data**

After selecting Date+Time in right list, alarm table is deleted if press  button at bottom.

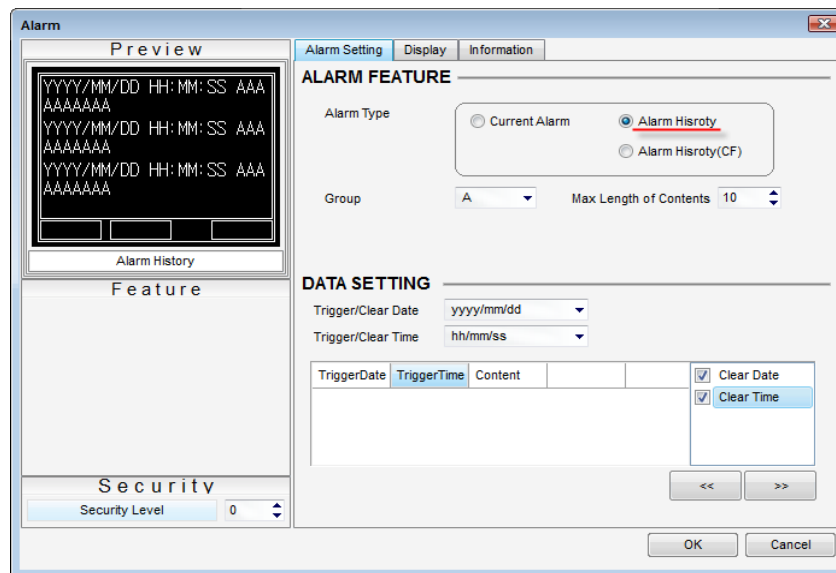


[Figure. Deleting alarm table]

27.2.2 Alarm History setting

Alarm History displays already-released alarm as well as currently-appeared alarm in occurred sequence.

Alarm History(CF) is set as same as Alarm History.



[Figure. Alarm History]

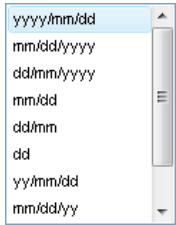
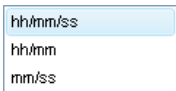
(1) Alarm feature

Alarm format	Explanation
Alarm type	Selects Alarm History.
Group	Selects group to display from A~Z groups.
Max Length of Contents	Inputs the length of the longest length of content from alarm list in the same group. If inputs the longest length of content in short, alarm content may not be displayed till the end and cut.

(2) Alarm Data setting

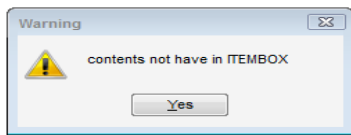
Sets data to show it as Alarm History.

- Setting [Trigger/Clear Date: Date format] and [Trigger/Clear Time:Time format] to display

Property	Explanation
Trigger/Clear Date (Date format)	<p>Format which displays occurred/released dates of alarm. y means year, m means month, d means day. Selects one out of multiple formats.</p> 
Trigger/Clear Time (Time format)	<p>Format which displays occurred/released time of alarm. h means hour, m means minute, s means second. Selects one out of multiple formats.</p> 

- Type setting data to display

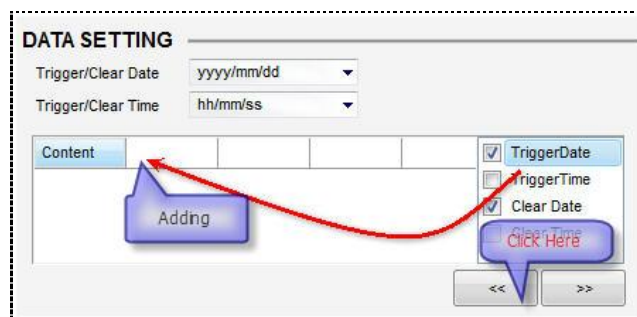
There are 5 types of data to display in Alarm History, [Trigger Date], [Trigger Time], [Alarm Contents], [Clear Data] and [ClearTime].

Type of Data	Explanation
Trigger Date	Date which Alarm is triggered.
Trigger Time	Time which alarm is triggered.
Content	<p>Contents of triggered Alarm. This data is the essential item to be displayed definitely. If this data is excluded, following error message appears if presses [Confirm] button.</p> 
Clear Date	Date which alarm is cleared.
Clear Time	Time which alarm is cleared.

- How to add or delete data to show in Alarm History

① How to add alarm data

After selecting data in right list, alarm table is added if press << button at bottom.



[Figure. Add alarm data]

② How to delete alarm data

After selecting data and time in right list, alarm table is added if press >> button at bottom.



[Figure. Delete alarm data]

27.3 Display page

Sets Frame, Font and Color of Alarm Tag.

[Figure. Display page]

27.3.1 Frame setting

Designates Frame color and Background color of Alarm.

(1) Frame Color/Background color

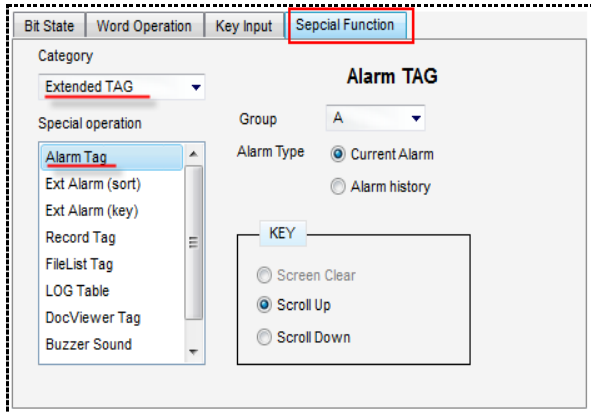
Frame Setting	Explanation
Frame color	Sets outline color of Alarm Tag Frame.
Background color	Sets background color of Alarm Tag Frame.

(2) Display option

There are Standard Type and Auto scroll(Ticker Type) regarding screen option. Scroll is the option to be applied to Current Alarm only.

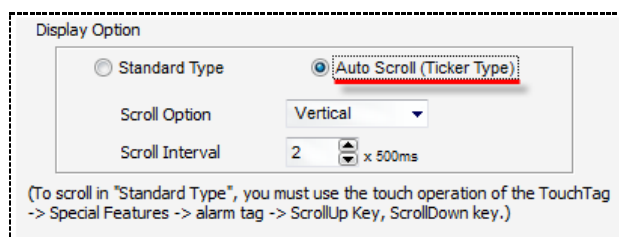
- Standard Type

[Figure. Standard Type of Display options]

Standard Type	Explanation	
Use Basic Frame	<p>If checks using Basic Frame, a button is created at bottom of Alarm Tag basically. UP/DOWN buttons is created in Current Alarm. Alarm History is created in UP/DOWN/CLEAR buttons.</p> <p>* Reference) If wants to register UP/DOWN/CLEAR buttons which were designed separately without using Basic Frame, it is OK to register [Touch Tag].</p> <div></div> <p>[Figure. Special function of operation page of touch tag]</p>	
	[UP] button	Moves triggered alarm up as size of [Up/Down scroll].
	[DOWN] button	Moves triggered alarm down as size of [Up/Down scroll].
	[CLEAR] button	Deletes all occurred alarms which it is cleared except currently-occured ones.
	Alarm Text Blink	Provides emphasizing effect by blinking Alarm Texts.
Up/Down Scroll Size	Sets distance which Up/Down buttons moves.	

● Auto Scroll option

As the option to be applied to Current Alarm only. In case of setting it as Alarm History, this Scroll Option is non active. The occurred alarm contents are displayed periodically in streaming.



[Figure. Scroll option out of Display option]

Auto Scroll	Explanation
Scroll option	<p>Sets scrolling direction.</p> <div> <div>Vertical</div> <div>Horizontal</div> </div> <p>Triggered alarm list is displayed each other between lines in [Vertical direction].</p> <p>Triggered alarm list is displayed each other between lines in [Horizontal direction].</p>
Scroll period	<p>Sets scrolling period.</p> <p>[0] period is the fastest speed as operating speed of TOP HMI System..</p> <p>[1 x 500ms] is 0.5 second.</p>

27.3.2 Font/Color

Font/Color setting	Explanation
Font	<p>Designates Font of texts displaying Alarm .</p> <p>Selects it from below list.</p> <div> <div>Gothic(8x16)</div> <div>Myungjo(8x16)</div> <div>Gothic(8x16)</div> <div>Gothic(16x32)</div> <div>ASCII(8x8)</div> </div> <p>Reference) When alarm list which is input in [Alarm setting] of [Project] menu is arranged by image Text or multiple language Table, it is displayed in image Text or multiple language Table.</p>
Font size	<p>Sets size of texts by designating Font size.</p> <p>Enlarges size of width/length as much as size of selected font from fonts.</p> <div> <div>A</div> <div>3x3</div> </div>
Text color (when triggers)	Text color of currently-occurred alarm.
Background color (when triggers)	Background color of currently-occurred alarm.
Alarm Clear Text	Text color of already-clear alarm.
Alarm Clear BG	Background color of already-clear alarm.
Text Alignment	<p>Sorts and displays data displayed in alarm by [Left], [Center] and [Right].</p> <div> <div></div> <div></div> <div></div> </div>

CHAPTER 28 Extended Alarm Tag

CHAPTER 28 – Extended Alarm Tag

[Alarm Ex Tag] is the tag which shows the occurred alarm list.

Alarm tag and Extended Alarm Tag work the same function, Alarm Ex Tag has more functions than alarm tag.

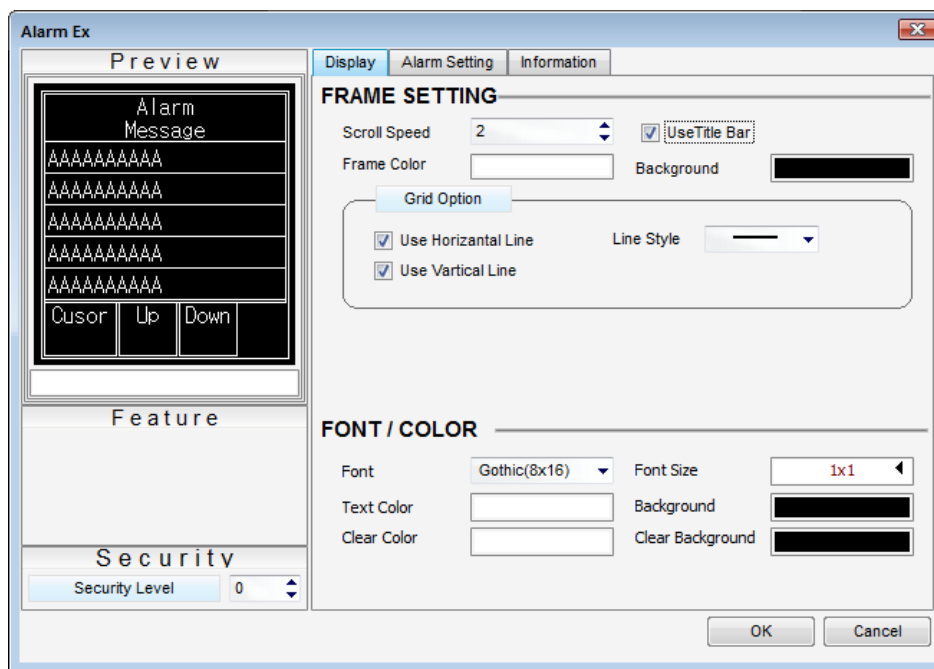
Alarm indicates error or problem items which are occurred in system.

Each alarm is registered in [Alarm setting] with bit address.

[Alarm setting] can be viewed if sets [Alarm setting] in [Entire setting] of [Project manager], or [Alarm setting] in [Project] menu.

(☞ Refer to [7.5] of [Chapter 7] regarding how to set alarm setting.)

Property Window of Extended Alarm Tag.



[Figure. Property screen of Extended Alarm Tag]

Extended Alarm Tag registered in edit screen.

Trigger Date	Trigger Time	Alarm Message	ACK Date	ACK Time	Recovered Date	Recovered Time	Occur No.
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0
MM/DD	HH:MM	AAAAAAAAAA	MM/DD	HH:MM	MM/DD	HH:MM	0

Cursor

Up

Down

DEL

Clear All

ACK

Clear Occur

Clear all occur

Enter

[Figure. Extended Alarm Tag registered in edit screen]

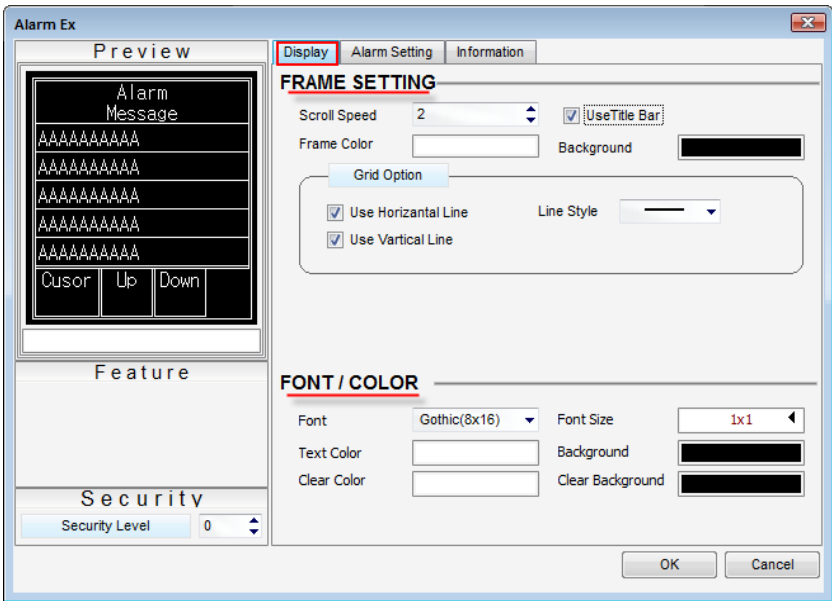
28.1 Property Window composition of Alarm Ex Tag

Extended Alarm Tag consists of 3 pages, [Display], [Alarm setting] and [Information].

Property	Explanation
Display	Page which sets design of Extended Alarm Tag. Sets frame Setting, Font &Color of Extended Alarm Tag.
Alarm Setting	Page which sets composition of extended alarm tag's contents and Buttons.
Information	Page which displays data of Alarm Ex Tag. Displays the number of registered screen, Tag ID, Create Time, Modified time, position and size information, and can edit position and size information.


28.2 Display page

Page which sets design of Extended Alarm Tag.



[Figure. Display page of Alarm Ex Tag]

28.2.1 Frame Setting

Frame setting	Explanation	
Scroll Line Count	Number of scroll lines of UP/DOWN buttons. UP/DOWN buttons move alarm data as number of scroll lines.	
Use Title Bar	Sets if display title or not. If checks, title is displayed at top of alarm data. If touches title, alarm data is sorted.	
Frame Color	Sets outline color of frame.	
Background color	Sets background color of frame.	
Grid Option	Explanation	Grid means graduation, displays horizontal/vertical lines between alarm data.
	Use horizontal line	Display horizontal line.
	Use vertical line	Display vertical line.
	Line Style	Selects shape of line to display grid. 

If checks [Use Title Bar] in extended alarm tag, displayed alarms are sorted if touches title part.

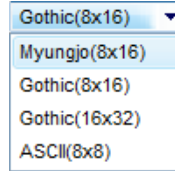
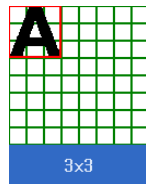
[Figure. Extended alarm tag]

Excepting [Alarm message] out of titles above, if touches [Trigger date], [Trigger time], [ACK date], [ACK time], [Recovered date], [Recovered Time] and [Occur No.], sorts displayed alarm based on touched titles.

In case of no displaying [Display title], separate touch buttons can be registered and sorted in screen.

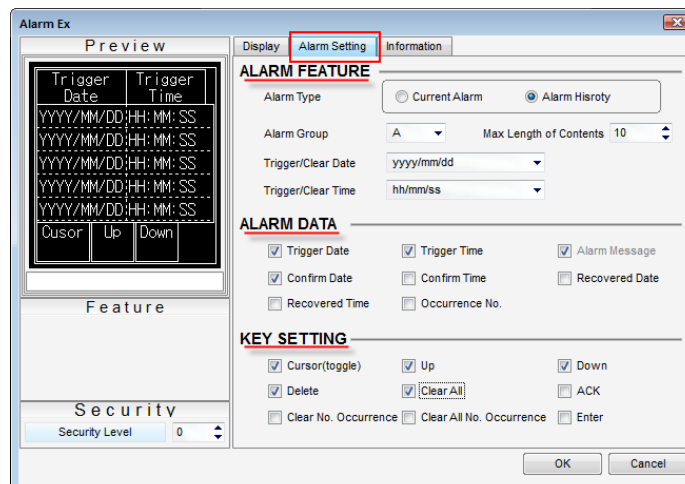


[Special function] of Touch Tag has the function of sorting as shown on the figure above.

Font/Color setting	Explanation
Font	<p>Alarms are displayed to specify the Font of the Texts.</p> <p>Select from the list below.</p>  <p>* Note) [Project] menu of the [Alarm Setting] the characters of the image input from the alarm list are multi-lingual tables and image Text. Characters are displayed as multi-language tables or Image Text.</p>
Font size	<p>Set the size of texts by designating the font size.</p> <p>Enlarges the size of the width/length as much as the size desired.</p> 
Text color (when triggers)	Text color of the current alarm is generated.
Background color (when triggers)	Background color of the current alarm is generated.
Clear Color	The text color of the alarm is already cleared.
Clear BG	The background color of the alarm is already cleared.

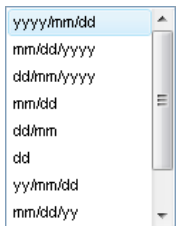
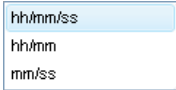
28.3 Alarm Setting page

Page which sets data and button to display in extended alarm tag.



[Figure. Alarm Setting page of Alarm Ex Tag]

28.3.1 Alarm Feature Setup

Alarm format	Explanation
Alarm Type	<p>Select one between the Current Alarm and Alarm History.</p> <p>[Current alarm] displays only the list of the latest occurring alarm.</p> <p>[Alarm history] displays already-released data as well as the latest occurring alarm.</p>
Alarm Group	Select the display group A ~ Z.
Max length of Contents	<p>Input the length of the longest alarm list in the same group. If inputs the longest length of contents in short , contents of alarm may not be displayed till the end and cut For a list of alarms in the same group with the longest length of the alarm type.</p> <p>Please enter the maximum length of minimum information or the alarm information will not be displayed until the edge and may be cut.</p>
Date format	<p>Format which displays triggered/recovered dates of alarm. y means year, m means month, d means day. Selects one out of multiple formats.</p> 
Time format	<p>Format which displays triggered /released time of alarm. h means hour, m means minute, s means second. Selects one out of multiple formats.</p> 

28.3.2 Alarm Data


Selects data to show.

Alarm Data	Explanation
Trigger Date	Date which alarm is triggered.
Trigger Time	Time which alarm is triggered.
Alarm Message	Alarm content.
Confirm Date	<p>The date which the user recognizes the alarm.</p> <p>After selecting the occurred alarm , recognized date is displayed when pressing the [ACK button].</p>
Confirm Time	<p>The time which the user recognizes the alarm.</p> <p>After selecting the occurred alarm , recognized time is displayed when pressing the [ACK button].</p>
Recovered Date	Date which alarm is released.

	Displayed when alarm history is set only.
Recovered Time	Date which alarm is released. Displayed when alarm history is set only.
Occurrence No.	The number of times the alarm occurred.

28.3.3 Alarm Button

Selects buttons to display.

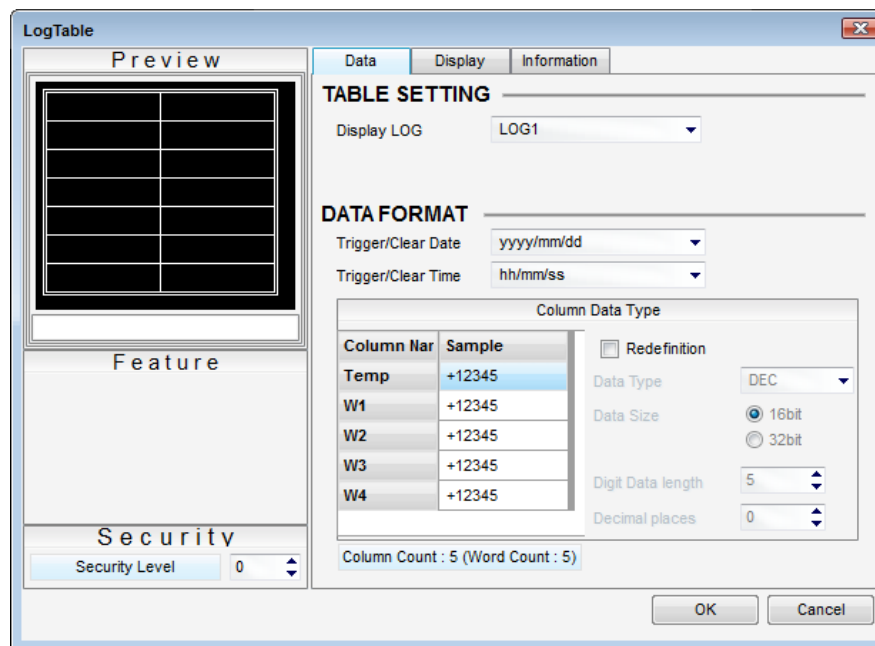
Alarm Button	Explanation
Cursor(Toggle)	Alarm at most upper position is selected out of displayed alarm. Alarm is selected if touches list of Extended Alarm Tag.
Up	In case of selecting cursor, moves position of cursor upward. In case of not selecting cursor, moves alarm data as [Number of scroll lines] up in [Display] page.
Down	In case of selecting cursor, moves position of cursor downward. In case of not selecting cursor, moves alarm data as [Number of scroll lines] down in [Display] page.
Delete	Deletes one [Released data] selected with cursor. Used in the case of setting it as alarm history because disabled alarm is displayed in alarm history only.
Clear All	Deletes all [Released data selected with cursor]. Used in the case of setting it as alarm history because disabled alarm is displayed in alarm history only.
ACK	Recognized date and time are displayed if pressed when the alarm is selected with cursor.
Clear No. Occurrence	The number of occurrence of selected alarm is changed to [0] with the cursor.
Clear All No. Occurrence	The number of occurrence of the total alarm is changed to [0].
Enter	In case of setting operation items for the selected alarm with cursor, operates along set action items. ( Refer to [7.5.3] of [Chapter 7] regarding action items.)

CHAPTER 29 LogTable

29.1 Outline of LogTable

LogTable displays logging data saved in internal memory of touch screen in a table format.

Property screen of LogTable.



[Figure. Property screen of LogTable]

LogTable appearance under actual operation.

No	Date	Time	Temp	W1	W2	W3	W4
1	2010/06/25	13:54:12	10	20	60	50	130
2	2010/06/25	13:54:19	50	70	60	50	130
3	2010/06/25	13:54:28	30	20	10	50	130
4	2010/06/25	13:54:41	59	40	1800	50	130
5	2010/06/25	13:54:50	10	50	1800	50	130
6	2010/06/25	13:54:57	90	20	1800	50	130
7	2010/06/25	13:55:08	80	40	1800	50	130

[Figure. Touch-screen LogTable]

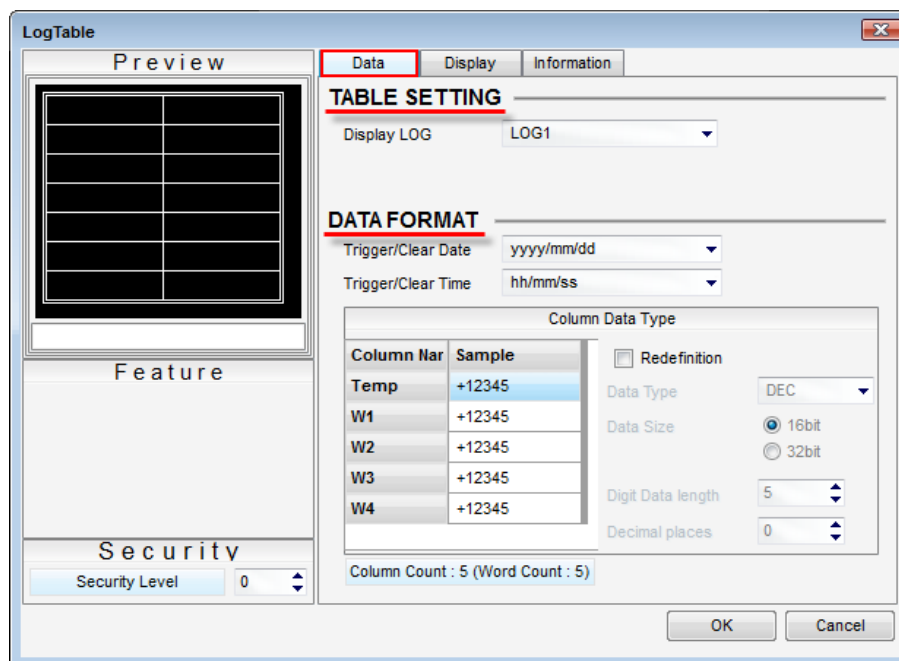
29.2 Property screen page composition of LogTable

Property screen of LogTable consists of [Data], [Display] and [Information].

Property page	Explanation
Data page	Page which sets logging data Sets date/time/column type in logging number and table.
Display page	Page which sets the design of LogTable Sets frame, column width and fonts of LogTable.
Information page	In LogTable is a page that displays information. It displays registered numbers on the screen, the tag ID, creation time and modification time, location and size information are displayed and you can modify the location and size information.

29.3 Data page

Selects logging data to display and format.



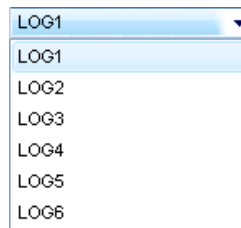
[Figure. Data page of LogTable]

29.3.1 TABLE SETTING

Sets logging number to display in the table setting.

Number which is set in [Logging setting] of [Project] menu is displayed only regarding logging out of [LOG1~LOG8].

If more than two LogTables which have the same logging number are registered in one screen, operation normally does not work.



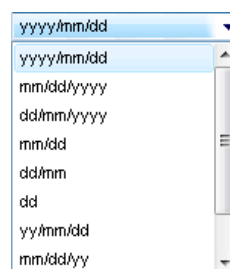
[Figure. Logging number]

29.3.2 DATA FORMAT

Sets format of data displayed in LogTable.

(1) Date format

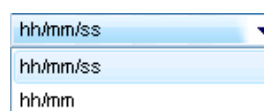
Choose the display date of saved logs, select one out of multiple date formats.



[Figure. Date format]

(2) Time format

Choose the display time of saved logs, select one out of multiple date formats.



[Figure. Time format]

(3) Column data type

Can select each format as [Number of column] set in selected logging.

If wants to designate it with new form, checks [Redefinition] and sets format by selecting each from [Column] at left.

Column Name	Sample
Temp	+12345
W1	+12345
W2	+12345
W3	+12345
W4	+12345

☒ Redefinition

Data Type: DEC

Data Size: ☒ 16bit ☐ 32bit

Digit Data length: 5

Decimal places: 0

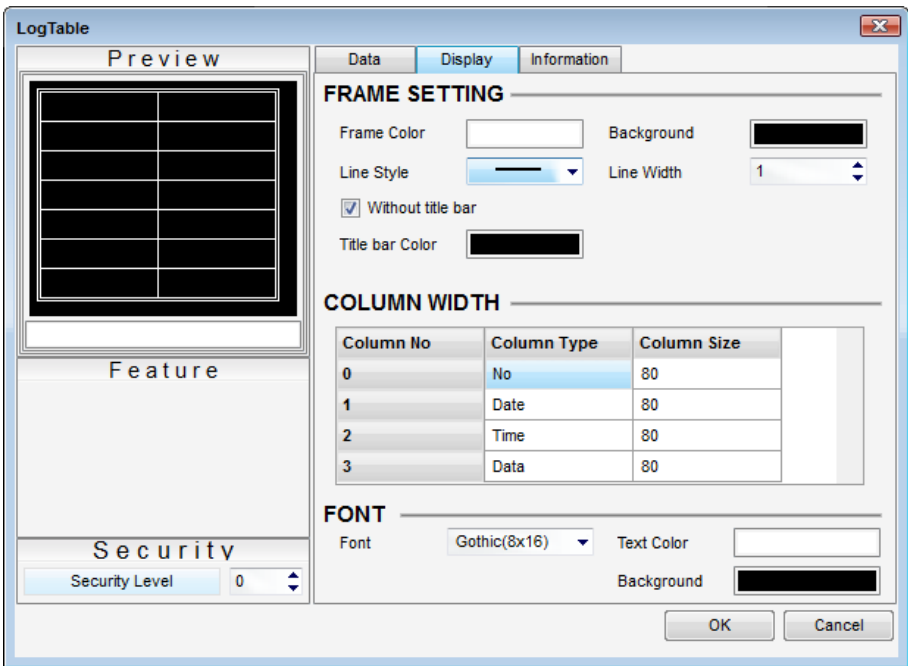
[Figure. Column data type setting]

Column name is set in [Column name & data type] page of [Project]–[Logging setting].

Column Data type	Explanation
Data Type	<p>Selects data type of column from format of figures below.</p> <div> <div>DEC</div> <div>UDEC</div> <div>HEX</div> <div>BCD</div> <div>FLOAT</div> </div> <p>[DEC] is a signed decimal, [UDEC] is an unsigned decimal, [HEX] is 16 digits, but [BCD] is actually 16 digits, it is data which is used just like a decimal because numbers including A~F are not displayed. [FLOAT] is the number with decimal points.</p>
Data Size	Selects one out of [16bit] or [32bit].
Digit Data length	The total number of digits of the selected column.
Decimal places	The primal number of digits of the selected column.

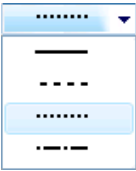
29.4 Display page

Sets design of LogTable.



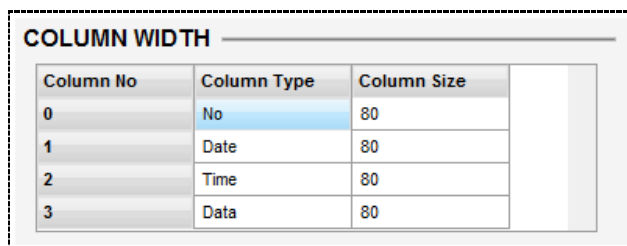
[Figure. Display page of LogTable]

29.4.1 FRAME SETTING

Frame	Explanation
Frame color	Sets frame color.
Background	Sets total background colors.
Line Style	Selects type of line to display grid. Type of provided line is 4 types as below figure. 
Line Width	Selects thickness of grid line out of [1~2 Dot].
Without title bar	Sets display of title or not.
Title bar color	Sets background color of title or not.

29.4.2 COLUMN WIDTH

Sets column width of data displayed in LogTable.



Column No	Column Type	Column Size	
0	No	80	
1	Date	80	
2	Time	80	
3	Data	80	

[Figure. Basic column width setting]

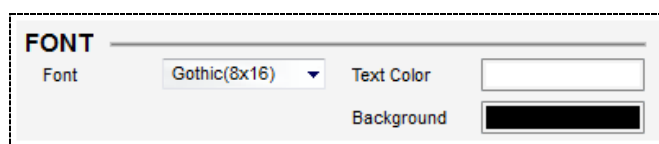
Column type	Explanation
No	Number of LogTable marked in sequence.
Date	Logging date.
Time	Logging time.
Data	Column which displays data.

Sets column size along column type.

Size of column is set by Dot(pixel) unit.

29.4.3 FONT

Sets fonts to display data of LogTable.



Font: Gothic(8x16) Text Color: [] Background: []

[Figure. Font setting]

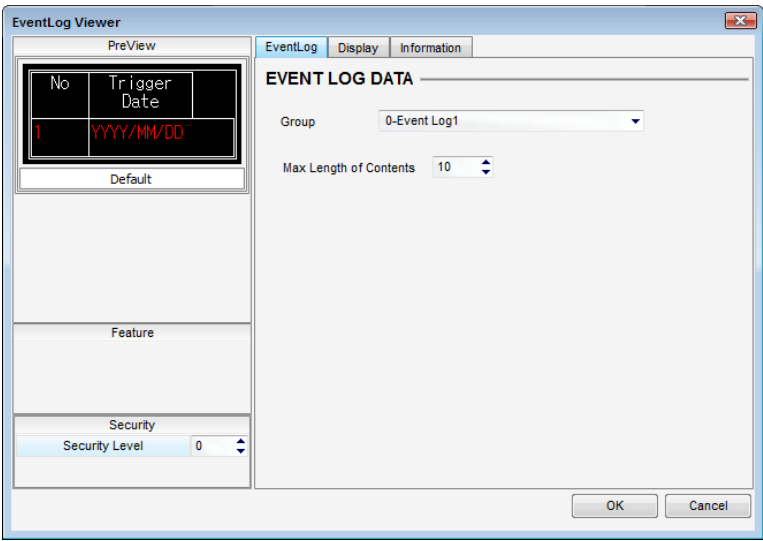
Font	Explanation
Font	Sets type of fonts. <div><div>Myungjo(8x16)</div><div>Gothic(8x16)</div><div>Gothic(16x32)</div><div>ASCII(8x8)</div></div>
Text color	Sets font color used in LogTable.
Background	Sets background color of text used in LogTable.

CHAPTER 30 EventLog Viewer tag

CHAPTER 30 – EventLog Viewer Tag

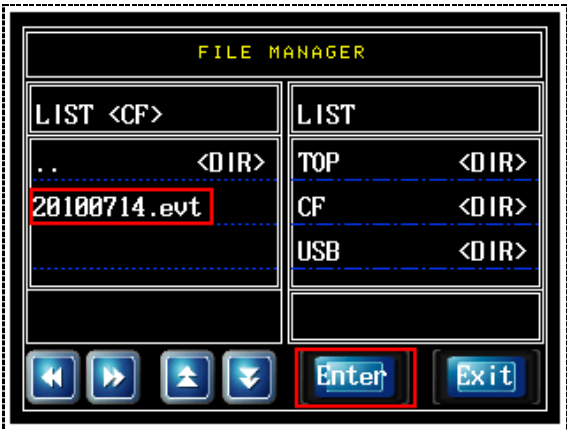
30.1 Outline of EventLog Viewer Tag

Event which is set in [Eventlog] of [Project] menu is saved in CF memory card if it meets conditions.
[EventLog Viewer tag] displays eventlog data recorded in CF memory card in screen.
(☞ Refer to [7.9] of [Chapter 7] regarding how to set [Eventlog].)



[Figure. Property screen of EventLog Viewer tag]

To select eventlog file [*.evt] saved in CF memory card in [File manager], press [Enter] twice, eventlog data is displayed in EventLog Viewer tag.
(☞ Refer to [40.6] of [Chapter 40] regarding File Manager.)



[Figure. Selects eventlog file with File Manager]

EventLog Viewer tag registered in screen

Event No	Trigger Date	Trigger Time	Event Message	Previous Value	Changed Value
1	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA +	0	0
2	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
3	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
4	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
5	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
6	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
7	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
8	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
9	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
10	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
11	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
12	YYYY/MM/DD	HH:MM:SS	AAAAAAAAAA	0	0
UP	DOWN	>>	<<		

[Figure. EventLog Viewer tag registered in edit screen]

EventLog Viewer	Explanation
No	Displays sequential number event is triggered.
Trigger Date	Displays date event is triggered.
Trigger Time	Displays time event is triggered.
Event Message	Displays contents of event.
Previous Value	Displays previous data value before the event is triggered.
Changed Value.	Displays changed data value which causes the event.
UP	Scroll up.
DOWN	Scroll down.
>>	Scroll to the right.
<<	Scroll to the left.

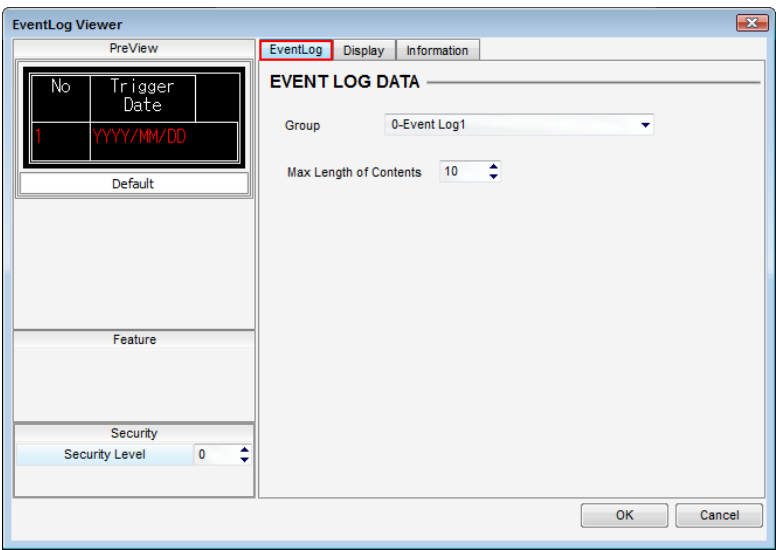
30.2 Page composition of EventLog Viewer tag property screen

Property screen of EventLog Viewer tag consists of [Eventlog], [Display] and [Information].

Property page	Explanation
Eventlog page	Page which sets group of eventlog to display and the longest length of contents.
	The page displaying the event log of the group and the maximum length of the content.
Display page	Page which sets frame and text font.
Information page	Page which displays data of EventLog Viewer tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

30.3 Eventlog page

Page which sets group of eventlog to display and the longest length of contents.

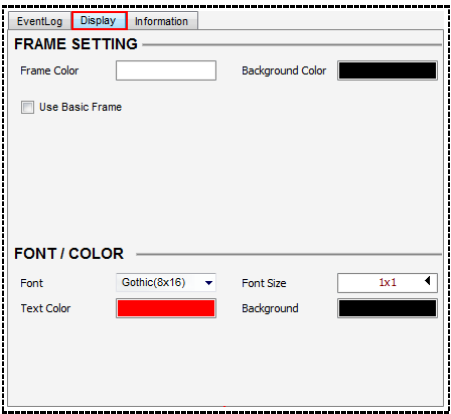


[Figure. Eventlog page]

Evetlog page	Explanation
Group	Selects group to display in group set in [Eventlog].
Max length of contents	Sets the maximum length of display information. The contents of a selected group of the event can be set to a maximum of 80 for the longest length of selected group.

30.4 Display page

Page which sets frame and text font.



[Figure. Display page]

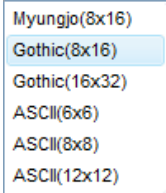
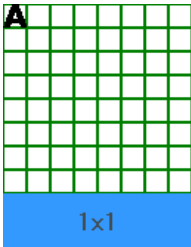
30.4.1 FRAME SETTING

Set the frame of Event Log Viewer tag displayed on the screen.

Frame setting	Explanation
Frame Color	Set the color of the frame of the Event Log Viewer tag.
Background Color	Set the background color of the frame of the Event Log Viewer tag.
Use Basic Frame	If 'use basic frame' is chosen, the scroll button basically creates at the bottom of EventLog Viewer tag.

30.4.2 FONT/COLOR

Sets text font, size and color displayed in EventLog Viewer tag.

Font/color	Explanation
Font	<p>Selects displayed text font from the list below.</p> 
Font Size	<p>Enlarges the width/length size of the font size as much as desired.</p> 
Text Color	Sets displayed text color.
Background	Sets displayed text background color.

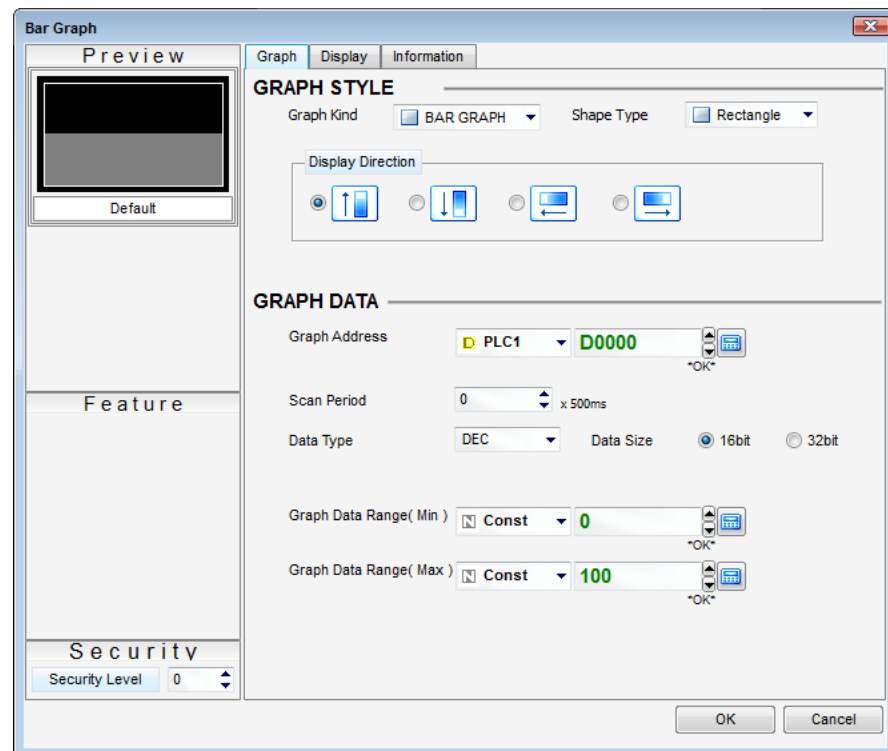
CHAPTER 31 Bar Graph Tag

CHAPTER 31 – Bar Graph Tag

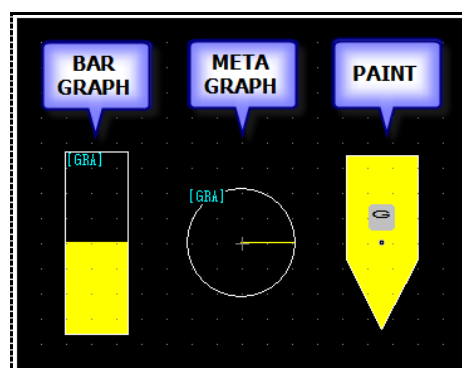
31.1 Outline of Bar Graph Tag

Bar Graph tag displays data of word address with graph.

There are [Bar Graph], [META Graph] and [Paint closed boundary] regarding Bar Graph.



[Figure. Property screen of Bar Graph tag]



[Figure. Type of Bar Graph]

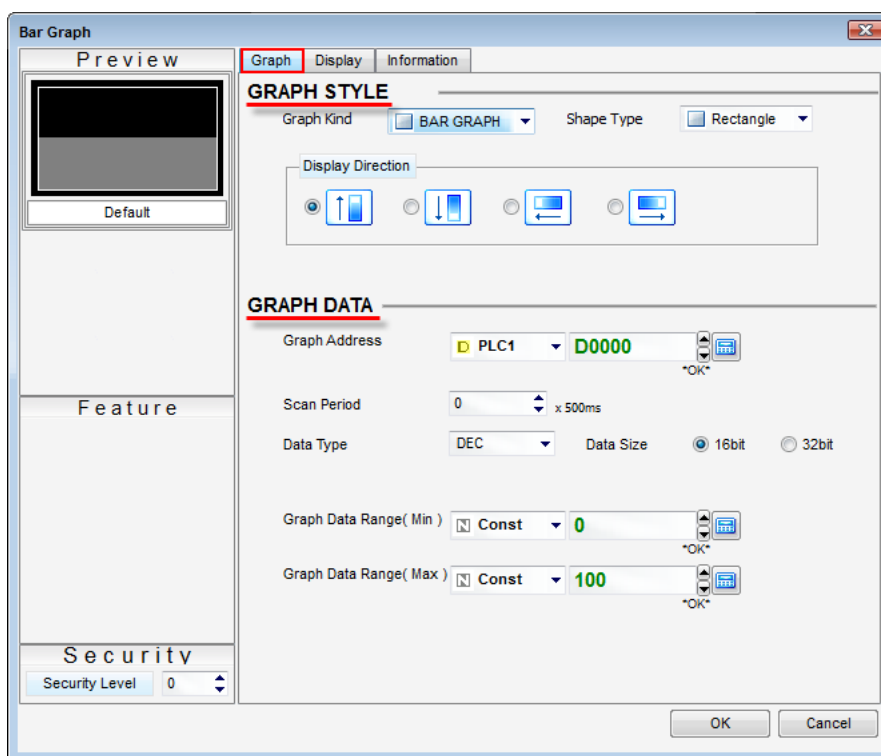
31.2 Page composition of Bar Graph tag property screen

Property screen of Bar Graph tag consists of [Graph], [Display] and [Information] pages.

Property page	Explanation
Graph page	Page which selects type of graph, sets word address input to read data and Min. & Max. word value expressed in graph.
Display page	Page which sets color of graph to be displayed. Can express graphs in multiple colors for set each section of word value.
Information page	Page which displays data of Bar Graph tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

31.3 Graph page

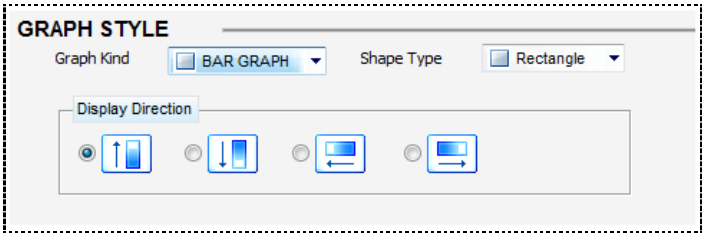
Select the type of graph, graph address and the minimum/maximum settings.



[Figure. Address page]

(1) Bar Graph

Displays data in bar-shaped graph.
Sets direction which bar is enlarged as data gets bigger by setting direction of graph.

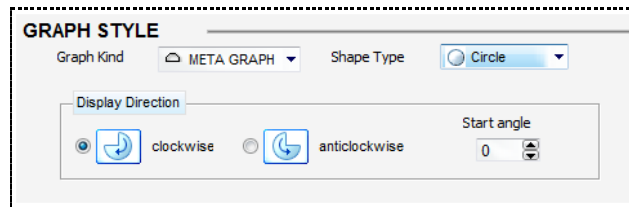


[Figure. Bar Graph]

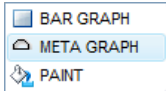
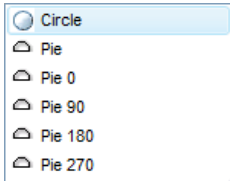

Bar Graph	Explanation
Graph Kind	Selects Bar Graph. <div><div><div>BAR GRAPH</div><div>META GRAPH</div><div>PAINT</div></div></div>
Shape Type	Set whether the Bar Graph border is displayed. <div><div>No Frame</div><div>Rectangle</div></div> <p>[No Frame] – Does not use the border frame for Bar Graph.</p> <p>[Rectangle] – Uses the border frame for Bar Graph.</p>
Display Direction	Sets direction of enlarging bar as data gets bigger out of left/right/up/down directions. The increase of the data can be set in different directions. . <div><div>Display Direction</div><div><div><div></div><div></div><div></div><div></div></div></div></div>

(2) Meta graph

Displays data in a circle-shaped graph. Moving direction of the needle and the original image can be set.



[Figure. Meta graph]

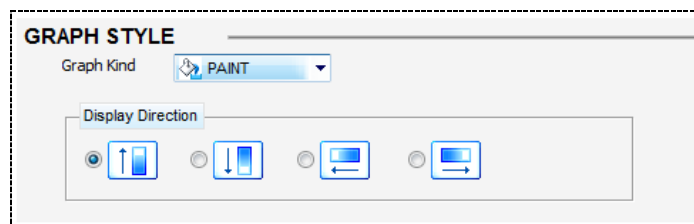
Meta graph	Explanation
Graph Kind	<p>Selects Meta graph.</p> 
Shape Type	<p>Selects shape of Meta graph.</p>  <p>[Circle] – Circle shape, [Pie] – Pie shape, [Pie 0, 90, 180, 270] – Fan shape</p>
Display Direction	<p>Sets direction of moving needle of Meta graph.</p>  <p>[Start angle] – Initial position of needle is changed along set angle. Start angle can be set when shape of the frame is [Circle] only.</p>

(3) Paint closed boundary

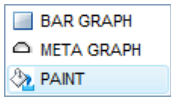

Displays data in graph which is composed of closed boundary of figure shape.

First, registers figures in closed boundary, then registers graph set as [Paint closed boundary] in figures of closed boundary.

Displays data along painting data in figures of closed boundary.

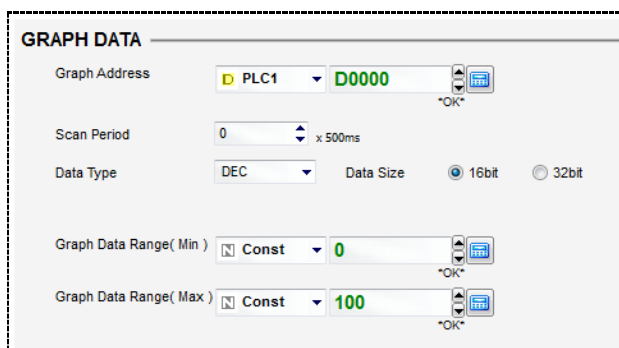


[Figure. Paint closed boundary]

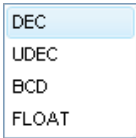
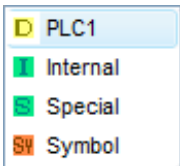
Paint closed boundary	Explanation
Graph Kind	<p>Selects paint closed boundary.</p> 
Display Direction	<p>Sets coloring direction as data gets bigger out of left/right/up/down graph direction.</p> 

31.3.2 GRAPH DATA

Sets address of graph and Min/Max.



[Figure. Graph data setting]

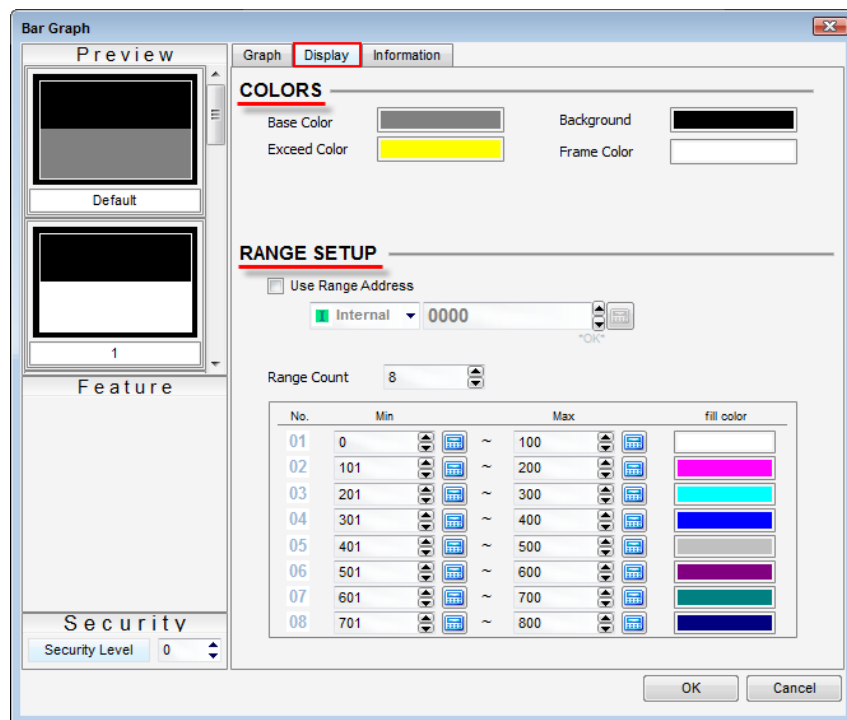
Graph data setting	Explanation
Graph address	Sets word address to express in graph.
Scan period	Sets update period reading word address data by 500ms(0.5 second) unit.
Data Type	<p>Selects type of data to use from below chart.</p>  <p>[DEC] is symbolic decimal. [UDEC] is non-symbolic decimal. [HEX] is hexadecimal. [BCD] is hexadecimal actually, it is data which is used just like decimal because numbers including A~F are not displayed. [FLOAT] is the number with decimal point.</p>
Data Size	<p>Selects one out of 16bit or 32bit.</p> <p>32bit is used when uses bigger value. 32bit is used when using a bigger value.</p>
Graph Data Range (Min.)	<p>Inputs Min.of graph.</p> 

	The minimum value is set as a fixed initial input in constant, but can be set flexibly according to the data of the address.
Graph Data Range (Max.)	Inputs Max.of graph. The maximum value is set as a fixed initial input in constant, but can be set flexibly according to the data of the address.

31.4 Display page

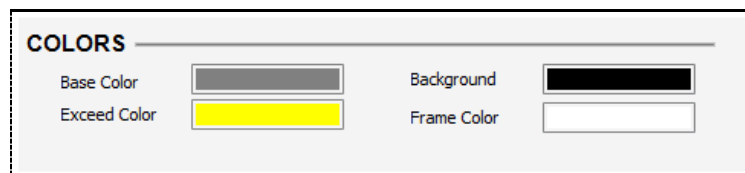
Page which sets filling color of graph, background color and frame color

Can display filling colors differently along section of data.



[Figure. Display page]

31.4.1 COLORS



[Figure. Color setting]

Graph color setting	Explanation
Base Color	Sets filling color to be filled in graph when data is between Min. and Max.
Exceed Color	Sets filling color to be filled in graph when data exceeds Max.
Background	Sets background color of graph. Background of graph is the part beyond data in graph.
Frame Color	Sets frame color of graph.

31.4.2 RANGE SETUP

Used to change the color of the filling word address data according to the graph intervals.

Graph-filling color is a single color.

[Figure. Section setting]

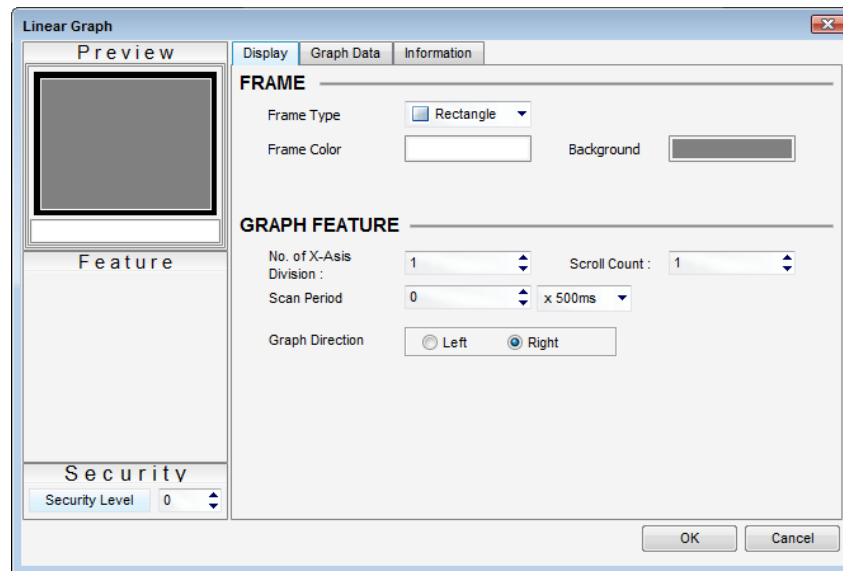
Section setting	Explanation
Use Range Address	Used to set address other than the word address in the reference section [graph on page] [graph address].
Range Count	Sets number of section to sets colors. Can use maximum 8 sections.
No.	Sequential number of set section.
Min.	Inputs Min.of section.
Max.	Inputs Max.of section.
Fill color	Sets filling color of graph to use in the section.

CHAPTER 32 Linear Graph Tag

CHAPTER 32 – Linear Graph Tag

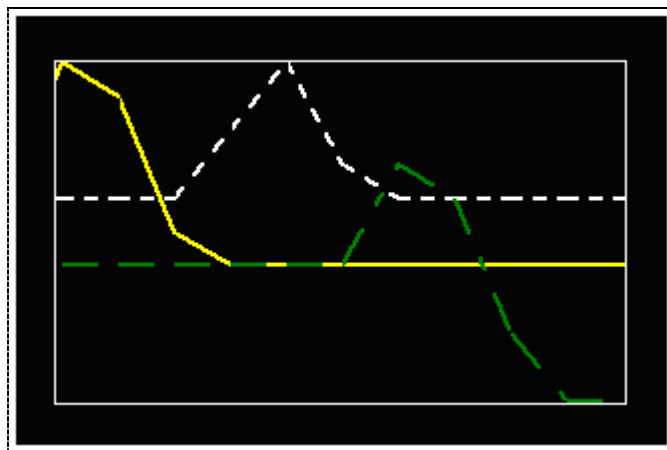
32.1 Outline of Linear Graph Tag

Linear Graph tag displays data change of word address as time goes by in Linear Graph.
Can display maximum 20 Linear Graphs in one Linear Graph tag.



[Figure. Property screen of Linear Graph tag]

Linear Graph tag under actual operation in touch screen.



[Figure. Operating screen of Linear Graph tag]

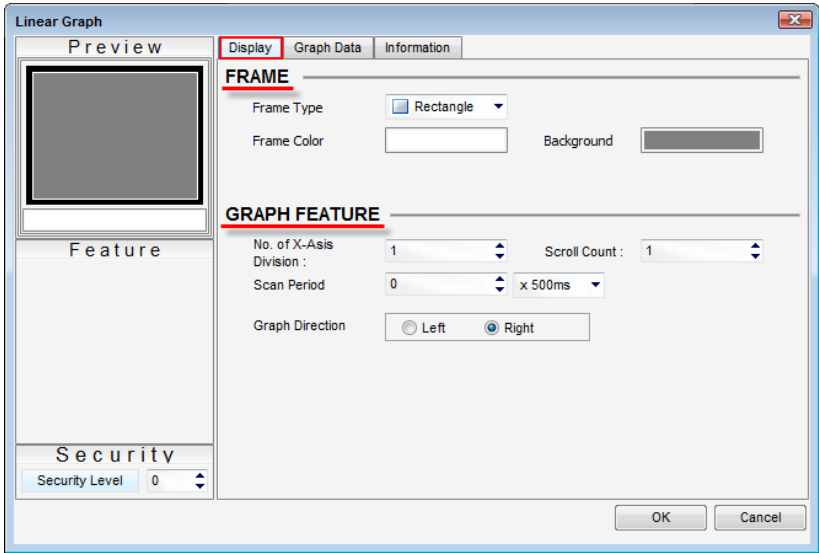
32.2 Page composition of Linear Graph tag property screen

Property screen of Linear Graph tag consists of [Display], [Graph] and [Information] pages.

Property page	Explanation
Display page	Page which sets frame of Linear Graph and property of graph.
Graph Data pgae	Page which registers Linear Graph by setting word address, Min./Max. and shape of line.
Information page	Page which sets data of Linear Graph tag. It displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

32.3 Display page

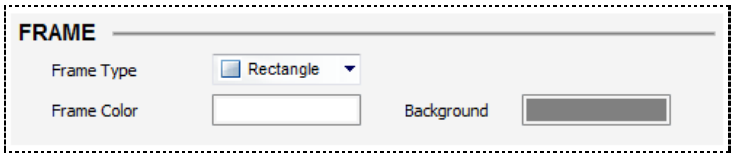
Page which sets frame of Linear Graph and property of graph.



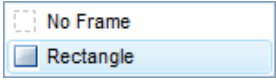
[Figure. Display page]

32.3.1 FRAME

Sets frame of graph and background color.

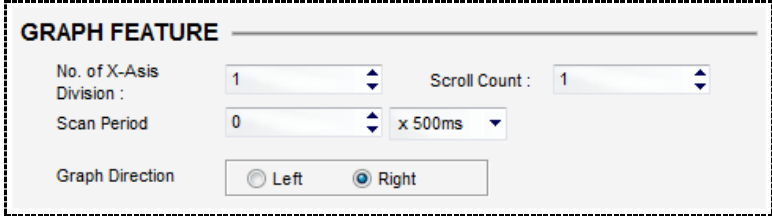


[Figure. Frame setting]

Frame setting	Explanation
Frame Type	<p>Selects if displays frame or not from below chart.</p> 
Frame Color	Sets frame color.
Background	Sets background color in graph.

32.3.2 GRAPH FEATURE

Sets X axis graduation of graph, number of scroll, update period and graph direction.



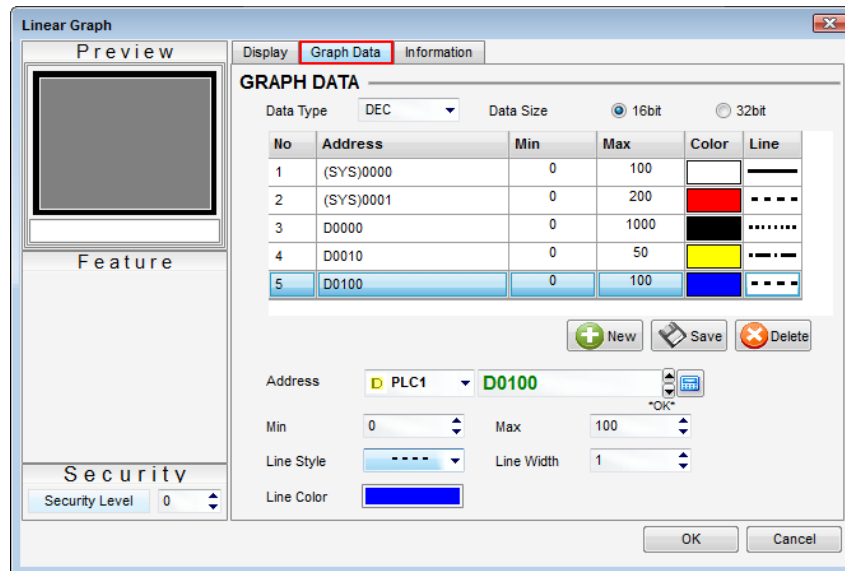
[Figure. Graph property setting]

Graph property setting		Explanation
No. of X-Axis Division		<p>Sets number of graduation in X axis. Displays data change as many as number of graduation in X axis.</p> <p>Can set it as maximum [Horizontal resolution] of touch screen.</p>
Scroll Count		When graph is drawn in screen, graph is kept drawn backward. At this time, graph is moved as many as [Number of scroll].
Scan Period		<p>Time to draw one data in graph. Update period is set by 500ms(0.5 second) unit.</p> <p>Draws graph by one graduation by reading data per update period.</p>
Graph Direction	Left	Linear Graph is drawn from right to left.
	Right	Linear Graph is drawn from left to right.

32.4 Graph Data page

Page which sets Linear Graph by setting word address, Min./Max. and shape of lines.




Graph can be registered up to maximum 20.




[Figure. Graph data page]




Part	Explanation
Data Type	<p>Selects type of data to use from below list.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> DEC UDEC BCD FLOAT </div> <p>[DEC] is symbolic decimal. [UDEC] is non-symbolic decimal. [HEX] is hexadecimal. [BCD] is hexadecimal actually, it is data which is used just like decimal because numbers including A~F are not displayed. [FLOAT] is the number with decimal point.</p>
Data Size	<p>Selects one out of 16bit or 32bit.</p> <p>32bit is used when uses bigger value than 16bit.</p>
Address	Sets word address to express it with line graph.
Min.	Set the minimum of the graph.
Max.	Sets the maximum number of graphs.
Line Style	<p>Selects shape of line of Linear Graph from list below.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> — - - - . . . - - - </div>
Line Width	Sets thickness of Linear Graph. Can set up to maximum 2.
Line Color	Sets color of line of Linear Graph.

Can register maximum 20 Linear Graphs in one Linear Graph.
 Register of graph is done by [New/save/delete] buttons.

Button	Explanation
 New	Registers new graph.
 Save	Saves contents set in selected graph list.
 Delete	Deletes selected graph.


First, registers Linear Graph to basic value by pressing  button.

No	Address	Min	Max	Color	Line
1	D0000	0	100		——
2	D0000	0	100		——
3	D0000	0	100		——
4	D0000	0	100		——
5	D0000	0	100		——

 New
  Save
  Delete

[Figure. Register graph]

Add as many graphs as needed and select the graph to change the settings with the mouse.

At the bottom part of the address / min / max / shape of line by setting the amount and click  button to save the settings.

No	Address	Min	Max	Color	Line
1	(SYS)0000	0	100		——
2	(SYS)0001	0	200	Red	- - - -
3	D0000	0	1000	Black
4	D0010	0	50	Yellow	- . - .
5	D0100	0	100	Blue	- - - -

[Figure. Register graph]

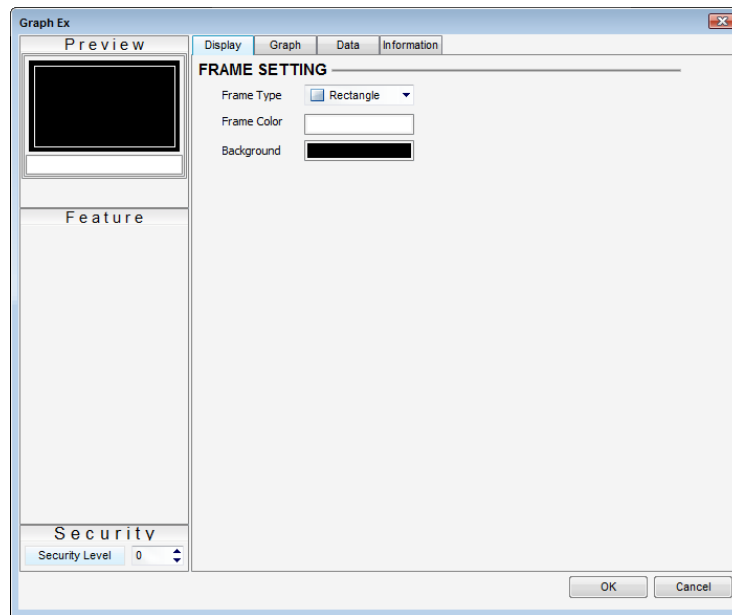
CHAPTER 33 Graph Ex Tag

33.1 Outline of Graph Ex Tag

Tag which displays logging or recipe data in graph.

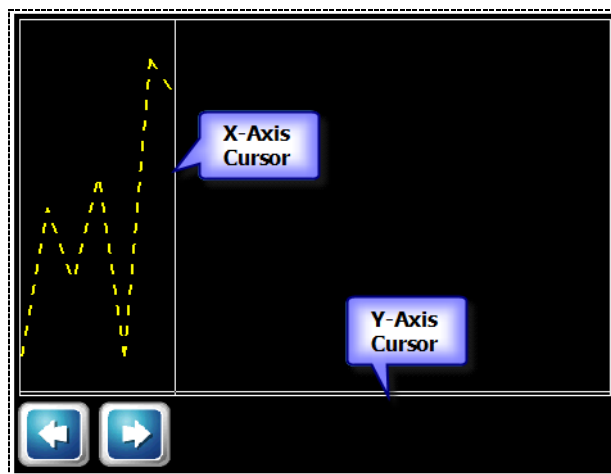
Can display multiple data such as color of line and thickness in one graph.

Property screen of Graph Ex tag.



[Figure. Property screen of Graph Ex]

Graph Ex under operation in actual touch screen.



[Figure. Graph Ex of touch screen]

33.2 Property screen page composition of Graph Ex

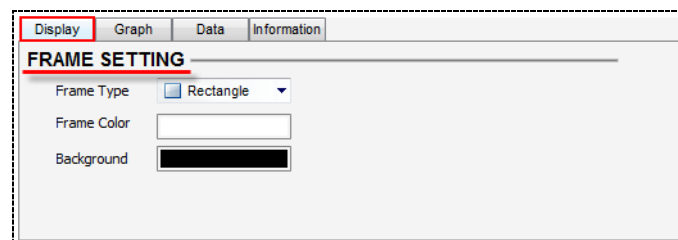
Graph Ex consists of [Display], [Graph] and [Information] pages.

Property Page	Explanation
Display page	Page which sets design of graph. Sets shape of frame, color and background color.
Graph page	Page which sets property of graph. Sets display gap of graph, data type, X axis start address, cursor and magnification.
Data page	Page which sets data to display graph. Sets data to display, Max. and Min. out of logging/recipe.
Information page	Page which displays data of Graph Ex tag. It displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

33.3 Display page

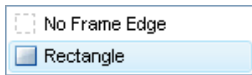
Page which sets design of Graph Ex.

Sets shape of frame, color and background color.



[Figure. Display page of Graph Ex]

33.3.1 FRAME SETTING

Display	Explanation
Frame Type	Selects one as frame shape of Graph Ex out of [No Frame Edge] and [Rectangle.] 
Frame Color	Sets frame color of Graph Ex.
Background	Selects background color of Graph Ex.

33.4 Graph page

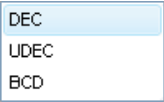
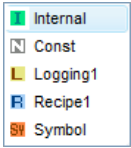
Page which sets property of graph.
Sets display gap of graph, data type, X axis start address, cursor and magnification.

[Figure. Graph page of Graph Ex]

33.4.1 GRAPH FEATURE

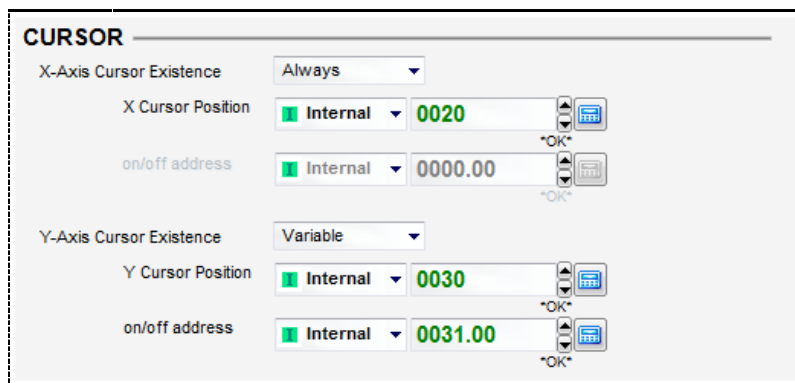
As part which sets graph type of Graph Ex, sets display gap of graph, data type, X axis start address.

[Figure. Graph type]

Graph type	Explanation
Dots/Scale	Gap displays one data in graph. Unit is dot(pixel).
Data Type	<p>Selects one out of [DEC], [UDEC] and [BCD].</p>  <p>[DEC] is decimal. [HEX] is hexadecimal. [BCD] is hexadecimal actually, it is data which is used just like decimal because numbers including A~F are not displayed.</p>
Data Size	Selects one out of [16bit] or [32bit].
X Axis Start Value	<p>X axis start address is [0] of X axis, that is, function which sets data of starting position.</p>  <p>Address can be chosen between several kinds as shown above.</p> <p>[Const] is for a case of fixing data of starting point.</p> <p>If sets [10] as constant, 10th data out of logging/recipe data becomes data of starting point.</p> <p>If uses [Internal] address, [Logging] or [Recipe] data, can view graph as changing data of starting position because data is changed occasionally.</p>

33.4.2 CURSOR

Sets horizontal (cursor in Y axis)/vertical (cursor in X axis) cursor displayed in Graph Ex.



[Figure. Cursor]

Cursor	Explanation	
X-Axis Cursor Existence	Selects view/not view	<p>Sets existence or nonexistence of display of X axis cursor.</p> <div> </div> <p>[Nothing] does not display the cursor.</p> <p>[Always] always displays the cursor.</p> <p>[Variable] conditions a bit of the address ON / OFF state depending on the display cursor, or may not be displayed.</p>
	X Cursor Position	<p>Selects one out of [Internal address] or [Constant].</p> <div> </div> <p>If designates [Constant], position of cursor gets fixed.</p> <p>If designates [20] as constant, cursor is displayed at 20th data.</p> <p>If designates [Internal] address, position of cursor can be controlled in fluid because it can be changed.</p>
	On/off address	<p>In case of selecting [Variable] only, can be set.</p> <p>If data of bit condition address is [ON], cursor is displayed, if [OFF], cursor is not displayed.</p>
Y-Axis Cursor Existence	Selects view/not view	<p>Sets existence or nonexistence of display of Y axis cursor.</p> <div> </div> <p>[Nothing] does not display the cursor.</p> <p>[Always] always displays the cursor.</p> <p>[Variable] conditions a bit of the address ON / OFF state depending on the display cursor, or may not be displayed.</p>
	Y Cursor Position	<p>Selects one out of [Internal address] or [Constant].</p> <div> </div> <p>If designates [Constant], position of cursor gets fixed.</p> <p>If designates [20] as constant, cursor is displayed at 20th data.</p> <p>If designates [Internal] address, position of cursor can be controlled in fluid because it can be changed.</p>
	On/off address	<p>In case of selecting [Variable] only, can be set.</p> <p>If data of bit condition address is [ON], cursor is displayed, if [OFF], cursor is not displayed.</p>

33.4.3

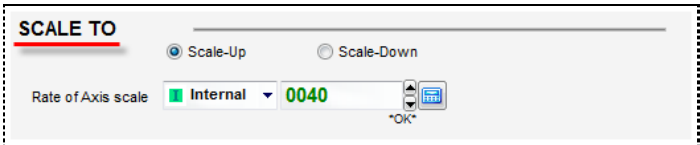
SCALE TO

Can displays graph by enlarging or shrinking.

First, selects if to enlarge graph or shrink.

Cannot set enlarging and shrinking in Graph Ex simultaneously, can one only out of two.

Then, sets magnification of enlarging/shrinking by input graph magnification address.



[Figure. Magnification]

Magnification	Explanation
Scale-Up	Can enlarge and view as much as set magnification.
Scale-Down	Can shrink and view as much as set magnification.
Rate of Axis scale	<div>When graph magnification address is constant, magnification gets fixed, when it is logging/recipe data, can control magnification in fluid.</div> <div><div><div>Internal</div><div>Const</div><div>Logging1</div><div>Recipe1</div><div>Symbol</div></div></div> <div>In case of setting [Enlarge graph], if data is [2], it is displayed in double, if data is [3], it is displayed in triple.</div> <div>In case of setting [Shrink graph], if data is [2], it is displayed in a half, if data is [3], it is displayed in a third.</div> <div>If data is not [0] or [1], graph is displayed in original size.</div>

33.5 Data page

Page which sets data to display in graph.

Sets data to display, Max. and Min. out of logging/recipe.

Can display maximum 20 data in one graph with graph.

Description	Graph Type	Graph Data
WROD1	Trend	(LOG1) block:0 word:0
TEMP	Trend	(LOG1) block:0 word:1
quantity	Trend	(LOG1) block:0 word:2

Buttons: + New, Save, Delete

Graph Type: ☒ Trend Graph, ☐ XY Chart

Graph Data:

Read Direction:

Count X/Y Point:

The value of Y axis when X axis cursor is placed upon graph.:

Y-Axis MIN: Y-Axis MAX:

Visibility On/Off: Line Style: Line Color: Line Width:

[Figure. Data page of Graph Ex]

33.5.1 ADD GRAPH TO DISPLAY IN GRAPH

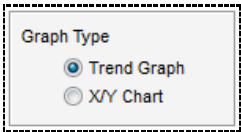
There is a list of data to display in graph at top of data page, property of each graph can be set at bottom.

Creates [Graph data] by pressing [Create] button, saves setting contents by pressing [Save] button after setting detailed property of graph data at bottom.

Property	Explanation
Description	Explanation on graph data.
	Creates new graph data.
	Saves detailed property of set graph data.
	Deletes registered graph data.

33.5.2 Graph Type

There are two types, [Linear Graph] and [X/Y chart] in graph.

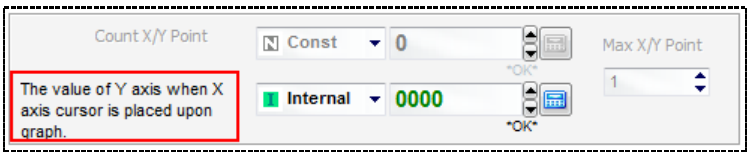


[Figure. Type of graph]

Type of graph	Explanation
Trend Graph	Two-dimensional graph which can view logging/recipe data in X axis by time, Y axis by data with data change as time goes by.
X/Y chart	Graph which enables logging/recipe data to be dotted in (X, Y) coordinates.

(1) In case of selecting Linear Graph

Sets [Y axis value(internal address) overlapped with X axis cursor] in Linear Graph.

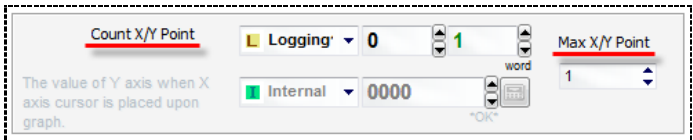


[Figure. In case of selecting Linear Graph]

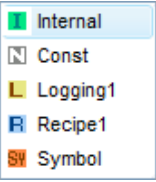
[Y axis value(internal address) overlapped with X axis cursor] enables graph value of intersection with X axis cursor, that is, Y axis value to be saved in designated (internal) address.

(2) In case of selecting X/Y chart

Sets [X/Y graph number of dots] and [Max. X/Y number of dots] in X/Y chart.



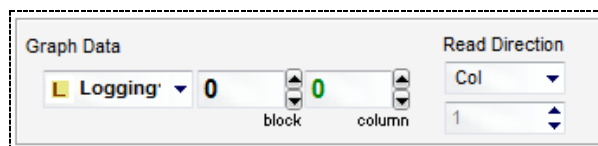
[Figure. In case of selecting X/Y chart]

X/Y chart	Explanation
Count X/Y Point	<p>Number of dots which is marked in (X, Y) coordinates.</p> <p>Can set number of dots as various kind of addresses.</p> <p>If selects [Constant], number of dots gets fixed, if sets it as [Internal] address or [Logging/recipe] data, can control number of dots in fluid.</p> 
Max. X/Y Point	Number of dots which marked in (X, Y) coordinates.

33.5.3 Graph data/reading direction

Sets graph data to display.

Sets graph data along reading direction.



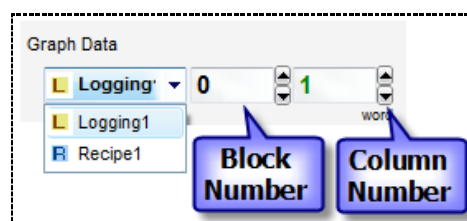
[Figure. Graph data/reading direction]

(1) Graph data

Graph data selects logging/recipe data to display in graphs out of previously-set logging/recipe data. Then, inputs [Block number] and [Word number], selects data to display out of selected logging/recipe data.

[Block] means data when logging data is saved one. Number starts from [0] block.

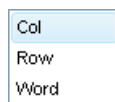
[Word(column)] means number of data which is saved when logging. Number starts from [0] word.



[Figure. Graph data]

(2) Reading direction

Reading direction selects one out of [Col], [Row] and [Word].



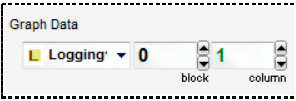
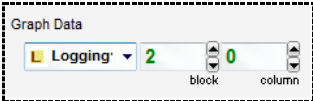
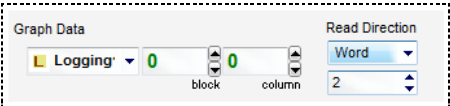
[Figure. Reading direction]

Logging data is saved as below chart.

Supposes logging setting which number of column(logging subject) is 5.

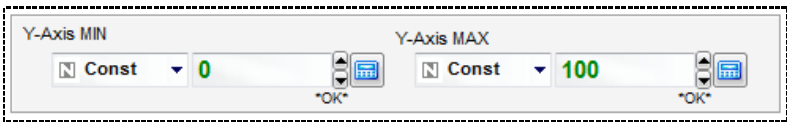
If explains [Reading address] based on this chart, it is as followings.

	Date	Time	Column 0	Column 1	Column 2	Column 3	Column 4
Block 0	Y/M/D	H/M/S	Data1	Data2	Data3	Data4	Data5
Block 1	Y/M/D	H/M/S	Data6	Data7	Data8	Data9	Data10
Block 2	Y/M/D	H/M/S	Data11	Data12	Data13	Data14	Data15
Block 3	Y/M/D	H/M/S	Data16	Data17	Data18	Data19	Data20
...	Y/M/D	H/M/S	Data21	Data22	Data23	Data24	Data25

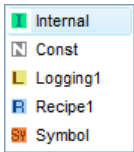
Reading direction	Explanation
Column	<p>Displays data of one column in graph along change of time. In case of [Col], [Block number] does not have meaning, it is OK to set [Word number].</p>  <p>In case of setting graph data as figure above, data is displayed in sequence of [Data2, Data7, Data12, Data17, Data22, ...] as time goes by because [Word number] is [1].</p>
Row(Block)	<p>Displays data of one block in graph. In case of [Row], [Word number] does not meaning, it is OK to set [Block number].</p>  <p>In case of setting graph data as figure above, data is displayed in sequence of [Data11, Data12, Data13, Data14, Data15, ...] as time goes by because [Block number] is [2].</p>
Word	<p>Displays data in graph by skipping with designated interval by setting interval.</p>  <p>In case of setting the interval as [2], data is displayed in sequence of [Data1, Data3, Data5, Data7, Data9, Data11, ...].</p>

33.5.4 Min./Max.

Sets Min./Max.of X axis of graph to display each data.



[Figure. Min./Max. setting]

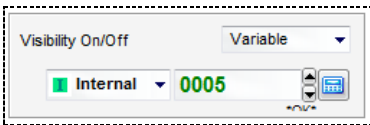


[Figure. Type of address]

Can set range of Y axis with [Internal] address, [Constant] and [Logging/recipe] data as figure above. If sets it as [Constant], range of Y axis gets fixed, if sets it as address, can control range of Y axis along data of address in fluid.

33.5.5 Viewing condition address

Enables graph to display each data to be displayed or not displayed along condition.



[Figure. Viewing condition address]


Viewing condition	Explanation
Always On	Enables the graph to be viewed always.
Variable	Enables each graph to be viewed or not viewed along status of conditional address. [Conditional address] can set [Internal] address only. If data of [Conditional address] is not data other than [0], makes graph viewed, if it is [0], makes it invisible.

33.5.6 Line setting

Sets property of graph line to display each data.



[Figure. Line setting]

Line setting	Explanation
Line Style	Selects shape of line from 4 types as figure below. <div></div>
Line Color	Sets color of line.
Line Width	Selects thickness of line out of 1~2 [Dot].

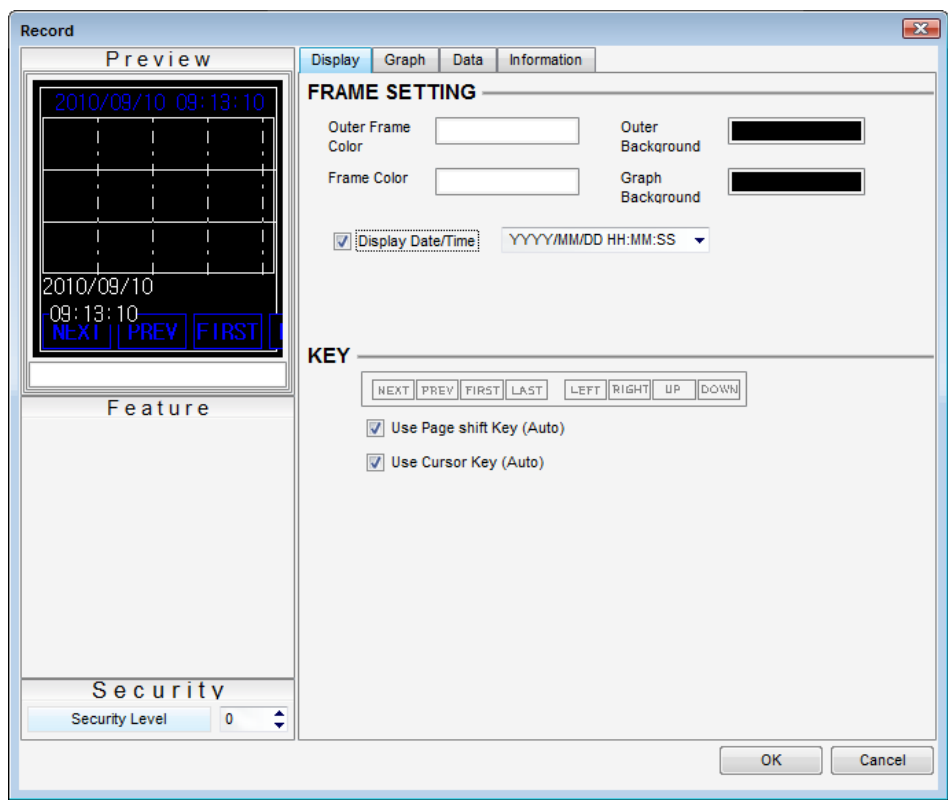
CHAPTER 34 Record Tag

CHAPTER 34 – Record Tag

34.1 Outline of Record Tag

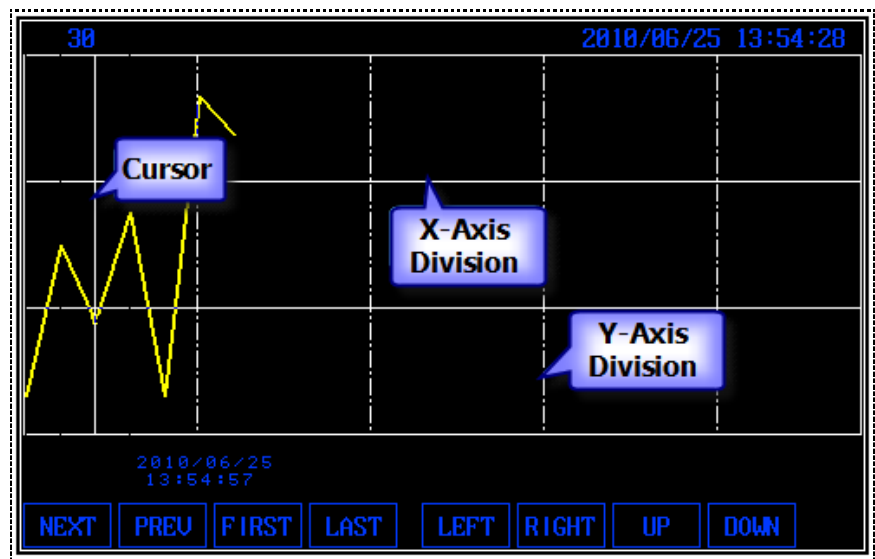
Record tag is the tag which displays logging or recipe data in graph.
It functions the same as Graph Ex, but it contains more functions that Graph Ex.
Can display multiple data in one graph such as color of line and thickness.

Property screen of Record tag.



[Figure. Property screen of Record tag]

Record tag graph under actual operation.



[Figure. Record tag of touch screen]

34.2 Property screen page composition of Record tag

Record tag consists of [Display], [Graph], [Data] and [Information] page.

Property page	Explanation
Display page	Page which sets design of graph. Sets shape of frame, color and background color.
Graph page	Page which sets property of graph. Sets display gap of graph, data type, X axis start address, cursor and magnification.
Data page	Page which sets data to display graph. Sets data to display, Max. and Min. out of logging/recipe.
Information page	Page which displays data of Graph Ex tag. It displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

34.3 Display page

Page which sets design of graph.

Sets frame, date/time display format and key.

The screenshot shows a software interface for configuring a 'Record tag'. At the top, there are four tabs: 'Display', 'Graph', 'Data', and 'Information'. The 'Display' tab is active and highlighted with a red box. Below the tabs, the 'FRAME SETTING' section is titled with a red underline. It contains four color selection controls: 'Outer Frame Color' (empty text box), 'Outer Background' (black color box), 'Frame Color' (empty text box), and 'Graph Background' (black color box). Below these is a checked checkbox for 'Display Date/Time' followed by a dropdown menu showing the format 'YYYY/MM/DD HH:MM:SS'. The 'KEY' section is also titled with a red underline and contains a row of eight buttons: 'NEXT', 'PREV', 'FIRST', 'LAST', 'LEFT', 'RIGHT', 'UP', and 'DOWN'. Below the buttons are two checked checkboxes: 'Use Page shift Key (Auto)' and 'Use Cursor Key (Auto)'.

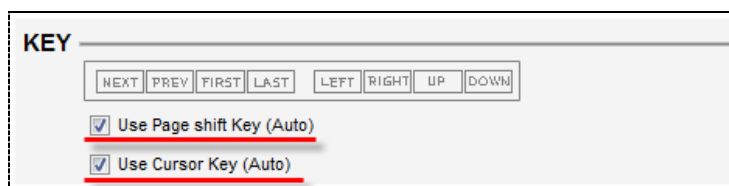
[Figure. Display page of Record tag]

34.3.1 FRAME SETTING

There are outside frame and inside frame in Record tag.

So, sets each frame color and background color.

Frame setting	Explanation
Outer Frame color	Sets frame color of outside frame.
Outside background	Sets background color of outside frame.
Frame color	Sets frame color of inside frame.
Graph background	Sets background color of inside frame.
Display Date/Time	If checks it, displays date/time of logging data of intersections of X axis grid and X axis bottom.



[Figure. Key setting]

There are [Page moving key] and [Cursor key] in key.

(1) Page moving key

[Page moving key] is the key which moves graph screen.

If checks it, 4 buttons are created at bottom.

Page moving key	Explanation
NEXT	Moves to next page.
PREV	Moves to previous page.
FIRST	Moves to first page.
LAST	Moves to last page.

Page moving is operated when graph screen is full of data.

Also, when [Page moving key using bit condition] is met in [Graph page], it is operated.

(2) Cursor key

[Cursor key] is the key which moves the cursor displayed in graph.

Cursor displays the meeting position with graph in vertical line against X axis.

If checks it, 4 buttons are created at bottom.

Page moving key	Explanation
LEFT	Moves cursor to left as wide as one data.
RIGHT	Moves cursor to right as wide as one data.
UP	When multiple graphs are displayed, there are multiple graphs which meet cursor. At this time, moves intersection which cursor displays with graph from below graph to upper graph.
DOWN	When multiple graphs are displayed, there are multiple graphs which meet cursor. At this time, moves intersection with graph from upper graph to below graph.

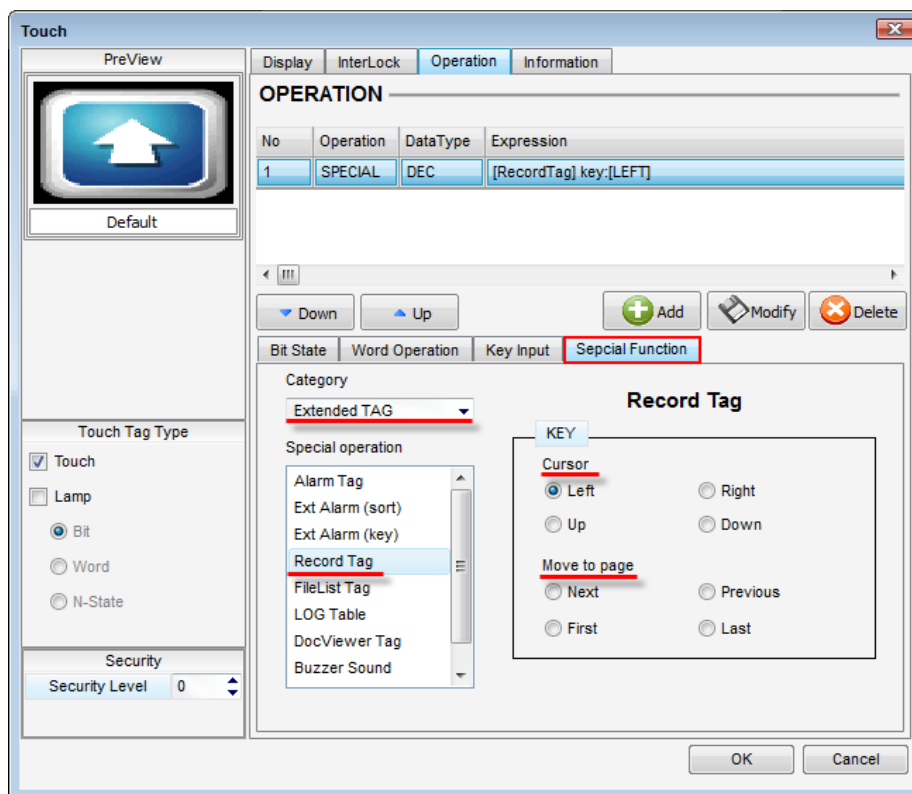
(3) Key Input using Touch tag

When wants to change design of key, or register it in the designated position separately, can register page moving key using Touch tag.

Sets it in [Special function] of [Operation] page of Touch tag.

If sets sorting with [Extended TAG] and selects special operation with [Record tag], cursor key of record key and page moving key are appeared.

Registers 8 keys in screen by designating each one according to requirement.



[Figure. Key Input using Touch tag]

34.4 Graph page

Page which sets property of graph.

Sets graph displaying interval, page moving key using bit condition, grid and cursor.

[Figure. Graph page of Record tag]

34.4.1 RECORD FEATURE

Sets graph displaying interval and page moving key using bit condition.

[Figure. Record feature]

Record feature	Explanation
No. of drawing division	Interval which displays one data in graph.
Value per a logging	Unit is dot (pixel).
Stop condition out of Auto shifting	<p>If graph is drawn to the end of screen, Record tag is moved to next screen and draws data. That is, reviews latest data automatically.</p> <p>In order to view data of previous page, moves page using [Page moving key]. At this time, if wants [Page moving key] to be operated, has to meet the set condition in [Page moving key using bit condition].</p> <p>The reason of having [Page moving key condition] is to enable page moving to be available by stopping operation of graph giving condition because it is supposed to review latest data during drawing graph and page does not move.</p>

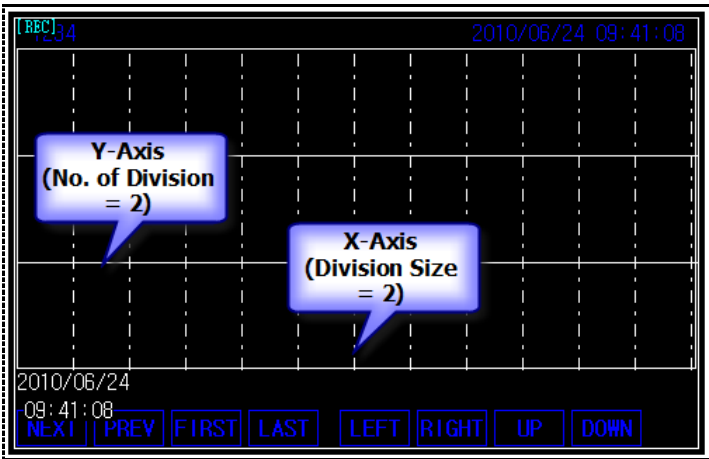
34.4.2 X/Y -AXIS SETTING

Displays grid in X axis and Y axis.

[Figure. Display X axis/Y axis grid]

Grid	Explanation
Use X axis	If checks it, horizontal line (grid) is displayed dividing X axis in graph.
Division size	Sets interval which displays grid. Displays grid by providing the gap as number of data input by [Division size]. Given that [Graph displaying interval] is the gap displaying one data, if [Graph displaying interval] is [20(dot)], and [Division size] is [2], grid becomes [20(Dot)] X[2] and displayed in every [40(Dot)].
Line Color	Sets color of grid line.
Line Type	<p>Sets shape of grid line. Selects it from 4 types of below figure.</p>
Line Width	Selects it as thickness of grid line from [1~2(Dot)].
Use Y axis	If checks it, displays horizontal line (grid) dividing X axis in graph.
No. of division	As number dividing X axis, if it is [2], 2 same grid line are displayed in Y axis.

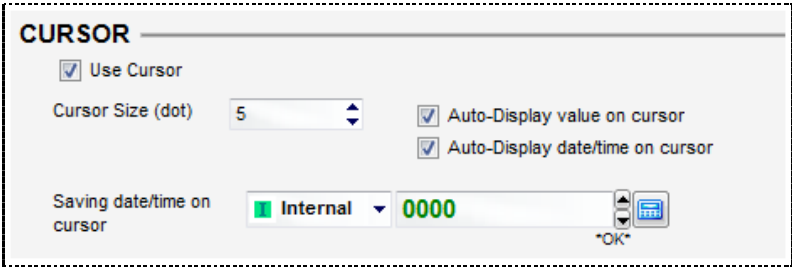
If sets grid in X axis and Y axis as figure above, it is displayed in Record tag as following.



[Figure. Record tag displaying grid]

34.4.3 CURSOR

Cursor is the vertical baseline displayed as right angle against X axis.
Can move left/right/up/down using [Cursor key], and display data of intersection with graph at top of Record tag.



[Figure. Cursor]

Cursor	Explanation
Use cursor	If checks it, can use cursor.
Cursor Size(dot)	Intersection of cursor with graph is displays in square dot. Size of cursor is size of square dot. Inputs by dot (pixel).
Auto-Display value on cursor	If checks it, data (value of Y axis) of intersection of cursor with graph is made outlay and displayed at left top of graph.
Auto-Display date/time on cursor	If checks it, data (value of X axis) of intersection of cursor with graph is made outlay and displayed at right top of graph.
saving date/time on cursor	Can save date and time data of cursor position by designating [Internal] address.

34.5 Data page

Page which sets data to display in graph.

Sets and registers detailed property of data to display out of logging/recipe data.

[Figure. Data page of Record tag]

34.5.1 Data type/size




Sets type of data and size to display in graph.

Data	Explanation
Data Type	<p>Selects one out of [DEC], [UDEC] and [BCD].</p> <div> <p>DEC unsigned DEC BCD</p> </div> <p>[DEC] is decimal. [HEX] is hexadecimal. [BCD] is numeral system which uses one digit of decimal combining binary number 4 digits. Though it is actually hexadecimal, it is data which is used just like decimal because it does not show data containing A~F. [FLOAT] is data which can use decimal point, and [BIN] is binary number.</p>
Data Size	Selects one out of [16bitg] or [32bit].

34.5.2 Add data to display in graph

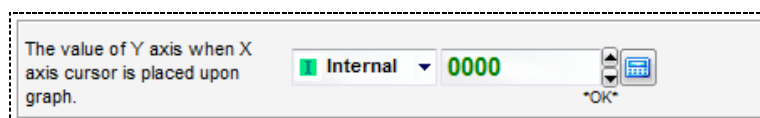
There is a list of data to display in graph at top in data page, and can set property of each graph data at bottom.

Creates [Graph data] by pressing [Create] button, saves the set contents by pressing [Save] button after setting detailed property of graph data at bottom.

Property	Explanation
Description	Explanation on graph data.
 New	Creates new graph data.
 Save	Saves detailed property of set graph data.
 Delete	Deletes the registered graph data.

34.5.3 Value of Y axis overlapped with X axis cursor

[Value of Y axis(internal address) overlapped with X axis cursor] enables the graph of intersection with X axis cursor, that is, value of Y axis to be saved in designated (internal) address.

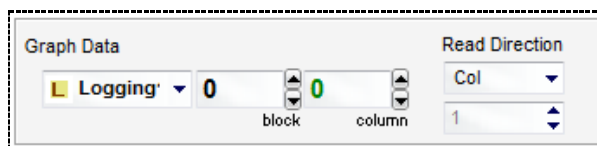


[Figure. Value of Y axis(internal address) overlapped with X axis cursor]

34.5.4 Graph data/reading direction

Sets graph data to display.

Sets graph data along reading direction.



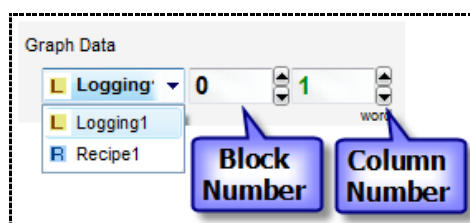
[Figure. Graph data/reading direction]

(1) Graph data

Graph data selects logging/recipe data to display in graphs out of previously-set logging/recipe data. Then, inputs [Block number] and [Word number], selects data to display out of selected logging/recipe data.

[Block] means data when logging data is saved one. Number starts from [0] block.

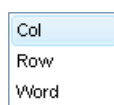
[Word(column)] means number of data which is saved when logging. Number starts from [0] word.



[Figure. Graph data]

(2) Reading direction

Reading direction selects one out of [Col], [Row] and [Word].





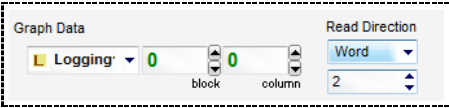
[Figure. Reading direction]

Logging data is saved as below chart.

Supposes logging setting which number of column(logging subject) is 5.

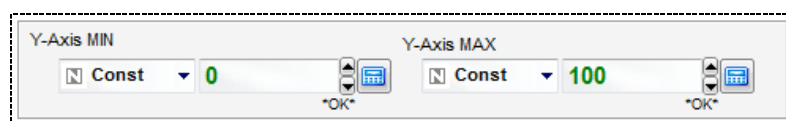
If explains [Reading address] based on this chart, it is as followings.

	Date	Time	Column 0	Column 1	Column 2	Column 3	Column 4
Block 0	Y/M/D	H/M/S	Data1	Data2	Data3	Data4	Data5
Block 1	Y/M/D	H/M/S	Data6	Data7	Data8	Data9	Data10
Block 2	Y/M/D	H/M/S	Data11	Data12	Data13	Data14	Data15
Block 3	Y/M/D	H/M/S	Data16	Data17	Data18	Data19	Data20
...	Y/M/D	H/M/S	Data21	Data22	Data23	Data24	Data25

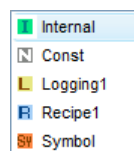
Reading direction	Explanation
Column	<p>Displays data of one column in graph along change of time. In case of [Col], [Block number] does not have meaning, it is OK to set [Word number].</p>  <p>In case of setting graph data as figure above, data is displayed in sequence of [Data2, Data7, Data12, Data17, Data22, ...] as time goes by because [Word number] is [1].</p>
Row(Block)	<p>Displays data of one block in graph. In case of [Row], [Word number] does not meaning, it is OK to set [Block number].</p>  <p>In case of setting graph data as figure above, data is displayed in sequence of [Data11, Data12, Data13, Data14, Data15, ...] as time goes by because [Block number] is [2].</p>
Word	<p>Displays data in graph by skipping with designated interval by setting interval.</p>  <p>In case of setting the interval as [2], data is displayed in sequence of [Data1, Data3, Data5, Data7, Data9, Data11, ...].</p>

34.5.5 Min./Max.

Sets Min./Max. of X axis of graph to display each data.



[Figure. Min./Max. setting]

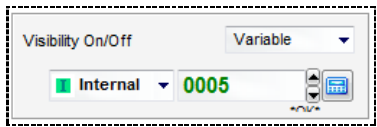


[Figure. Type of address]

Can set range of Y axis with [Internal] address, [Constant] and [Logging/recipe] data as figure above. If sets it as [Constant], range of Y axis gets fixed, if sets it as address, can control range of Y axis along data of address in fluid.

34.5.6 Viewing condition address

Enables graph to display each data to be displayed or not displayed along condition.



[Figure. Viewing condition address]

Viewing condition	Explanation
Always On	Enables the graph to be viewed always.
Variable	Enables each graph to be viewed or not viewed along status of conditional address. [Conditional address] can set [Internal] address only. If data of [Conditional address] is not data other than [0], makes graph viewed, if it is [0], makes it invisible.

34.5.7 Line setting

Sets property of graph line to display each data.



[Figure. Line setting]

Line setting	Explanation
Line Style	Selects shape of line from 4 types as figure below. <div></div>
Line Color	Sets color of line.
Line Width	Selects thickness of line out of 1~2 [Dot].

CHAPTER 35 X/Y Chart A Tag

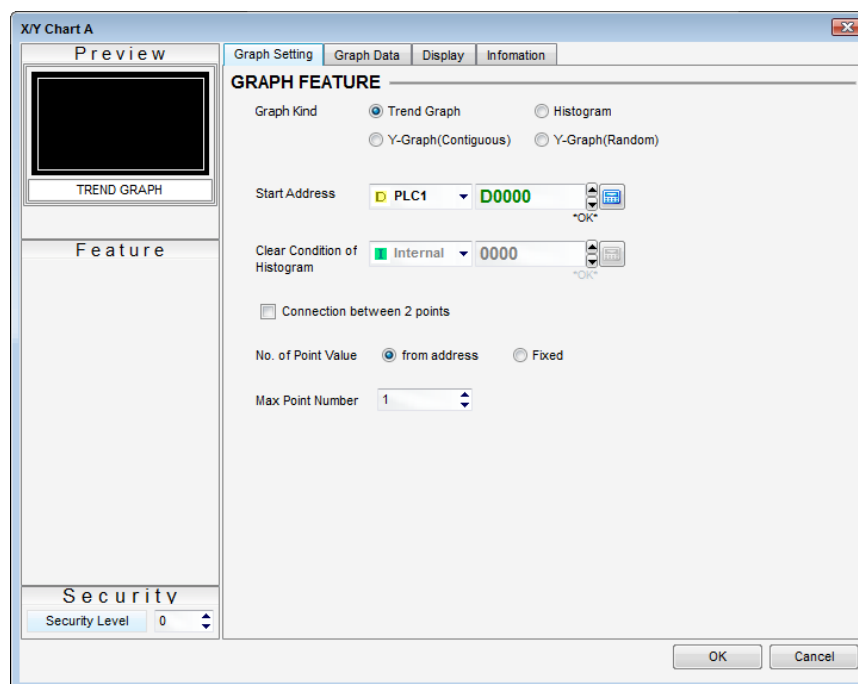
35.1 Outline of X/Y Chart A Tag

X/Y Chart A tag is the tag which displays change of value by showing intersection of two values with dot two-dimensional graph after reading word value against X axis and word value against Y axis.

Can express change of data with Linear Graph, distribution chart, sequence Y-graph and separation Y-Graph.

Sequence word address is required to express graph.

If uses word address from [D0000] as below figure, '[D0000]/[D0001](X0/Y0), [D0002]/[D0003](X1/Y1), [D0004]/[D0005](X2/Y2)...' is used as address because 2 addresses are needed to express one dot(X/Y). If uses [Number of dots] of below figure as address value, first address becomes value setting number of dots, so, it is changed to '[D0000](Number of dots), [D0001]/[D0002](X0/Y0), [D0003]/[D0004](X1/Y1), [D0005]/[D0006](X2/Y2)....'. But Y-graph uses one address per dot.



[Figure. Property screen of X/Y Chart A tag]

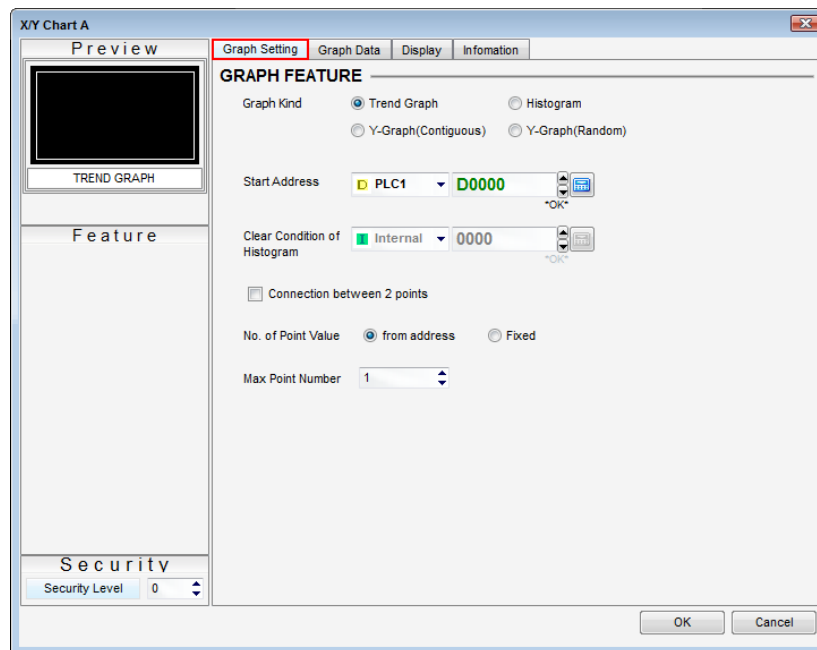
35.2 Property screen page composition of X/Y Chart A tag

Property screen of X/Y Chart A tag consists of [Graph setting], [Graph data], [Display] and [Information] pages.

Property page	Explanation
Graph Setting page	Page which sets type of graph, start address of word address to use and number of dots to display.
Graph data page	Page which sets type and number of graph data to display in screen and graph display about Min.& Max.of each data.
Display page	Page which sets whether displays frame or not, color and condition to update graph.
Information page	Page which displays data about X/Y Chart A graph tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

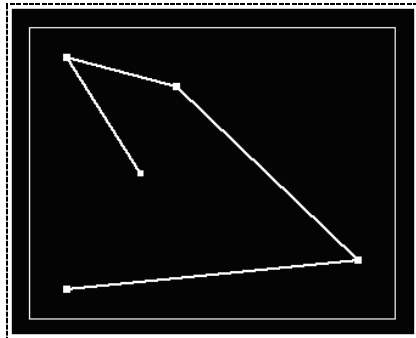
35.3 Graph Setting page

Page which type of graph, start address of word address to use and number of dots to display. Number of addresses gets different along number of dots to display in graph.

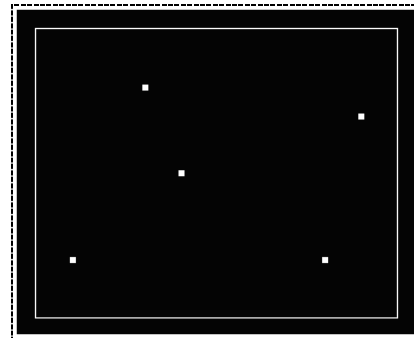


[Figure. Graph setting page]

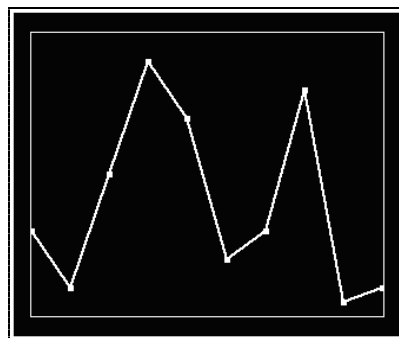
Graph Setting		Explanation
Type of graph	Trend Graph	Displays intersection of word address value against X axis and word address value against Y axis, and expresses data by connecting dot and dot with line.
	Histogram	Displays intersection of word address value against X axis and word address value against Y axis with dot. Dots which displayed past data values are remained in screen of distribution chart. If [Distribution clear condition] is operated, erases operating dots left in screen.
	Y-graph (Contiguous)	Keeps displaying change of data enumerating sequence data of Y axis.
	Y-graph (Random)	Keeps displaying change of data enumerating no-sequence data of Y axis. Can set address separately in [Graph data] page.
Start address		Inputs start address of sequential word address to read value.
Clear condition of Histogram		Inputs word address to be used as condition to erase dots which is displayed in [Distribution chart]. If word address is the value other than 0, displays dot against new data value keeping erase dots in distribution chart.
Connect between 2 points		Sets whether dots displayed in [Linear Graph] are connected or not.
No.of Point Value	From address	Uses word address value input in [Start address] as number of dots to use in graph.
	Fixed	Sets number of dots to use in graph, and use it constantly.
Max Point Number		Sets maximum number of dots to display in graph. If uses it in [Fix] at [Number of dots], it is marked as [Number].



[Figure. Linear Graph]



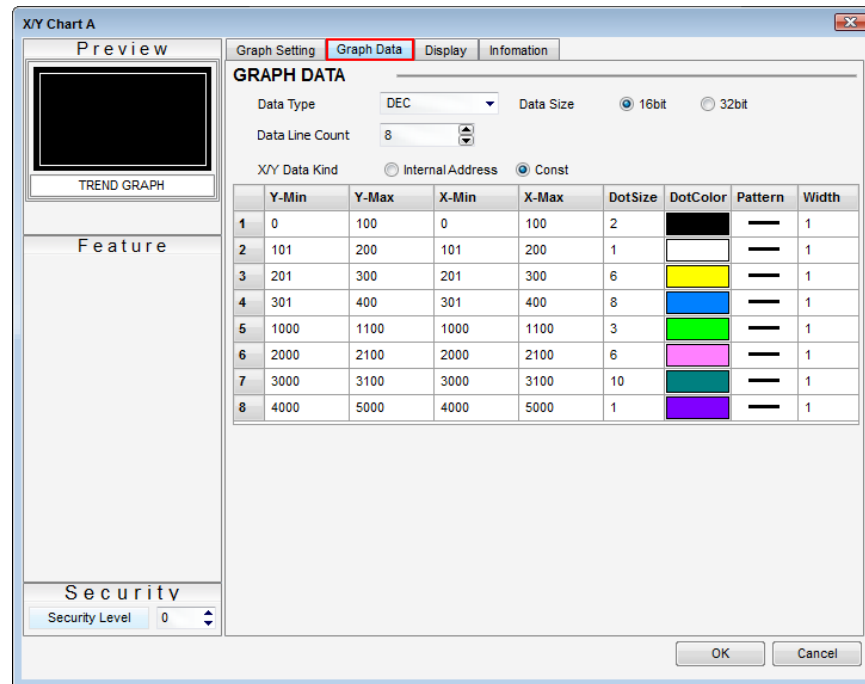
[Figure. Distribution chart]



[Figure. Y-graph]


35.4 Graph Data page

Page which sets display of graph to be displayed differently by setting data value of graph in screen per section.

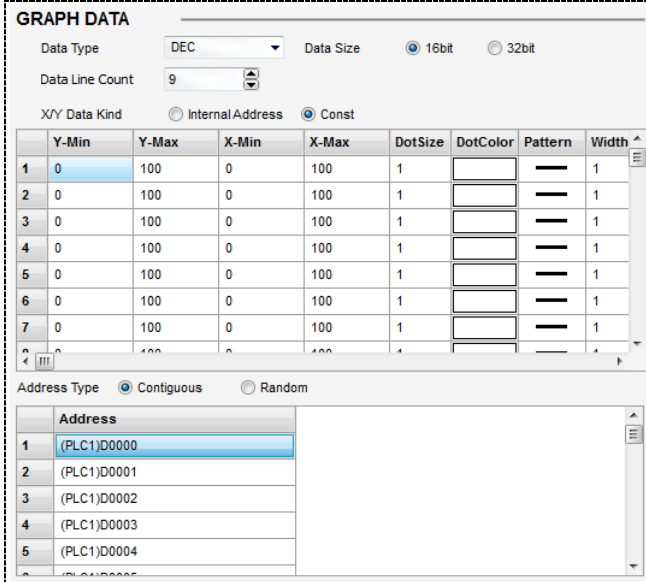


[Figure. Graph data page]

Part		Explanation
Data Type		<p>Selects type of data to use from below list.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> DEC UDEC BCD FLOAT </div> <p>[DEC] is decimal. [HEX] is hexadecimal. [BCD] is numeral system which uses one digit of decimal combining binary number 4 digits. Though it is actually hexadecimal, it is data which is used just like decimal because it does not show data containing A~F. [FLOAT] is data which can use decimal point, and [BIN] is binary number.</p>
Data Size		<p>Selects one out of 16bit or 32bit.</p> <p>32bit is used when bigger value than 16bit is used.</p>
Data Line Count		Sets setting number of value section to use.
X/Y Data Kind	Internal address	Uses it by setting Min. value and Max. value as internal address in fluid.
	const	Uses it by fixing Min. value and Max. value as constant in fluid.
Y-Min.		Inputs Min. of Y axis word address of the section.
Y-Max.		Inputs Max. of Y axis word address of the section.
X-Min.		Inputs Min. of X axis word address of the section.

X-Max.	Inputs Min.of X axis word address of the section.
Dot Size	Sets size of dot displayed in screen.
Dot Color	Sets color of dot displayed in screen.
Pattern	Selects pattern of line displayed in screen from below list. 
Line Width	Sets thickness of line (1~2dot) displayed in screen.

If sets [Type of graph] as [Y-graph(separation)] in [Graph setting], the list which inputs [Type of address] and address as below figure.



GRAPH DATA

Data Type: DEC Data Size: ☒ 16bit ☐ 32bit

Data Line Count: 9

X/Y Data Kind: ☐ Internal Address ☒ Const

	Y-Min	Y-Max	X-Min	X-Max	DotSize	DotColor	Pattern	Width
1	0	100	0	100	1		—	1
2	0	100	0	100	1		—	1
3	0	100	0	100	1		—	1
4	0	100	0	100	1		—	1
5	0	100	0	100	1		—	1
6	0	100	0	100	1		—	1
7	0	100	0	100	1		—	1
8	0	100	0	100	1		—	1
9	0	100	0	100	1		—	1

Address Type: ☒ Contiguous ☐ Random

Address
1 (PLC1)D0000
2 (PLC1)D0001
3 (PLC1)D0002
4 (PLC1)D0003
5 (PLC1)D0004
6 (PLC1)D0005
7 (PLC1)D0006
8 (PLC1)D0007
9 (PLC1)D0008

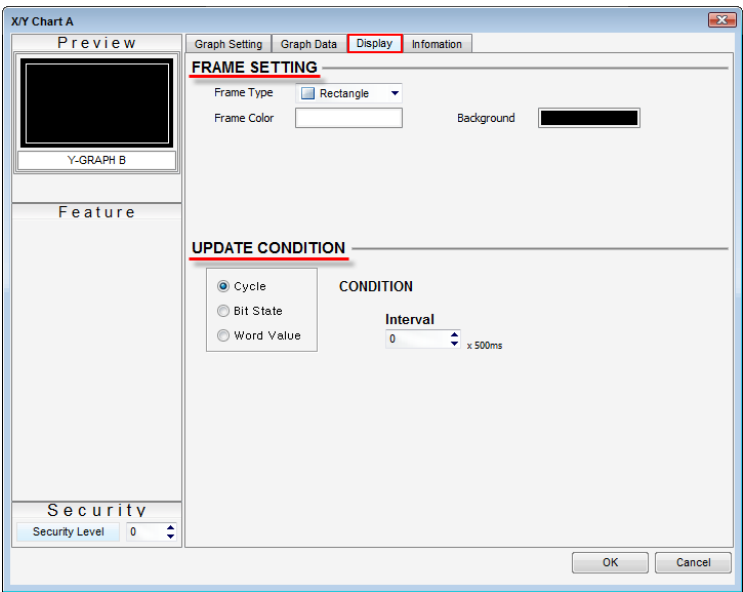
[Figure. Type of address]

If selects [Separation], can use no-sequential address.

Sets address by double-clicking each item with mouse.

35.5 Display page

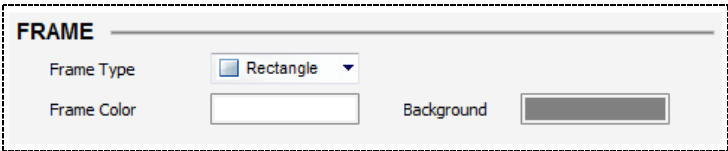
Page which sets whether display frame or not, color and condition to update graph.



[Figure. Display page]

35.5.1 FRAME

Sets frame of graph and background color.



[Figure. Frame setting]

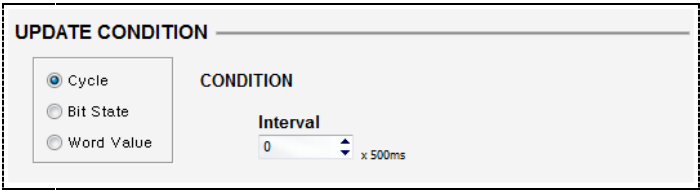
Frame setting	Explanation
Frame Type	Selects if displays frame or not from below chart. <div><div>No Frame</div><div>Rectangle</div></div>
Frame color	Sets frame color.
Background	Sets background color in graph.

35.5.2 UPDATE CONDITION

Sets the condition which updates graph data of X/Y chart displayed in screen.

(1) Cycle

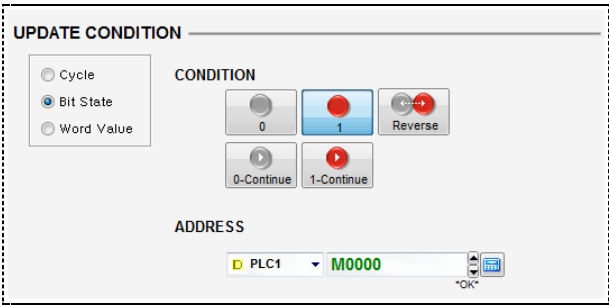
Updates it time interval set in interval. Interval is set by 500mx(0.5 second), if sets [0], proceeding speed is very high because it updates data with interval of scanning time(each scan) of touch screen.



[Figure. Per interval]

(2) Bit State

Updates data along status of bit address designated by user.



[Figure. Bit State]

Bit state		Detailed explanation
Address		Sets bit address to use as condition.
Condition	0	When set bit address becomes OFF, updates it once.
	1	When set bit address becomes ON, updates it once.
	reversion	Whenever set bit address gets reversed, updates it once.
	0-Continue	While set bit address is OFF, updates per scan.
	1-Continue	While set bit address is ON, updates per scan.

(3) Word Value

When data of word address is changed, if changed data satisfies the range of Min.value and Max.value, it updates data.

UPDATE CONDITION

Cycle

Bit State

Word Value

CONDITION

Min

0

~

Max

32767

ADDRESS

PLC1

D0000

OK

[Figure. Word value]

Word value		Detailed explanation
Condition	Min.	Inputs Min.value of word address to be used as condition.
	Max.	Inputs Max.value of word address to be used as condition.
Address		Sets word address.

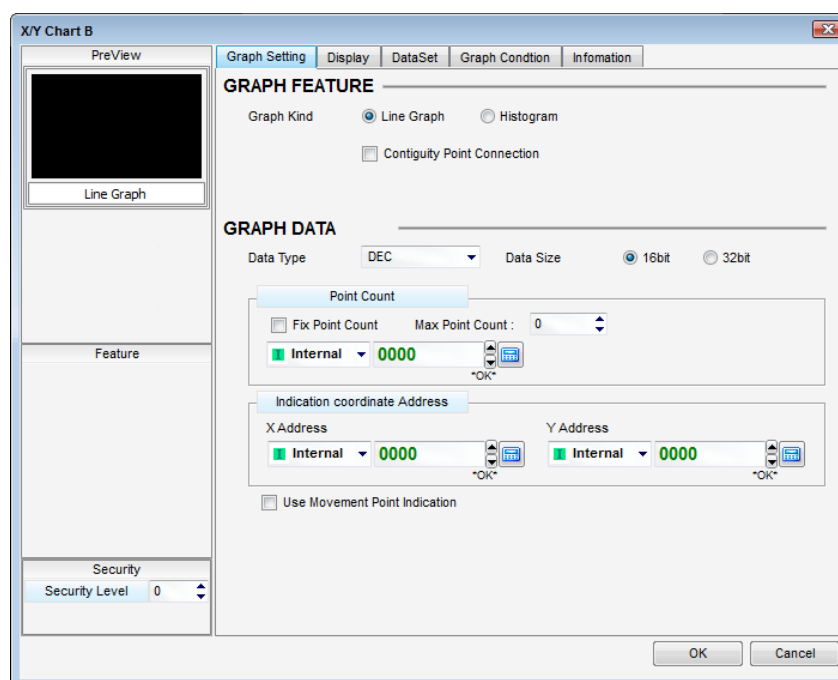
CHAPTER 36 X/Y Chart B Tag

36.1 Outline of X/Y Chart B Tag

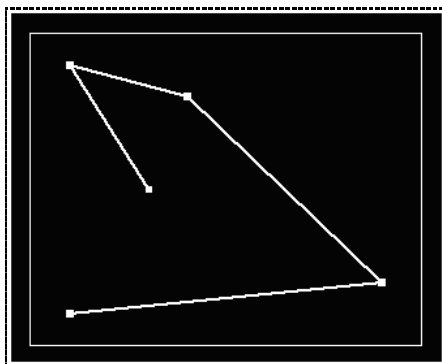
X/Y Chart B tag is the tag which works the same as X/Y Chart A tag, but has more functions.

Displays change of value by reading word value against X axis and word value against Y axis, and showing intersection of the two values with dot in two-dimensional graph.

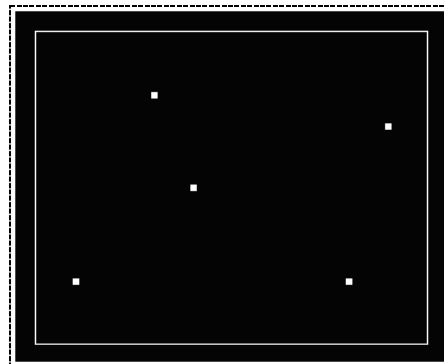
In X/Y Chart A tag, inputs one word address and uses the sequential address starting from the address, in X/Y Chart B tag, can sets the address designating [Number of dots], X coordinates start address and Y coordinates start address separately as blow figure.



[Figure. Property screen of X/Y Chart B tag]



[Figure. Line graph]



[Figure. Distribution chart]

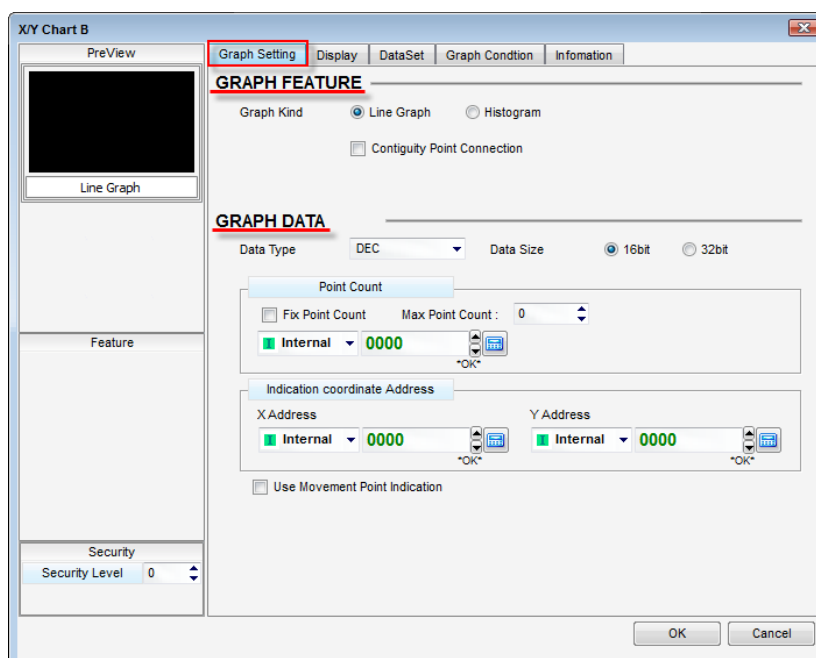
36.2 Page composition of X/Y Chart B tag property screen

Property screen of X/Y Chart A tag consists of [Graph setting], [Display], [Graph data], [Graph Condition] and [Information] pages.

Property page	Explanation
Graph setting page	Page which sets type of graph, start address of word address to use and number of dots to display.
Display page	Page which sets whether displays frame or not, color and condition to update graph.
Graph data page	Page which sets type and number of graph data to display in screen and graph display about Min.& Max.of each data.
Graph Condition	Page which sets condition to display dots of graph with registered images.
Information page	Page which displays data about X/Y Chart A graph tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

36.3 Graph setting page

Page which type of graph, start address of word address to use and number of dots to display. Number of addresses gets different along number of dots to display in graph.

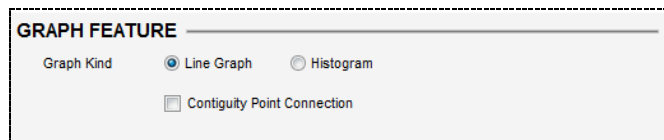


[Figure. Graph setting page]

(1) Line Graph

Express data by displaying intersection of word address value of X axis and word address value of Y axis in screen and connecting dot and dot with line.

If uses [Connect near dots], it is displays with dots only unless connecting dot and dot with line.



[Figure. Line graph]

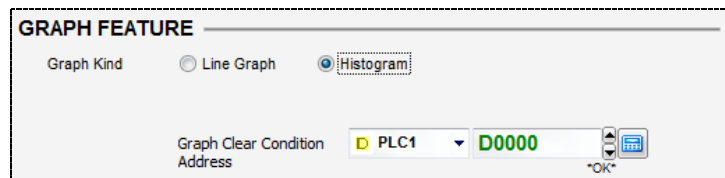
(2) Histogram

Displays intersection of word address value of X axis and word address value of Y axis in screen and connecting dot and dot with line.

Dots which displayed past data values are remained in screen of distribution chart.

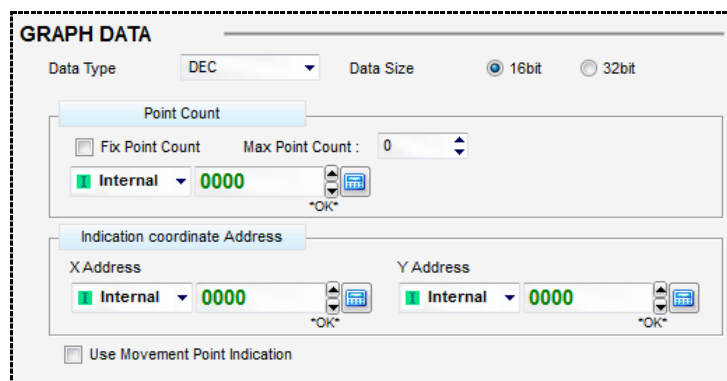
If [Distribution clear condition] is operated, erases operating dots left in screen.

If word address data of [Distribution clear condition] is value other than [0], displays new data value keeping erase dots in distribution chart.

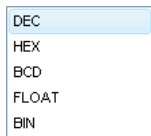
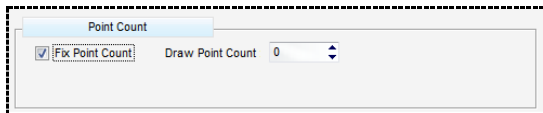
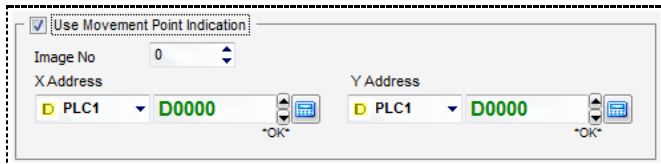


[Figure. Distribution chart]

36.3.2 GRAPH DATA

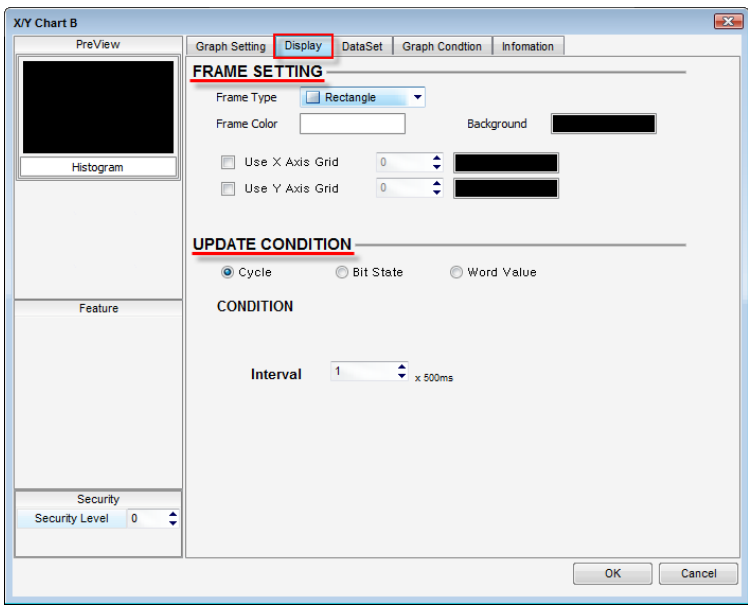


[Figure. Graph data setting]

Graph data setting		Explanation
Data Type		<p>Selects data type from the list below.</p>  <p>[DEC] is decimal. [HEX] is hexadecimal. [BCD] is numeral system which uses one digit of decimal combining binary number 4 digits. Though it is actually hexadecimal, it is data which is used just like decimal because it does not show data containing A~F. [FLOAT] is data which can use decimal point, and [BIN] is binary number.</p>
Data Size		<p>Selects one out of 16bit or 32bit.</p> <p>32bit is used when uses bigger than 16 bit.</p>
Point Count	Fix Point Count	<p>Uses number of dots to use in graph by fixing.</p> <p>If does not set it by fixing, number of dots is changed along values word address. If checks it, it is changed as below figure.</p> 
	Max. Point Count	Input Max. No. of dots to used.
	Input address	Sets word address to use as number of dots.
Indication	X-address	Inputs start address of word address to use as X coordinates.
Coordinate address	Y-address	Inputs start address of word address to use as Y coordinates.
Use Movement Point Indication		<p>Used when displays image in graph screen separately from X/Y coordinates. Used when emphasizes dot of specific coordinates.</p> <p>If checks it, it is changed as below figure.</p> 
Image No.		Inputs number of image registered in [Image list].
X-address		Inputs word address to read value of X coordinates to be used to display moving point.
Y-address		Inputs word address to read value of Y coordinates to be used to display moving point.

36.4 Display page

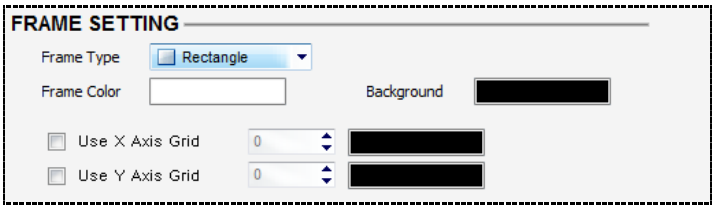
Page which sets whether display frame or not, color and condition to update graph.



[Figure. Display page]

36.4.1 FRAME SETTING

Sets frame of graph and background color.



[Figure. Frame setting]

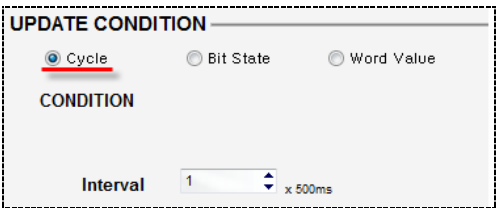
Frame setting	Explanation
Frame Type	Selects if displays frame or not from below chart. <div><input type="checkbox"/> No Frame <input checked="" type="checkbox"/> Rectangle</div>
Frame color	Sets frame color.
Background	Sets background color in graph.
Use X Axis Grid	Sets number and grid color of X axis.
Use Y Axis Grid	Sets number and grid color of Y axis.

36.4.2 UPDATE CONDITION

Sets the condition which updates graph data of X/Y chart displayed in screen.

(1) Cycle

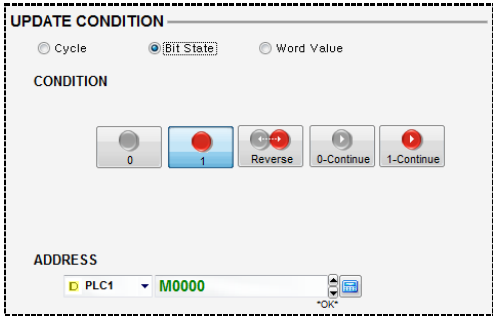
Updates it time interval set in interval. Interval is set by 500mx(0.5 second), if sets [0], proceeding speed is very high because it updates data with interval of scanning time(each scan) of touch screen.



[Figure. Cycle]

(2) Bit State

Updates data along status of bit address designated by user.

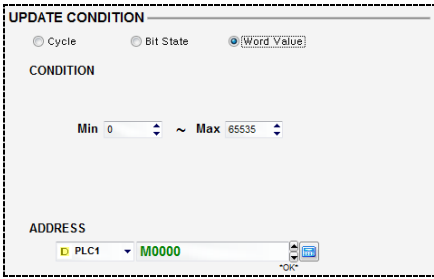


[Figure. Bit State]

Bit state		Detailed explanation
Address		Sets bit address to use as condition.
Condition	0	When set bit address becomes OFF, updates it once.
	1	When set bit address becomes ON, updates it once.
	Reversion	Whenever set bit address gets reversed, updates it once.
	0-Continue	While set bit address is OFF, updates per scan.
	1-Continue	While set bit address is ON, updates per scan.

(3) Word Value

When data of word address is changed, if changed data satisfies the range of Min.value and Max.value, it updates data.

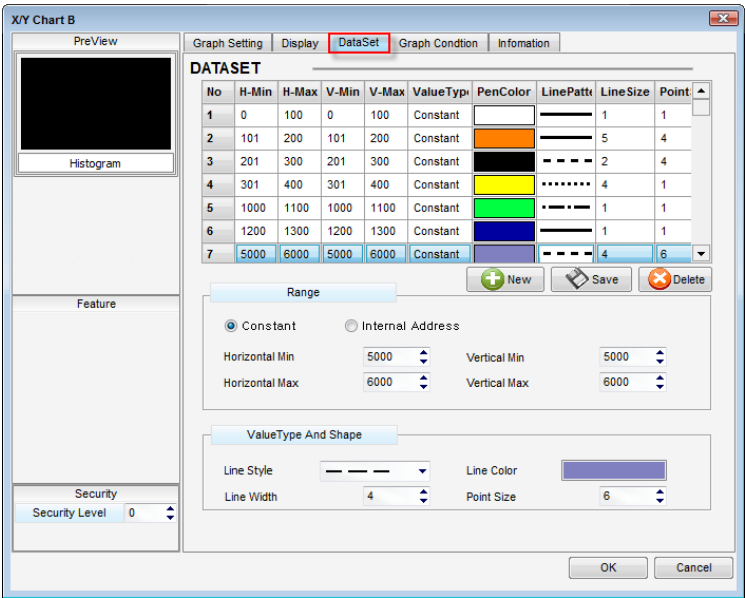


[Figure. Word value]

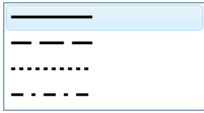
Word value		Detailed explanation
Condition	Min.	Inputs Min.value of word address to be used as condition.
	Max.	Inputs Max.value of word address to be used as condition.
Address		Sets word address.

36.5 DataSet page

Page which registers graph to display in screen, and sets Min./Max. of each graph and shape of graph.


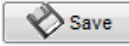



[Figure. DataSet page]







Data set		Explanation
Range	Constant	Fixed input Min. and Max. as constant value, then uses it.
	Internal address	Sets input Min. and Max. as internal address, then uses it in fluid.
	Horizontal Min.	Inputs Min. value of X axis section.
	Horizontal Max.	Inputs Max. value of Y axis section.
	Vertical Min.	Inputs Min. value of Y axis section.
	Vertical Max.	Inputs Max. value of Y axis section.
Value type and shape	Line Style	Selects shape of line displayed from below list. 
	Line Color	Sets color of line displayed in screen.
	Line Width	Sets thickness of line displayed in screen.
	Point Size	Sets thickness of line displayed in screen.




Can registers maximum 21 of data value section in one X/Y Chart B tag.

Uses [Create/save/delete] buttons to register graph.

Button	Explanation
 New	Registers new dataset.
 Save	Saves set contents in selected graph list.
 Delete	Deletes selected dataset.

If presses  button, graph is registered as below figure.

No	H-Min	H-Max	V-Min	V-Max	ValueTyp	PenColor	LinePatt	LineSize	PointSize
1	0	100	0	100	Constant			1	1
2	0	100	0	100	Constant			1	1
3	0	100	0	100	Constant			1	1
4	0	100	0	100	Constant			1	1
5	0	100	0	100	Constant			1	1
6	0	100	0	100	Constant			1	1

[Figure. Data section of newly-registered data section]

Creates number of graphs to display, changes setting of the graph by selecting the items with mouse.

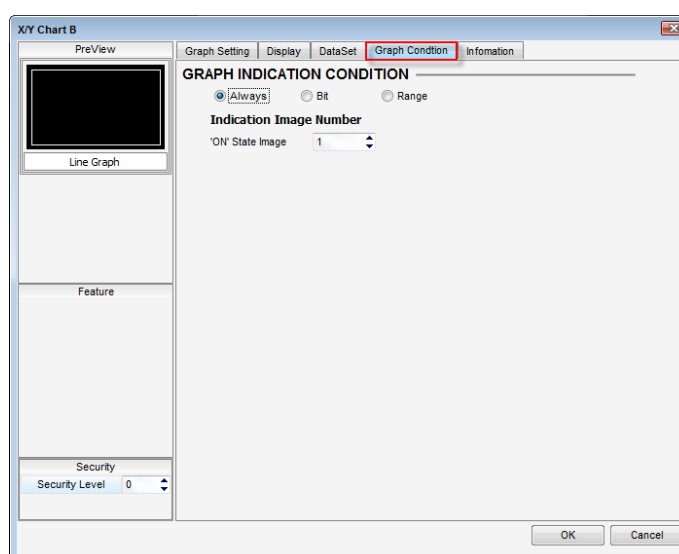
Saves changed setting of contents by pressing  button.

No	H-Min	H-Max	V-Min	V-Max	Value Type	Pen Color	Line Patten	Line Size	Point
1	0	100	0	100	Constant			1	1
2	101	200	101	200	Constant			4	2
3	201	300	201	300	Constant			3	3
4	301	400	301	400	Constant			4	3
5	1000	1100	1000	1100	Constant			2	1
6	1200	1300	1200	1300	Constant			2	2
7	5000	6000	5000	6000	Constant			4	3

[Figure. Data section saved setting]

36.6 Graph condition page

Page which sets condition to display dots of graph with registered images.

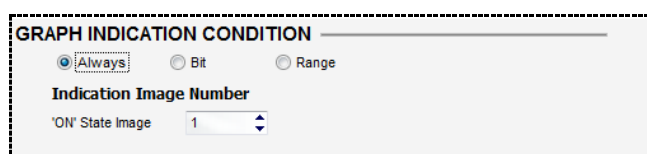


[Figure. Graph condition page]

(1) Always

Always displays dots displayed in graph screen with images.

Inputs number of images registered in [Image list] of [Display image number].



[Figure. Always]

(2) Bit

Displays dots displayed in graph screen along condition of bit address.

Inputs image number when bit address is ON status and image number when it is OFF status.

[Figure. Bit]

(3) Range

Displays dots with different image along data section of word address.

No	ImageNo	Min	Max
1	0	1	100
2	0	101	200
3	0	201	300
4	0	301	400
5	0	401	500
6	0	501	600
7	0	601	700
8	0	701	800
Def	0	Other Range	Other Range

[Figure. Range]

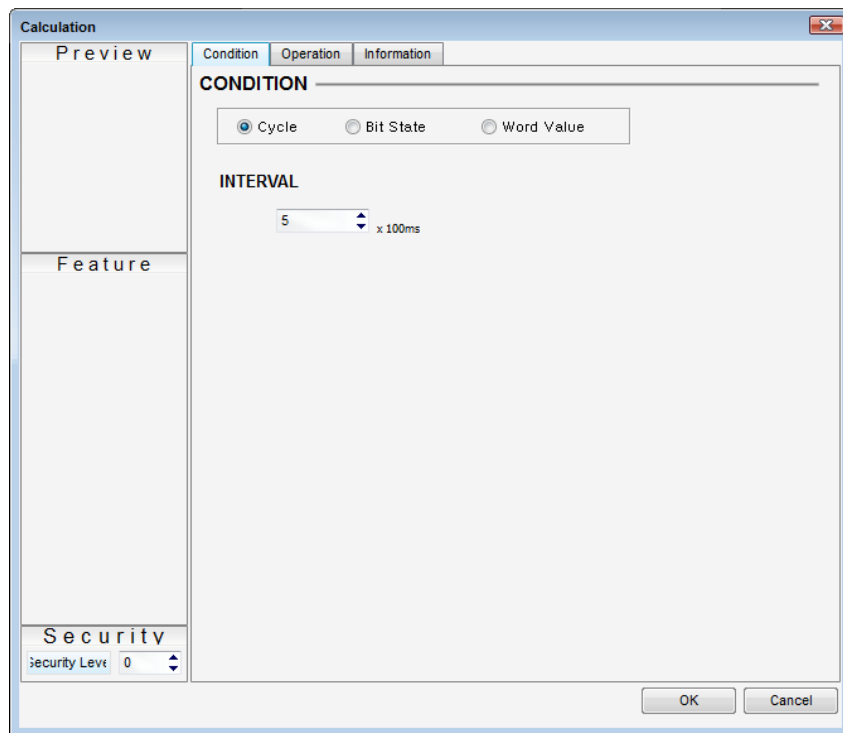
Range	Explanation
Condition address	Sets word address.
Range Count	Inputs number of section to use.
No.	Sequential number of registered section.
Image No	Inputs image number registered in [Image list].
Max.	Sets Max. value of word value to use in the section.
Min.	Sets Min. value of word value to use in the section.

CHAPTER 37 Calculation Tag

CHAPTER 37 – Calculation Tag

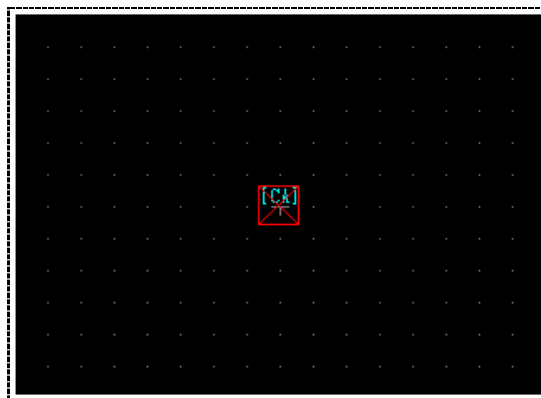
37.1 Outline of Calculation Tag

Executes bit operation, word operation, Key Input and special functions along operating condition.



[Figure. Property screen of Calculation tag]

Calculation tag registered in screen. It is OK to place Calculation tag in any position of edit screen, it is not displayed in screen if transmitting it to touch screen.



[Figure. Calculation tag registered in edit screen]

37.2 Property screen page composition of Calculation tag

Calculation tag consists of [Operation condition], [Operation] and [Information] pages.

Property page	Explanation
Operating condition page	Page which sets condition to operate the Calculation tag. Sets condition of per interval, bit condition and word value as condition.
Operation page	Sets the operation when satisfies condition of Calculation tag. Registers bit operation, word operation, Key Input and special function.
Information page	Page which sets data of Calculation tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

37.3 Condition page

Sets condition to operate the Calculation tag.

[Figure. Operating condition page]

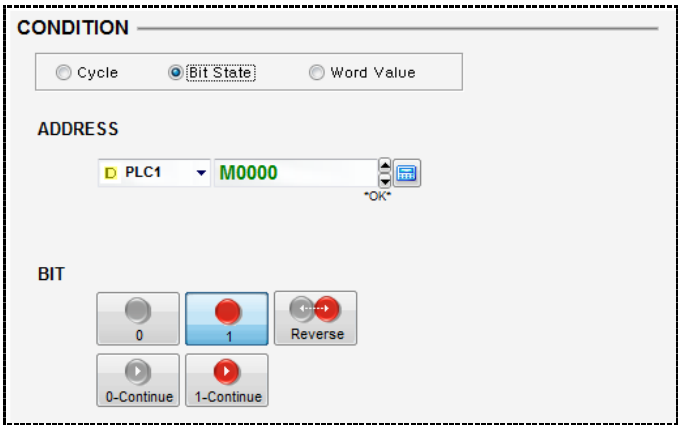
37.3.1 Cycle

Executes the operation for each time interval.

Unit of time interval is 100ms(0.1 second), if sets [0]x100ms, its speed is very high because it operates by interval of scanning time of touch screen.

37.3.2 Bit State

Executes the operation along status of bit address.

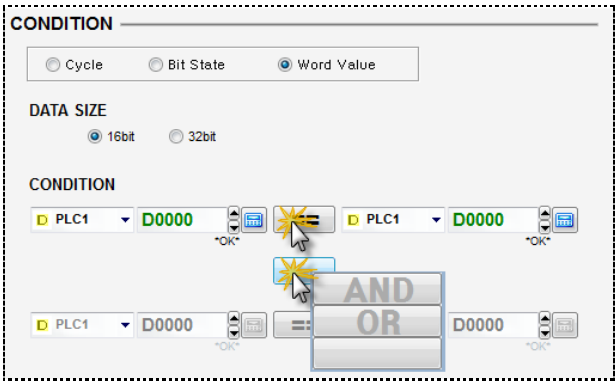


[Figure. Operating along bit state]

Bit state		Detailed explanation
Address		Sets bit address to use as condition.
Bit	0	When set bit address becomes OFF, updates it once.
	1	When set bit address becomes ON, updates it once.
	Reversion	Whenever set bit address gets reversed, updates it once.
	0-Continue	While set bit address is OFF, updates per scan.
	1-Continue	While set bit address is ON, updates per scan.

37.3.3 Word Value

Sets the operation when comparison operation is TRUE.



[Figure. Operates along word value]

First, sets size of data out of 16bit/32bit.


Inputs word address to use in the first item, and inputs other word address or constant to compare with the first item in the second item.

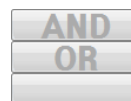
Selects comparison operation by pressing .



[Figure. Comparison operation]

Operation	Explanation
>	Value is bigger.
>=	Values are the same or bigger
=	Values are the same.
<	Value is smaller.
<=	Value is the smaller or the same.
!=	Value is not the same.
&	AND operation
!	OR operation
^	XOR operation

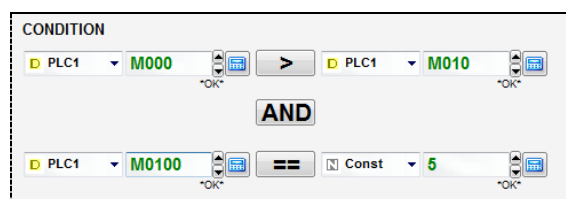
In case of using two operations, If presses  button and selects the operation out of [AND, OR], following operation gets activated as following.



[Figure. Operation]

Operation	Explanation
AND	If two operations are satisfied, it operates.
OR	If satisfies one out of two operations, it works. .
	Does not use operation.

For example, If sets it as below, word address [M0000] is bigger than [M0010] and value of [M0100] is [5], Calculation tag works because two operations are all TRUE(AND).



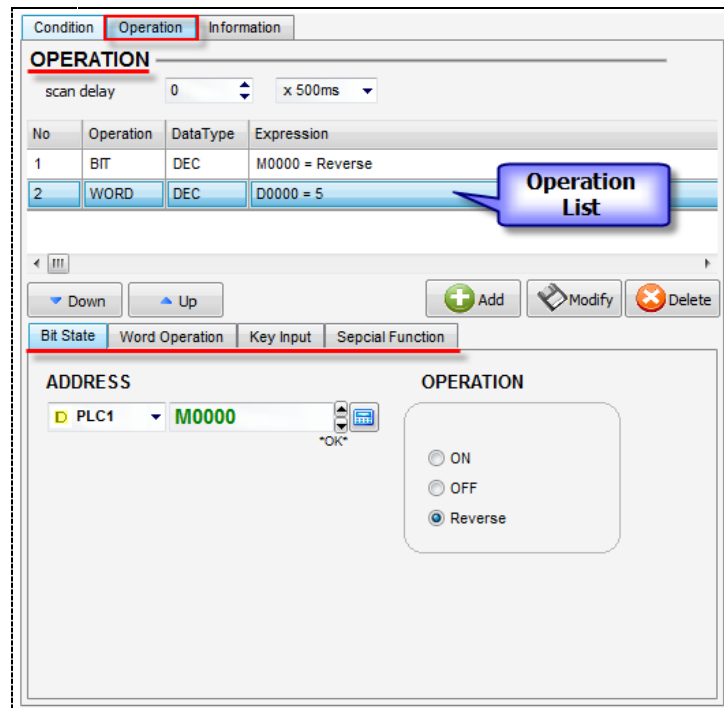
[Figure. Word value condition]

37.4 Operation page

When operation condition is satisfied, operation to perform is set.

There are [Bit operation], [Word operation], [Key Input] and [Special function] in type of operation.

Operation can be set up to 10, if the condition is satisfied, operation is executed from registered sequence.



[Figure. Operation page]

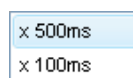
37.4.1 Composition of operation page

Operation page consists of operation list part at top and operation setting part at bottom.

Let us explain on [Bit operation], [Word operation], [Key Input] and [Special function] of operation setting part in next column.

(1) Scan delay

Delays operation of calculation along setting time.



[Figure. Time unit]

(2) Operation list

If register operation, saves operation list.
Operation list consists of following.

Operation	Explanation
No	Sequence of registered operation. Operation is performed along this sequence.
Operation	Displays type of operation as [BIT], [WORD], [KEY], [SPECIAL].
DataType	Displays data type(DEC, UDEC, HEX, BCD, ASCII) of address used in operation.
Expression	Displays operation briefly.

Button which edits operation list is as following.

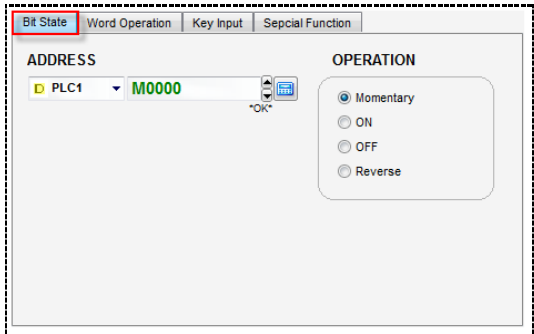
Part	Explanation
Down	Moves sequence of selected operation down.
Up	Moves sequence of selected operation up.
Add	Registers new operation additionally.
Edit	Edits contents of selected operation.
Delete	Deletes selected operation.

37.4.2 Operating setting part

There are [Bit operation], [Word operation], [Key Input] and [Special function] as type of operation.


(1) Bit State

Bit State is the operation which executes ON/OFF data of bit address.
Data of bit address has data of [0] and [1].
When it is [0], it is called [OFF], when it is [1], it is called [ON].



[Figure. Bit state]

Bit state		Explanation
ADDRESS		Inputs bit address to operate.
OPERATION	Momentary	While pressing touch button, data of bit address is [ON], while releases pressing, it gets [OFF].
	ON	If presses touch button, data of bit address gets [ON].
	OFF	If presses touch button, data of bit address gets [OFF].
	Reverse	If presses touch button, data of bit address is converted from [ON] to [OFF] and [OFF] to [ON].

If sets bit address, operation and press  button, Bit State is registered in [Operation list].

No	Operation	Data Type	Expression
1	BIT	DEC	M0000 = On
2	BIT	DEC	(SYS)0000.00 = Off
3	BIT	DEC	(SPEC)_10FF.00 = Reverse

[Figure. Registered bit operation]

(2) Word operation

Word operation means calculation between word addresses.

It is the operation which replaces data to word address, or the results from operation between word addresses to word address. .

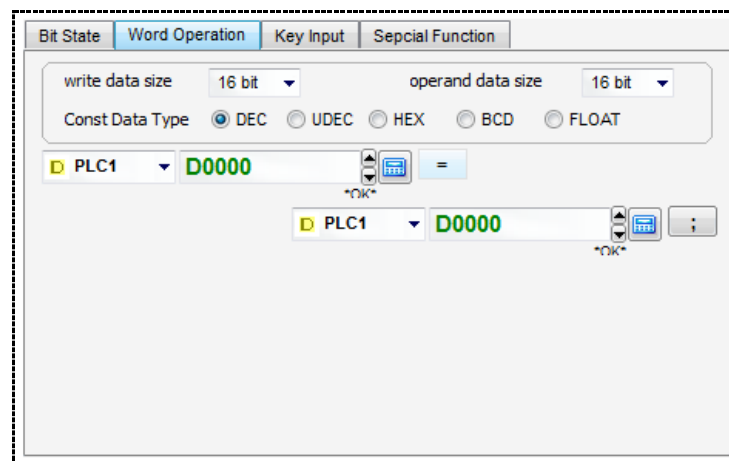
Word address is the address boundary of 16bit.

When 16bit of word address is all 0, it is [0] if changes it to decimal.

When 16bit of word address is all 1, it is [65535] if changes it to decimal.

So, data of word address has the range of [0 ~ 65535].

In case of symbolic decimal, it has range of [-32767 ~ 32768].



[Figure. Word operation]

Word operation	Explanation
Write data size	Size of output operation is the size of address which saves calculating results of operation. Sets one out of [16 bit] or [32 bit]. [32 bit] is used when saving bigger value than [16 bit] as using it up to next address to the designated address. The number of designated word address becomes sub-address, next number of address to the address becomes higher address.
Operand data size	Size of operation is the size of address used in operation. Sets one out of [16 bit] or [32 bit]. [32 bit] is used when saving bigger value than [16 bit] as using it up to next address to the designated address. The number of designated word address becomes sub-address, next number of address to the address becomes higher address.
Const Data Type	Sets data type of constant value. [DEC] is symbolic decimal. [UDEC] is non-symbolic decimal. [HEX] is hexadecimal. [BCD] is hexadecimal actually, it is data which is used just like decimal because numbers including A~F are not displayed.

Shape conversion of data is the function of changing data type.

Shape conversion of data is set as [Nothing] first.

If sets shape conversion of data, can set one line of operation only.

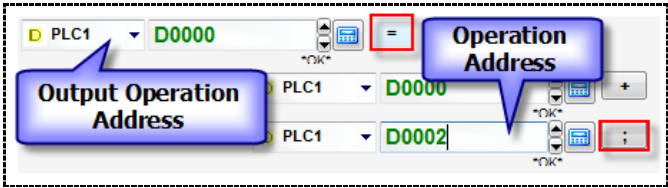
Reads data of [Operation address], converts set data type and saves it to [Output operation address].

[BCD] is hexadecimal actually, it is data which is used just like decimal because numbers including A~F are not displayed. [OBCD] is Omron BCD meaning BCD type of Omron PLC.



[HEX] is hexadecimal, [DEC] is decimal, [Float] is data type with decimal.

Shape conversion of data	Explanation
Nothing	Does not implement shape conversion of data.
BCD → HEX	Reads data of operation address with BCD, converts it to HEX and saves it in output operation address.
HEX → BCD	Reads data of operation address with HEX, converts it to BCD and saves it in output operation address.
OBCD → DEC	Reads data of operation address with BCD, converts it to DEC and saves it in output operation address.
DEC → OBCD	Reads data of operation address with DEC, converts it to OBCD and saves it in output operation address.
DEC → Float	Reads data of operation address with DEC, converts it to Float and saves it in output operation address.
Float → DEC	Reads data of operation address with Float, converts it to DEC and saves it in output operation address.


Sets calculation of word operation as following.

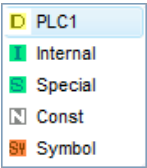


[Figure. Calculation of word operation]

Left address based on  is [Output operation address] which saves the results of calculation.
Right address based on  is [Operation address] which saves the results of calculation.

Replaces constant values to [Output operation address] using calculation, or replaces the results from operation between [Operation addresses] to [Output operation address].

Operation address can be set up to maximum 4, ending of operation specifies .
Operation address can be set as constant value as well as multiple addresses as below figure.



[Figure. Type of operation address]

Completes calculation by setting calculation between operation addresses.
If clicks [Operation button] at right of operation address, operation list appears.



[Figure. Operation list]

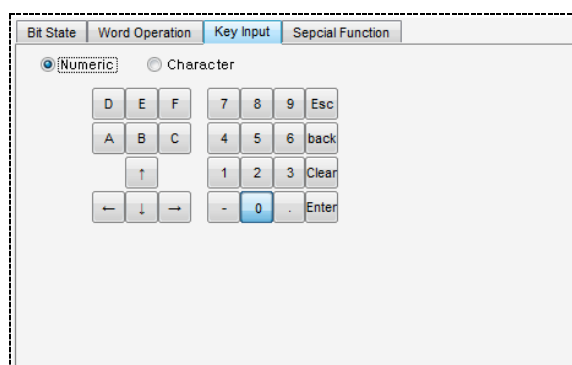
Operation	Explanation
;	Means end of operation.
+	[Add] data of two operation addresses.
-	[Subtract] data of two operation addresses.
*	[Multiply] data of two operation addresses.
/	[Divide] data of two operation addresses.
^	Bit Statewhich calculates the value of binary number by [Bit XOR] operation.

%	Balance operation which calculates balance after dividing data of two operation addresses.
&	Bit Statewhich calculates the value of binary number by [bit AND] operation.
	Bit Statewhich calculates the value of binary number by [Bit OR] operation.
<<	Bit Statewhich operates [Bit left shift]. Implements bit shift the value of left operation to right as much value of right operation.
>>	Bit Statewhich operates [Bit right shift]. Implements bit shift the value of left operation to left as much value of left operation.

(3) Key Input

Key Input is the function which makes [Number key] or [Text key] using touch button.

First, selects which one to register out of number key or text key.

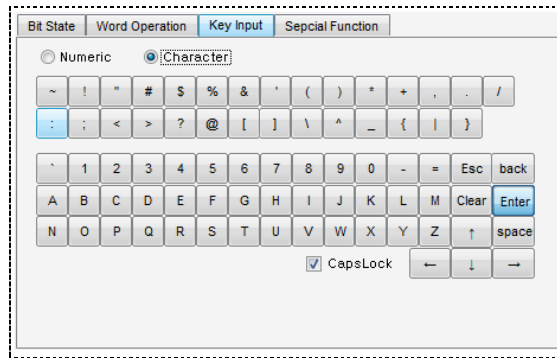


[Figure. Key Input]

If selects number key, number keys are provided as figure above.

Numeric	Explanation
0 ~ 9	10 number keys.
A ~ F	6 keys to input hexadecimal.
Direction key	Direction key to change the position of input mode of key display tag. (Refer to [19.4] of [Chapter 19] regarding input mode of key display tag.)
-	Negative key.
.	Decimal point.
Esc	Key to cancel input.
back	Deletes one lately-key input out of key input data.
Clear	Deletes all key input data.
Enter	Inputs key input data to set address.

If selects [Text], text keys are provided as following figure.



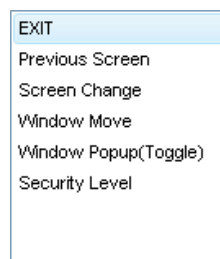
[Figure. Character key]

Character key	Explanation
Special texts	Various special keys are provided as keyboard does from [~] to [=].
0 ~ 9	10 number keys.
A ~ Z	26 English letters. Can register small letters if does not check [CapsLock] at bottom.
Direction keys 방향키	Direction keys to change the position of input mode of key display tag. (☞ Refer to [19.4] of [Chapter 19] regarding input mode of key display tag.)
Esc	Key to cancel input.
back	Key to delete latest key input out of entire key input data.
Clear	Deletes all key input data.
Enter	Inputs key input data set in address.
space	Inputs space.

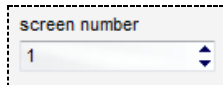
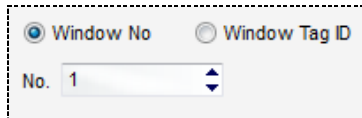
(4) Special function

- [SCREEN] Special function

Special functions related with screen.



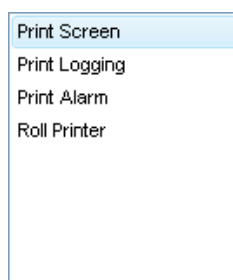
[Figure. Special functions related with screen]

SCREEN	Explanation
EXIT	Terminates operating screen and moves to main screen.
Previous Screen	Moves to previous screen from current screen.
Screen Change	<p>If designates screen number, moves to designated screen.</p> 
Window Move	<p>After registering it in window screen and touching touch screen, window screen is moved to touched coordinates touched in base screen if touches base screen.</p>
Window Popup (Toggle)	<p>Designates [Window screen number] or registered [Window tag ID].</p> <p>[Window tag ID] is displayed in [Information] of registered window tag. The window tag has to be set as [Touch tag used] in property. If selects and designates [Window tag ID], window screen set in the window tag is imported.</p> <p>If touches it once, window screen is popped up, if touches once again, the window screen gets disappeared.</p>  <p>(Refer to [Chapter 23~24] regarding property of window tag.)</p>
Security Level	<p>Calls password window screen.</p> <p>Can input password in password window screen.</p> <p>[Password window screen] is set automatically if implements [Password setting] in [Project] menu, it can be created in popup menu which is displayed by pressing right button of mouse of [Window screen] of [Project manager].</p> <p>(Refer to [Chapter 7.10] of [Chapter 7] regarding password setting(security level setting).)</p>

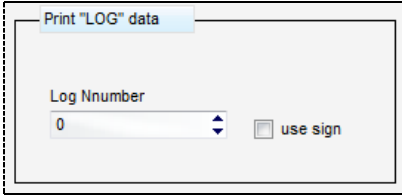
- [PRINT] Special function

Special functions related with print.

Touch screen can be print by connecting with general printers and roll printers(mini printers).

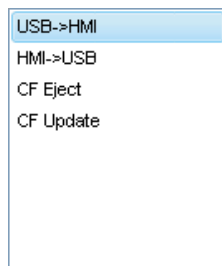


[Figure. Special functions related with print]

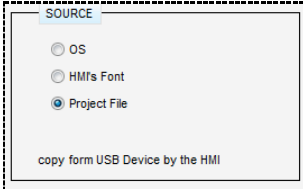
PRINT	Explanation
Print Screen	Prints current screen with connected printer.
Print Logging	<p>Prints logging data with connected printer.</p>  <p>Given that Logging can be set from [Logging 1] to [Logging 8], inputs logging number to print.</p> <p>Displays symbol(–) when printing logging data, checks [Symbol] to print negative data.</p>
Print Alarm	Prints alarm details with connect printer.
Roll Printer	<p>Can print data of touch screen by 232C communications with roll printers as mini printer.</p> <p>Prints the edited contents separately by connecting with COM1 port of touch screen.</p> <p>(☞ Refer to [4.10] of [Chapter 4] regarding how to use roll printer.)</p>

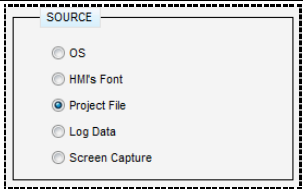
- [USB/CF] Special function

Special functions related with USB memory storage units or CF memory card.



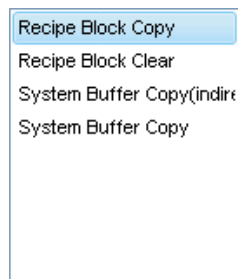
[Figure. Special functions related with USB/CF]

USB/CF	Explanation
USB->HMI	<p>Copies files in USB memory storage unit to memory of touch screen.</p>  <p>Selects files to copy out of OS, Font and design files.</p>
HMI->USB	Copies data of touch screen to USB memory storage unit.

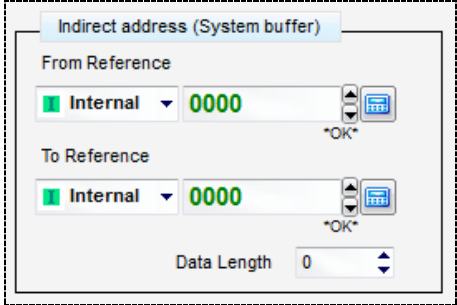
	 <p>Selects files to copy out of OS, Font, design files. Logging date and screen capture. [Screen capture] function is the function which enables currently-operating screen to be captured and saved in USB memory storage unit with bitmap image as it is.</p>
CF Eject	<p>Can save logging or alarm data by mounting CF memory card at rear side of touch screen.</p> <p>Before removing this CF memory card, removes it safely by pressing [CF Eject] button definitely.</p> <p>Moves all logging or alarm data left in touch screen memory to CF memory card and removes the connection.</p>
CF Update	<p>Can save logging or alarm data by mounting CF memory card at rear side of touch screen.</p> <p>If saves logging or alarm data using CF memory card, logging date or alarm data in memory of touch screen is moved to CF memory card when it becomes the certain capacity. [CF Update] moves function logging data or alarm data to CF memory card though it does not become the certain capacity.</p>

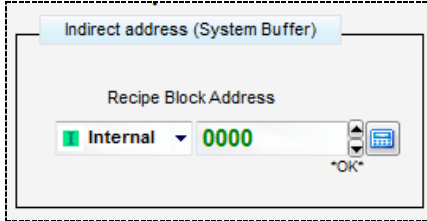
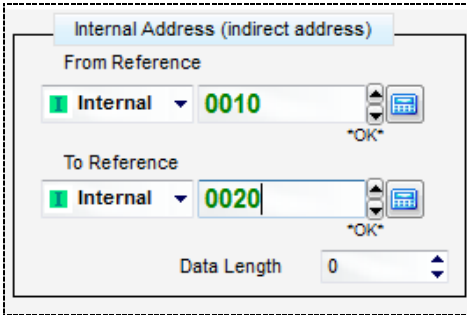
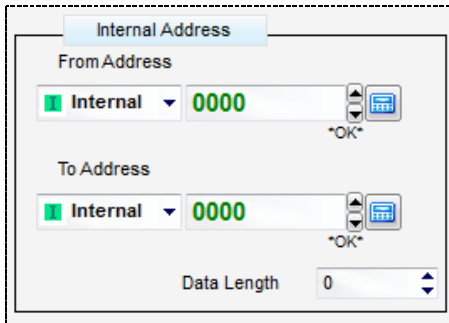
- [MEMORY] Special function

Special functions related with memory.



[Figure. Special functions related with memory]

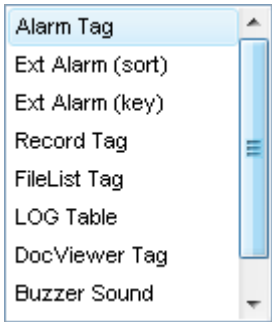
MEMORY	Explanation
Recipe Block Copy	<p>Can be used when uses recipe setting in project.</p> <p>Copies saved recipe data to other block by block unit</p> 

	<p>[From Reference] and [To Reference] can set internal address only. Data of this address becomes number of block.</p> <p>Data length does not have to be input because it is not applied.</p> <p>If sets it as figure above, data of internal address [10] is [5], data of internal address [20] is [3], No. data of recipe block number 5 is copied to block number 3.</p>
Recipe Block clear	<p>Deletes data of recipe block.</p>  <p>[Recipe Block Address] can set internal address only.</p> <p>Data of this address becomes block number of recipe to delete.</p>
System Buffer Copy (indirect)	<p>Function to copy it to other address indirectly as much as [Data length] which sets data of internal address . Indirect copy means copy using reference address.</p>  <p>[From Reference] and [To Reference] can set internal address only. Data of this address becomes number of block.</p> <p>If sets it as figure above, data of internal address [10] is [200], data of internal address [20] is [300] and data length is [10], 10 data of internal address [200~209 address] are copied to internal address [300~309 address].</p>
System Buffer Copy	<p>Function to copy it to other address indirectly as much as [Data length] which sets data of internal address . Indirect copy means copy using reference address.</p>  <p>[From Reference] and [To Reference] can set internal address only. Data of this address becomes number of block.</p> <p>If sets it as figure above, copies data of internal address [10~19 address] to internal address [20~29 address].</p>

● [Extended TAG] Special function

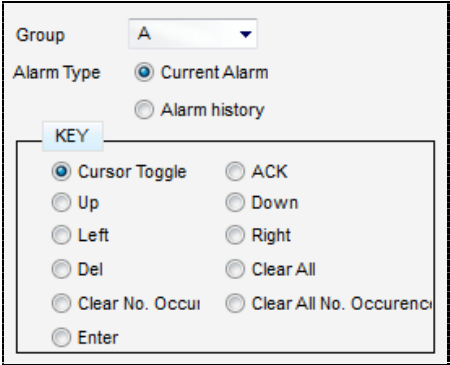
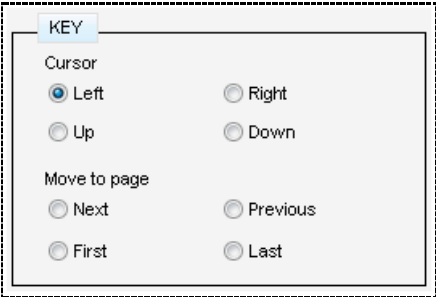
Special functions related with tag.

There are special functions related with alarm tag, extended alarm tag, Record tag, fileList tag, LogTable and Doc viewer tag and buzzer sound and system reset functions.



[Figure. Special functions related with tag]

Extended TAG	Explanation
Alarm Tag	<p>Touch button used as key in alarm tag.</p> <p>Can register key in alarm tag basically, it is used when makes alarm tag and button separately.</p> <div><div>GroupA</div><div>Alarm Type<div><div>Current Alarm</div><div>Alarm history</div></div></div><div>KEY<div><div>Screen Clear</div><div>Scroll Up</div><div>Scroll Down</div></div></div></div> <p>Selects set group and type of alarm in alarm tag. Current alarm can register [UP/DOWN] button and alarm history can register [UP/DOWN/CLEAR] buttons.</p> <p>(Refer to [Chapter 27] regarding alarm tag.)</p>
Ext Alarm (sort)	<p>Touch button used for sorting in extended alarm tag.</p> <p>Can sort currently~displayed alarm list by several standards'. Selects group and alarm type set in extended alarm tag. Then, selects it based on (SORT) standard.</p> <div><div>GroupA</div><div>Alarm Type<div><div>Current Alarm</div><div>Alarm history</div></div></div><div>SORT<div><div>Trigger date</div><div>Trigger time</div><div>ACK date</div><div>ACK time</div><div>Recovered date</div><div>Recovered time</div><div>No. of Occurrence</div></div></div></div>

	<p>[Trigger date] is occurring data, [Trigger time] is occurring hour.</p> <p>[ACK date] is checking date of user, [ACK time] is checking time of user,</p> <p>[Recovered date] is releasing date, [Recovered time] is releasing time and</p> <p>[No. of Occurrence] is occurring frequency.</p> <p>(☞ Refer to [Chapter 28] regarding extended alarm tag.)</p>
Ext Alarm (key)	<p>Touch button used as key in extended alarm tag.</p> <p>Can register key in alarm tag basically, it is used when makes alarm tag and button separately.</p>  <p>Selects set group and type of alarm in alarm tag.</p> <p>Then, selects key to register.</p> <p>[Cursor Toggle] is cursor key.</p> <p>[ACK] is the key displays checking date/hour of user.</p> <p>[UP/DOWN] is the key which moves alarm list or cursor up and down.</p> <p>[Left/Right] is the key moves alarm list left and right of the score.</p> <p>[Del] is the key deletes one selected alarm by cursor.</p> <p>[Clear All] is the key deletes entire alarm which was released.</p> <p>[Clear No. Occurrence] is the key which deletes one occurrence frequency selected by cursor.</p> <p>[Clear All No. Occurrence] is the key entire occurrence frequency.</p> <p>[Enter] is the key to take action.</p>
Record tag	<p>Touch button which is used as cursor key and screen moving key in Record tag.</p>  <p>[LEFT] moves it to left as size of one data.</p> <p>[RIGHT] moves it to right as size of one data.</p> <p>[UP] becomes several graphs which meets cursor when displays several graphs. At this</p>

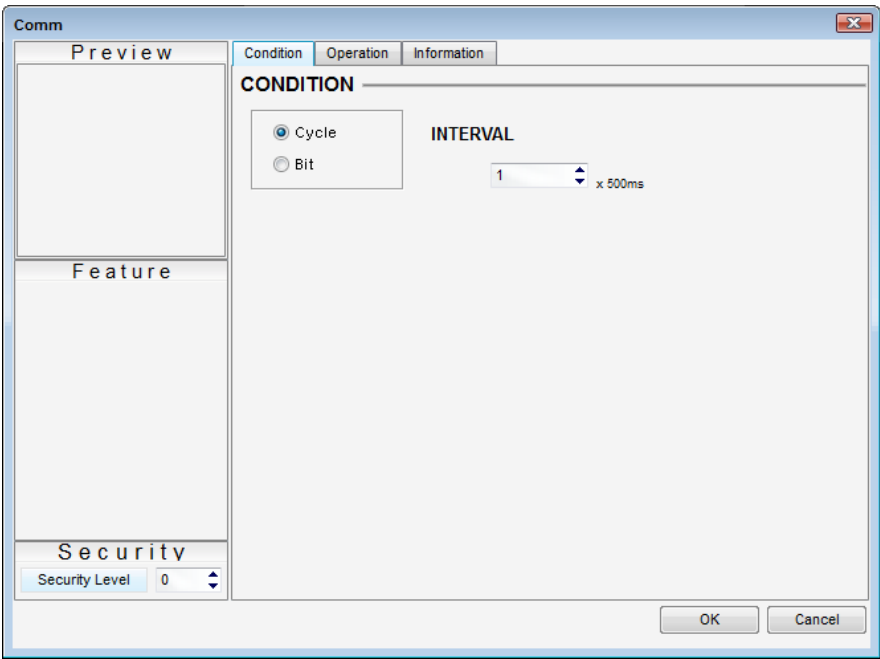
	<p>time, it displays intersection with the graph displays moving to upper graphs from bottom graph.</p> <p>[DOWN] becomes several graphs which meets cursor when displays several graphs. At this time, it displays intersection with the graph displays moving to bottom graphs from upper graph.</p> <p>[NEXT] moves to next page.</p> <p>[PREV] moves to previous page.</p> <p>[FIRST] moves to first page.</p> <p>[LAST] moves to last page.</p>
FileList Tag	<p>Touch button which uses as key in File List tag.</p> <div> </div> <p>[Scroll Up] moves up files in file list part by one file.</p> <p>[Scroll Down] moves down files in file list part by one file.</p> <p>[Copy to Left] is used when two file list are registered. It copies files selected from left file list to the selected memory of right file list.</p> <p>[Copy to Right] is used when two file list are registered. It copies files selected from right file list to the selected memory of left file list.</p> <p>[Pop Up(Toggle)] implements popup [File manager] registered in window screen of base screen. If touches one, it popped up, and if touches one again, it disappears.</p> <p>[Enter] is used when [CF-recipe] function is used.</p> <p>After selecting recipe files saved in CF memory card, if press [Enter] button, recipe is moved to [Storage address when recipe is moved].</p> <p>[Delete] deletes the selected files.</p> <p>(Refer to [Chapter 40] regarding File List tag.)</p>
LOG Table	<p>Touch button which is used as key in log table tag.</p> <div> </div> <p>Sets logging number set in log table.</p>

	<p>Number of scroll is the time of scrolling when it is moved by [Up/Down/Left/Right] buttons.</p> <p>[Up] moves up logging blocks displayed as number of scroll.</p> <p>[Down] moves down logging blocks displayed as number of scroll.</p> <p>[Left] moves logging column displayed as number of scroll to left.</p> <p>[Right] moves logging column displayed as number of scroll to right.</p> <p>[CF] imports and display logging data saved in CF memory card.</p> <p>[SRAM] imports and display logging data saved in touch screen.</p> <p>[First] moves it to most upper part of log table.</p> <p>[Last] moves it to lowest part of log table.</p> <p>(☞ Refer to [Chapter 29] regarding log table tag.)</p>
DocViewer Tag	<p>Touch button which is used as key in DocViewer tag.</p> <div> </div> <p>[Left] moves screen to left.</p> <p>[Right] moves screen to right.</p> <p>[Up] moves screen upward.</p> <p>[Down] moves screen downward</p> <p>[Next] moves screen to next page.</p> <p>[Previous] moves screen to next page.</p> <p>[Last] moves screen to the last page.</p> <p>[First] moves screen to the first page.</p> <p>[Scale Up] enlarges document.</p> <p>[Scale Down] shrinks document.</p> <p>(☞ Refer to [Chapter 41] regarding DocViewer tag.)</p>
Buzzer Sound	Sounds short [Beep].
System Reset	In case of using PLC screen conversion, displays other screen which does not communicate with PLC, restores it to set screen in PLC screen conversion address if press this button when re-open communications.

CHAPTER 38 Communications Tag

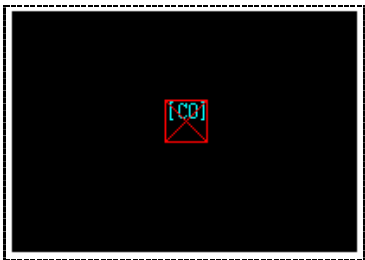
38.1 Outline of Communications Tag

Reads or writes data of word address between PLC and touch screen along condition as long as set length.



[Figure. Property screen of communications tag]

Communications tag registered in screen. It is OK to place communications tag in any position of edit screen, is not displayed in touch screen.



[Figure. Communications tag registered in edit screen]

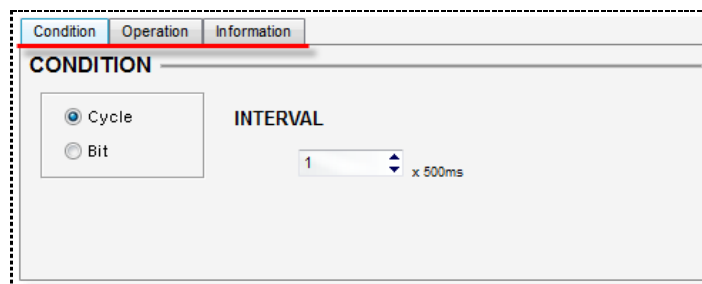
38.2 Property screen page composition of communications tag

Communications tag consists of [Condition bit status], [Operation] and [Information] pages.

Property page	Explanation
Condition bit status	Page which sets condition to operate communications tag. Sets condition per interval and bit status.
Operation page	Sets communications operation performed when satisfies condition o communications tag.
Information page	Page which displays data of communications tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

38.3 Condition bit status page

Sets operating condition.



[Figure. Condition bit status page]

38.3.1 Cycle

Executes the operation for each time interval.

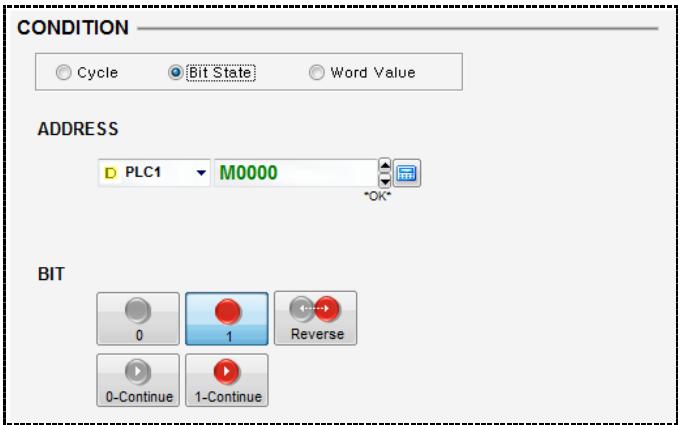
Unit of time interval is 100ms(0.1 second), if sets [0]x100ms, its speed is very high because it operates by interval of scanning time of touch screen.



[Figure. Cycle condition]

38.3.2 Bit State

Executes the operation along status of bit address.



[Figure. Operating along bit status]

Bit state		Detailed explanation
Address		Sets bit address to use as condition.
Bit	0	When set bit address becomes OFF, updates it once.
	1	When set bit address becomes ON, updates it once.
	Reverse	Whenever set bit address gets reversed, updates it once.
	0-Continue	While set bit address is OFF, updates per scan.
	1-Continue	While set bit address is ON, updates per scan.

38.4 Operation page

Page which sets performing operation when condition is satisfied in [Bit condition status].

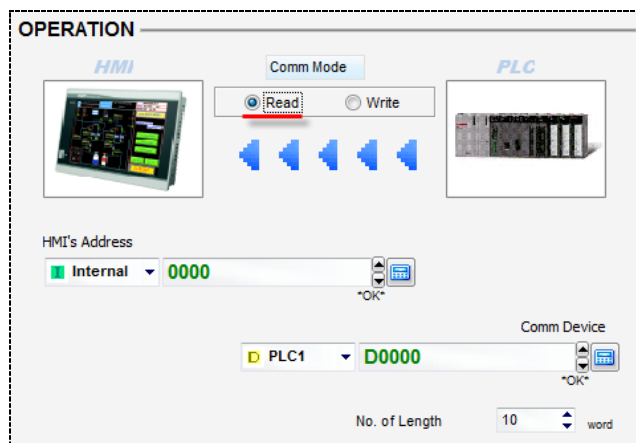
There are [Read] and [Write] in communications method.

38.4.1 [Read] communications method

[Read] is the operation which reads data of sequential address of PLC as much as [Communications data length] to internal address of touch screen.

How to setup is as followings.

1. Selects [Read] as communications method.
2. Sets internal address of touch screen to write read data on.
3. Sets the address of PLC(external equipment) to read.
4. Inputs communications data length.



[Figure. [Read] communications method]

Communications data length is number of 16bit address because its unit is [Word].

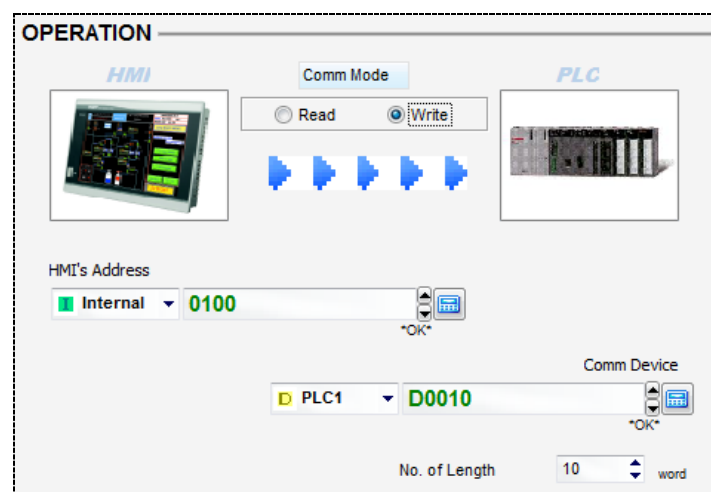
If sets it as above figure, and condition of communications tag is satisfied, reads data of address [D0000~D0009] of PLC to internal address [0000~0009] of touch screen.

38.4.2 [Write] communications method

[Write] is the writing operation which data of internal address of touch screen in sequential address of PLC as much as [Communications data length].

How to setup is as following.

1. Selects [Write] as communications method.
2. Sets internal address of touch screen to write read data on.
3. Sets the address of PLC(external equipment) to read.
4. Inputs communications data length.



[Figure. [Write] communications method]

Communications data length is number of 16bit address because its unit is [Word].

If sets it as above figure, and condition of communications tag is satisfied, reads data of address [D0010~D0019] of PLC to internal address [0100~0109] of touch screen.

CHAPTER 38 Clock Tag

CHAPTER 39 – Clock Tag

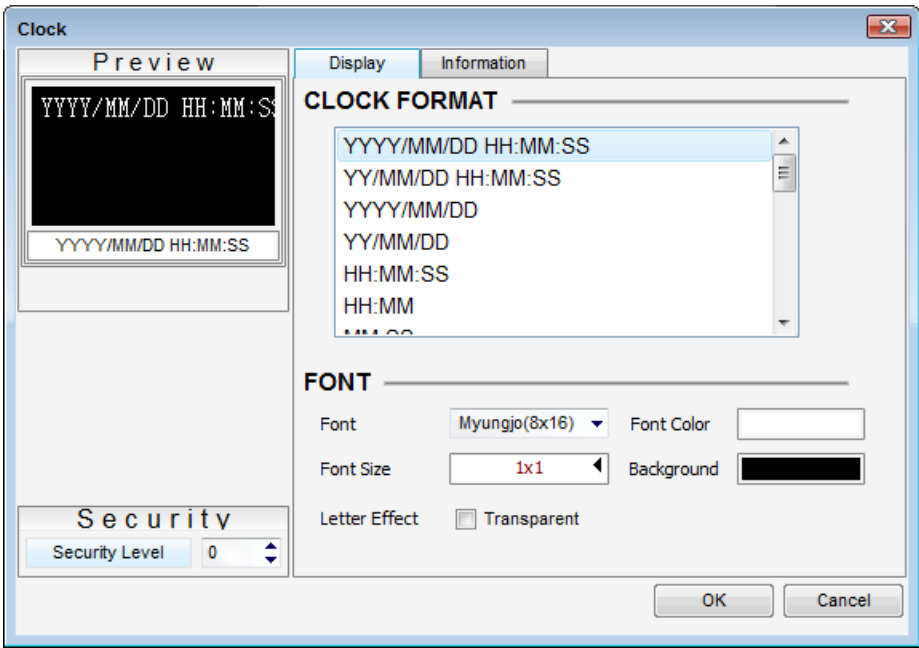
39.1 Outline of Clock Tag

Displays date and time.

Data of date and time are displayed at bottom of touch screen menu screen.

Also, each time data is contained in [_RTC_YER], [_RTC_MTH], [_RTC_DAY],[_RTC_HUR], [_RTC_MIN], [_RTC_SEC], [_RTC_DAYOFWEEK] out of special address of touch screen.

Date and time can be edited in menu screen, and changed the same if changes data of special address.



[Figure. Property screen of clock tag]

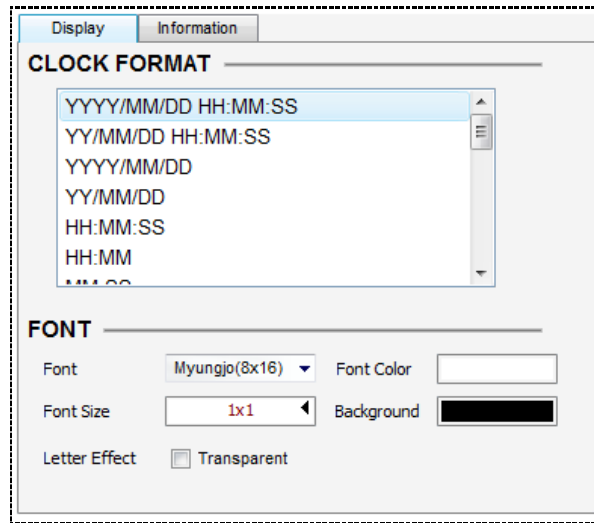
39.2 Property screen page composition of clock tag

Clock tag consists of [Display] and [Information] pages.

Property page	Explanation
Display page	Sets format to display date and time, font and color.
Information page	Page which displays data of clock tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

39.3 Display page

Sets format to display date and time, font and color.

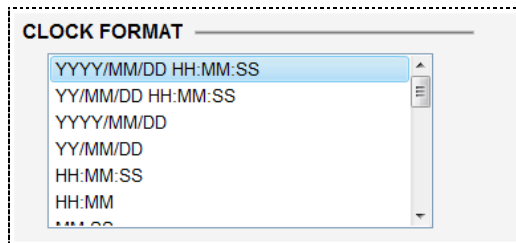


[Figure. Display setup page]

39.3.1 CLOCK FORMAT

Selects format to display date and time.

Each letter means as following, Y-YEAR, M-MONT, D-DAY, H-HOUR, M-MINUTE, S-SECOND.

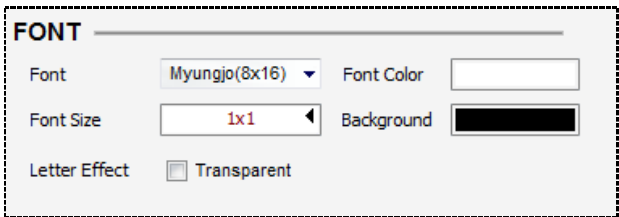


[Figure. Selects display format]

In [Y] display, if it is YYYY, displays with [2010] and if it is YY, displays [10] only.

39.3.2 FONT

Sets font, size, font color and background color effect displayed in clock tag.



[Figure. Font setting]

Font setting	Explanation
Font	<div>Selects font to display date and time from below list.<div><div>Myungjo(8x16)</div><div>Myungjo(8x16)</div><div>Gothic(8x16)</div><div>Gothic(16x32)</div><div>ASCII(8x8)</div></div></div>
Font Color	<div>Selects font color to display date and time.</div>
Font Size	<div>Enlarges the selected font as much as size of width/length from fonts.<div><div>A</div><div>3x3</div></div></div>
Background	<div>Selects background color of character to display date and time.</div>
Latter Effect	<div>Displays background of characters to display date and time.</div>

CHAPTER 39 File List Tag

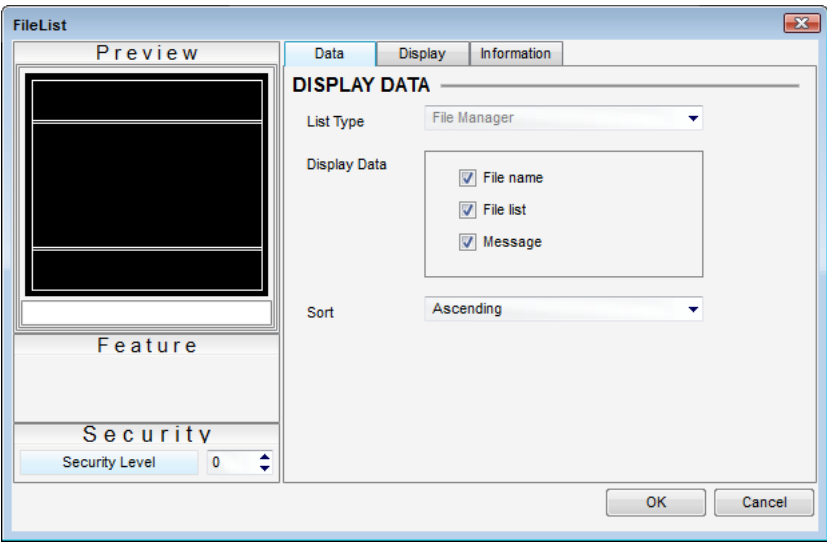
CHAPTER 40 – File List Tag

40.1 Outline of File list Tag

File list is the tag which shows files contained in internal memory of touch screen, CF memory card and USB memory storage unit in list. .

After registering two file lists, can copy files of memory each other using button of special function of Touch tag.

Property screen of File List.




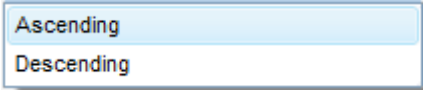
[Figure. Property screen of file list]

40.2 Page composition of file list property screen

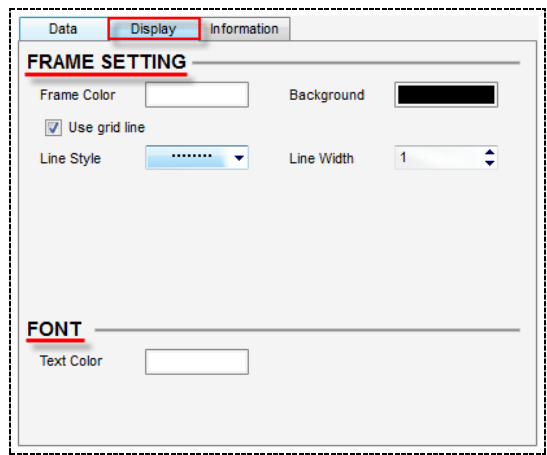
Property screen of file list consists of [Data], [Display] and [Information] pages.

Property page	Explanation
Data	Page which sets data to display in file list.
Display	Page which sets design of file list.
Information	Page which displays data of file list. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

40.3 Data page


Data	Explanation
Display data	<p>Checks data to display out of file name, file list and message.</p>  <p>[File name] displays folder name at top.</p> <p>[File list] shows file list contained in selected memory.</p> <p>[Message] displays message such as [Fail!/No File!/Copying!/Success!] when moving files.</p>
Sorting	<p>Selects one out of ascending order or descending order.</p>  <p>[Ascending order] sorts file list in ascending order.</p> <p>[Descending order] sorts file list in descending order.</p>

40.4 Display page



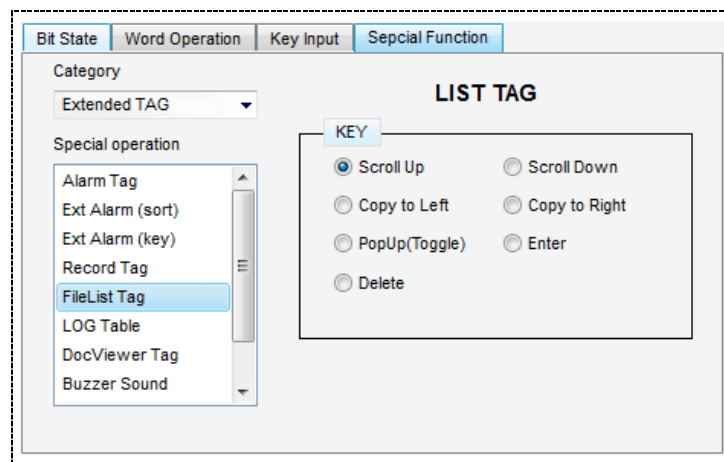
[Figure. Display page]

Display	Explanation
Frame color	Sets color of frame.
Background	Sets background color.
Use grid line	If checks it, draws width column in file list.
Shape of line	Selects shape of line.

	
Line Width	Selects 1~2 [Dot] as thickness.
Text color	Sets font color to display.

40.5 Touch button to use in file list

Uses 7 touch buttons in file list as following figure.



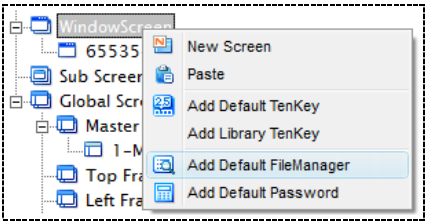
[Figure. Touch button in file list]

Touch button	Explanation
Scroll Up	Moves position of files in file list part to upward by one file.
Scroll Down	Moves position of files in file list part to downward by one file.
Copy to Left	Uses when two file lists are registered. Copies the files selected from left file list to selected memory from right file list.
Copy to Right	Uses when two file lists are registered. Copies the files selected from right file list to selected memory from left file list.
Pop Up(Toggle)	Popup [File manager] registered in window screen of base screen. If touches once it is popped up, if touches once again, it is disappeared.
Enter	Used when [CF-recipe] function is used. After selecting recipe saved in CF memory card, recipe data is moved to [Storage address when moves recipe] if presses [Enter] button.
Delete	Deletes the selected files.

40.6 File search/copy using file manger

File manager enables files between touch screen/CF/USB memory to be searched and copied because two file lists are registered.

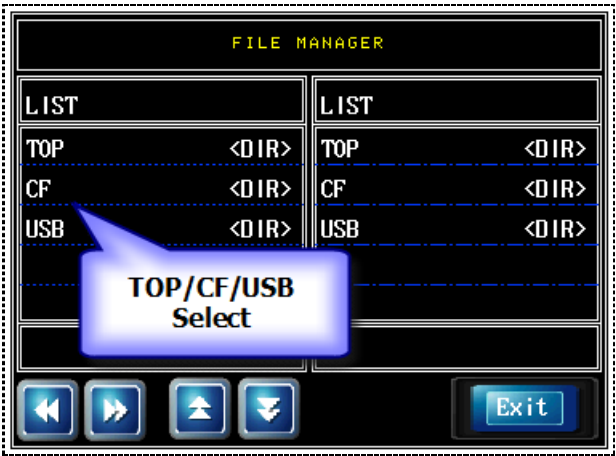
File manager can be added in popup menu which is appeared if clicks right button of mouse in [Window screen] of [Project manager].



[Figure. Add file manager window]

If adds [File manager window screen], it is registered in window screen number [65530].

If executes file manager in actual touch screen, following figure is appeared as below.



[Figure. File manager under touch screen operation]

It consists of two file lists, and shows each memory in [File list] part of each file list. If touches one of [TOP], [CF] and [USB], shows file list in the selected memory.



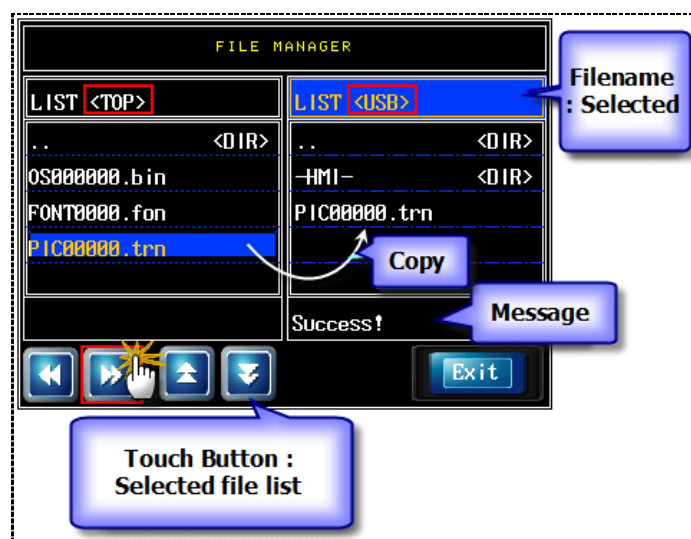
[Figure. Title made by Touch tag of [Window Move] function]

The part which is written as tile [File manager] at top is Touch tag which has [Window Move] function internally. So, if touches this part and base screen part, [File manager window screen] is moved to the position base screen was touched.

[File move] and [Scroll up/down] touch button are registered at bottom.

If presses [Exit] button, file manager window screen is closed.

Figure below reviews file list of the selected memory out of [TOP], [CF] and [USB], copying files to another memory.



[Figure. File manager operating touch screen]


Left file list views file list of <touch screen memory> and right file list views file list of <USB memory storage unit>.

[OS000000.bin] is OS file.

[FONT0000.fon] is font file.

[PC000000.trn] is design file.

Selects files to copy in file list of left file list by touch, files from selected memory of left file list if

touches  (Copy to Right) at bottom, displays copying situation as message(Success!) at bottom.

On the contrary, can copy files of right file list to selected memory from left file list.

CHAPTER 40 DocViewer Tag

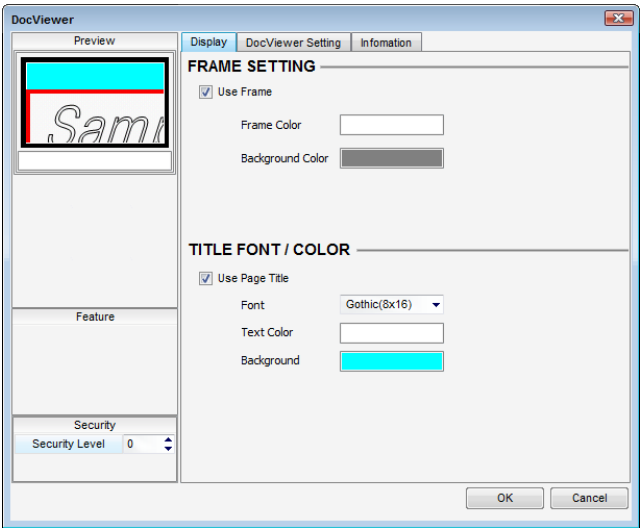
CHAPTER 41 – DocViewer Tag

41.1 Outline of DocViewer Tag

Can display PDF document saved CF memory card to screen.

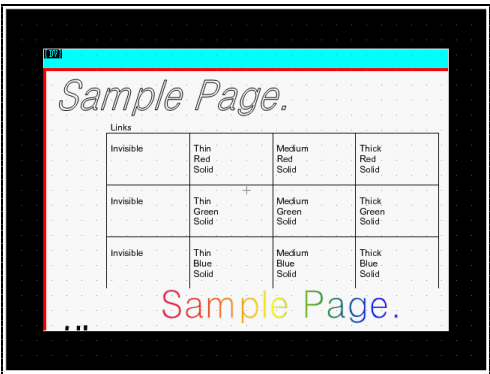
In order to use DocViewer tag, first convert PDF file to bitmap image which can be recognized by touch screen using [Tool]–[PDF image converter] of menu, creates index file and saves it to CF memory card. (Refer to [44.6] of [Chapter 44] regarding [PDF image converter]).

If copies [DOC] entire folder which is created after [PDF image converter] to [–HMI–] subfolder of CF memory card, mounts CF memory card which [DOC] folder is saved onto touch screen main body, DocViewer tag operates.



[Figure. Property screen of DocViewer tag]

DocViewer tag registered in screen. [Sample Page] is viewed in edit screen as below figure.



[Figure. DocViewer tag registered in edit screen]

DocViewer tag under operation in touch screen.

Displays figure of PDF file saved in CF memory card through DocViewer tag, buttons are registered as special functions of touch at bottom. Using these buttons, can move document in one page, move page and enlarges/shrinks it.



[Figure. DocViewer under operation]

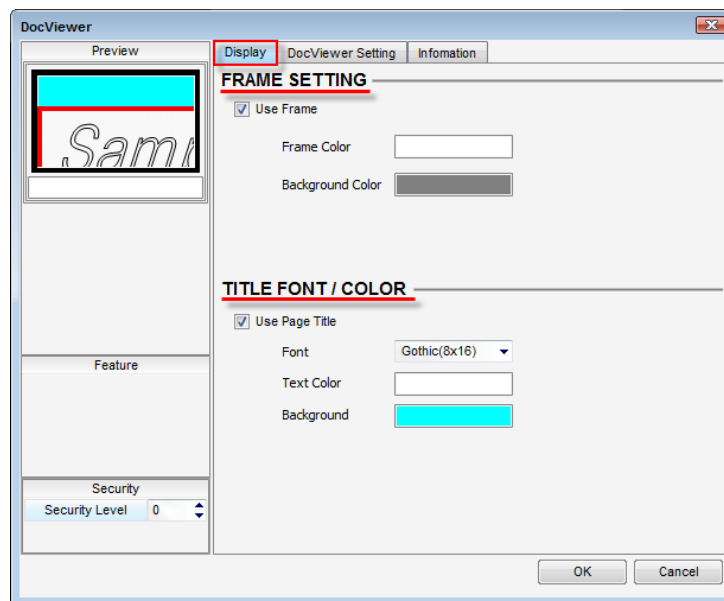
41.2 Property page composition of DocViewer tag

DocViewer tag consists of [Display], [DocView setting] and [Information] pages.

Property page	Explanation
Display page	Sets frame and tile of page.
DocView setting page	Sets document ID, initial page number, page size and scroll option.
Information page	Page which displays data of DocViewer tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

41.3 Display page

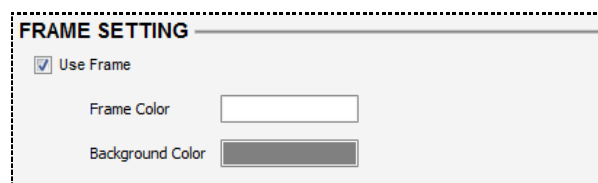
Sets frame setting, title font and color setting.



[Figure. Display page]

41.3.1 FRAME SETTING

Sets frame to display document in touch screen.

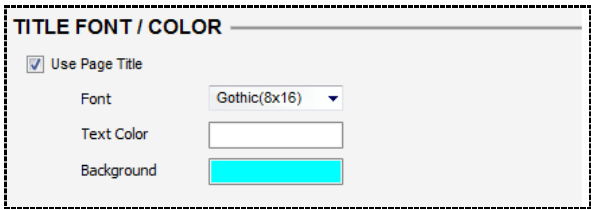


[Figure. Frame setting]

Frame setting	Explanation
Use Frame	Selects whether to display frame of document to display.
Frame color	Selects color of frame.
Background color	Selects background color of document display part.

41.3.2 TITLE FONT/COLOR

Sets document tile to display in screen.

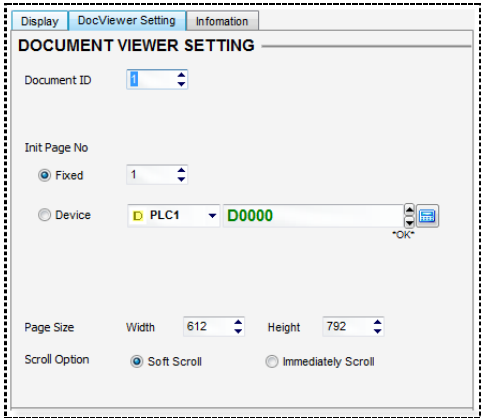


[Figure. Title font/color setting]

Title setting	Explanation
Use page title	Selects whether to display page title.
Font	Selects text font to display title from below list. <div><div>Gothic(8x16) Myungjo(8x16) Gothic(8x16) Gothic(16x32) ASCII(8x8)</div></div>
Text color	Sets text color to display title.
Background	Sets background color of character to display title.

41.4 DocViewer setting page

Selects document ID to display in DocViewer, and sets page number to display initially.



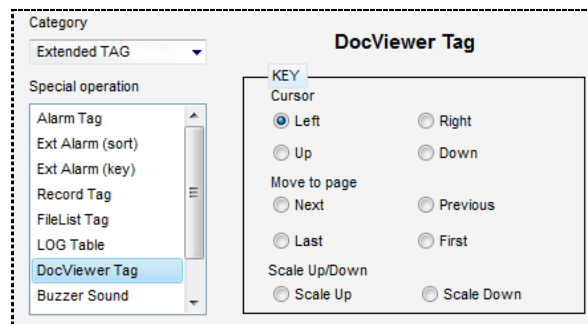
[Figure. DocViewer setting page]

DocViewer setting		Explanation
Document ID		Inputs folder number to use out of folders in CF memory card. (1~256). Folder which document is placed in is sub-[DOC folder] of CF memory card [HMI folder]. If input 1 as document ID, route of called folder is [CFW-HMI-WDOC\DOC1].
Init page number	Fixed	Inputs page number of initial document to display first.
	Divice	Data of input address becomes page number to display first.
Page Size	Width	Sets width of page to display.
	Height	Sets height of page to display.
Scroll option	Smooth scroll	Moves smoothly when scrolls page.
	Immediate scroll	Moves immediately when scrolls page.

If registers DocViewer tag in screen, button of moving document, page scrolling and shrinking/enlarging is not created. If necessary, has to create separate button using special function of Touch tag.

Sets [Special function] as below in [Operation] page of Touch tag.

Registers it selecting the function from [Extend TAG]–[DocViewer TAG].



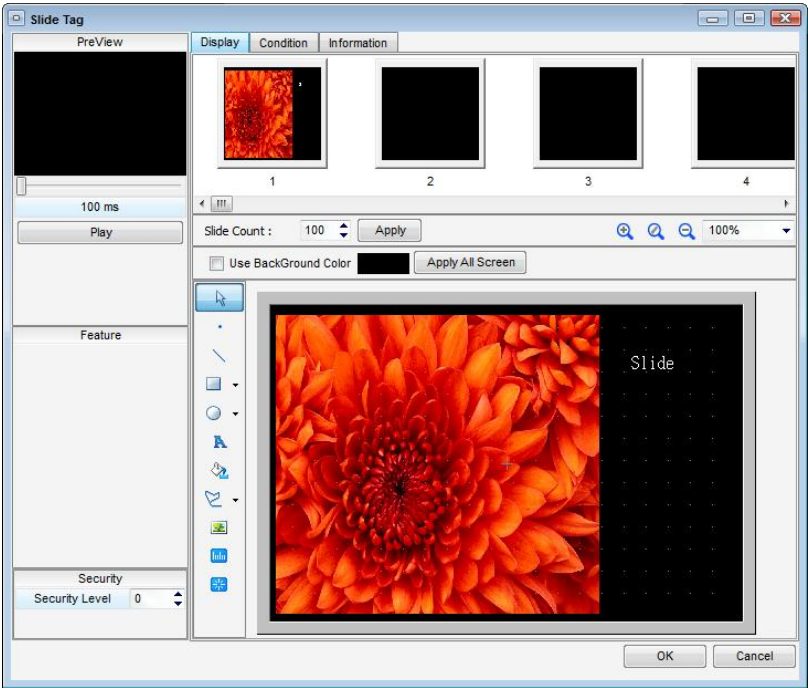
[Figure. Related key with DocViewer]

KEY		Explanation
Cursor	Left	Scroll to left.
	Right	Scroll to right.
	Up	Scroll to upward.
	Down	Scroll to downward.
Move to page	Next	Moves document to next page.
	Previous	Moves document to previous page.
	Last	Moves document to first page.
	First	Moves document to last page.
Scale Up/Down	Scale Up	Enlarges document.
	Scale Down	Shrink document.

CHAPTER 42 Slide Tag

42.1 Outline of Slide Tag

Function which has animation effect displaying multiple screen in regular interval in sequence
Number of slide which can use is 100, figure can be registered only.
Can set slide to operate and stop along values of word address or bit address.



[Figure. Property screen of Slide tag]

42.2 Page composition of Slide tag property screen

Property screen of Slide tag consists of [Display], [Condition] and [Information] pages. .

Property page	Explanation
Display page	Page which sets number of slide and edits each slide screen.
Condition page	Page which sets operating setting along values of bit/word address and period time to display slide and periodic type.
Information page	Page which displays data of Slide tag. Displays number of registered screen, tag ID, creating time, edit time, position and size information, and position and size information can be edited.

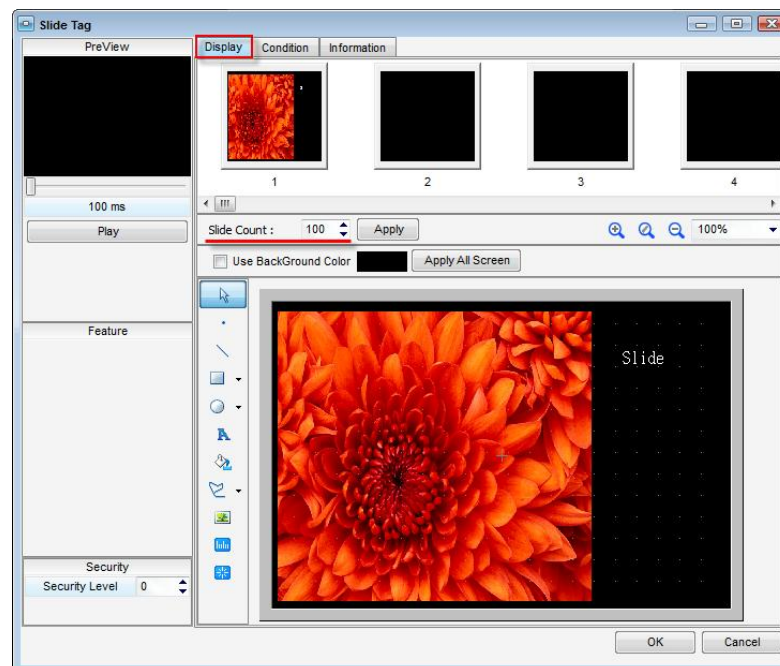
Slide tag registered in screen. Screen of first slide is displayed.




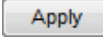
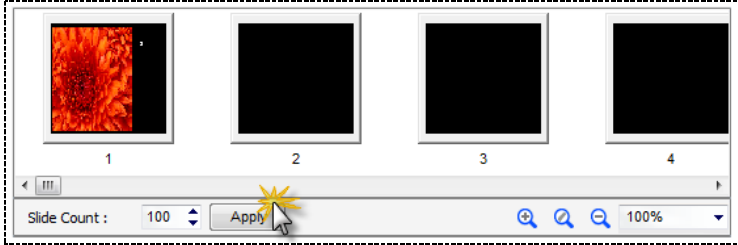
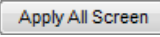
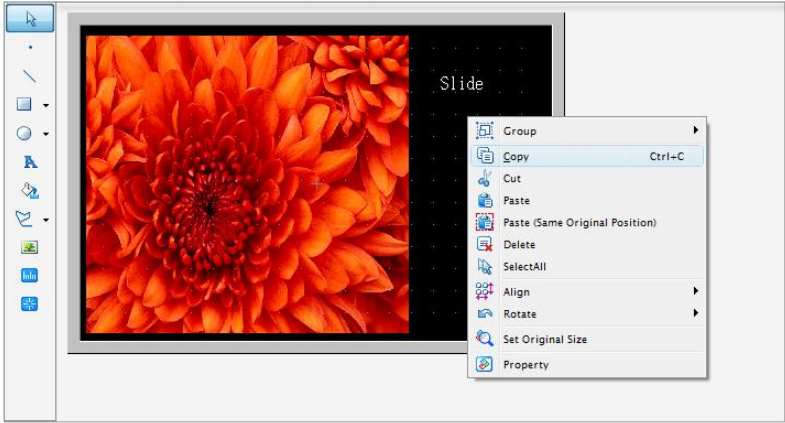
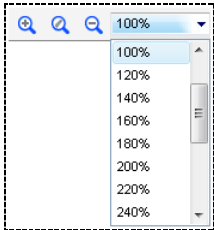
[Figure. Slide tag registered in edit screen]

42.3 Display page

Page which sets number of slides, and registers and edits figures in each screen.

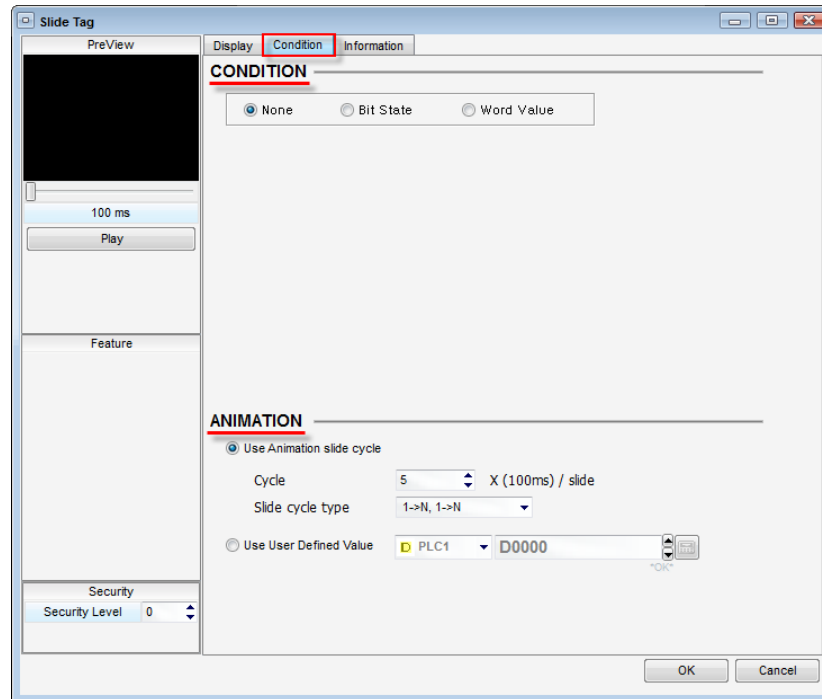


[Figure. Display page]

Slide	Explanation
Slide Count	<p>Sets number of slides to use. Can register up to 100, and all screen is displayed in preview.</p> <p>If clicks slide with mouse, edit screen is displayed at bottom, can register figure.</p> <p>As below figure, slides are created if inputs numbers in person or inputs number by pressing arrow button and  button, slides are created.</p> <p>Whenever number is changed, has to press  button to change the number.</p> 
Use background color	<p>Sets background color of slide screen. If selects colors to use, press  button, background colors of all screen are changed.</p>
Slide edit screen	<p>Registers figures in each slide screen. Draws figures using figure toolbar at left, can use edit popup menu by clicking right button of mouse.</p> <p>Size of screen is the same as Slide tag registered in base screen.</p> 
Enlarge/shrink	<p>Can edit slide screen by enlarging or shrinking.</p> <p>It is useful when edits small Slide tag.</p> <p>Enlarges/shrinks by pressing icons or selects magnification from below list.</p> 

42.4 Condition page

Page which can set slide to operate and stop along values of word address or bit address, and set periodic time and period type to display slides.



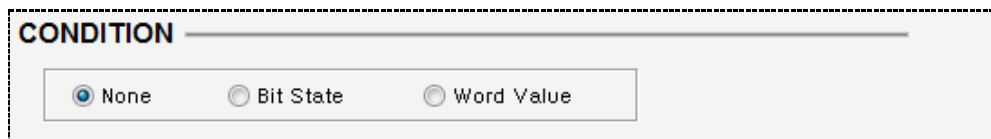
[Figure. Condition page]

42.4.1 CONDITION

Sets Slide tag to operate along ON/OFF of bit address or value of word address.

(1) When sets as [None]

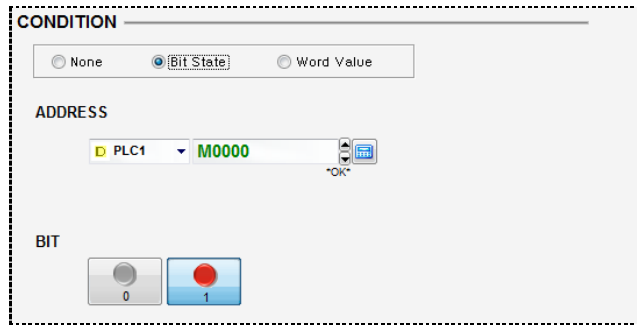
Slide tag always operates.



[Figure. Set as None]

(2) When sets [Bit State]

Enables Slide tag to operate along condition of bit address designated by user.

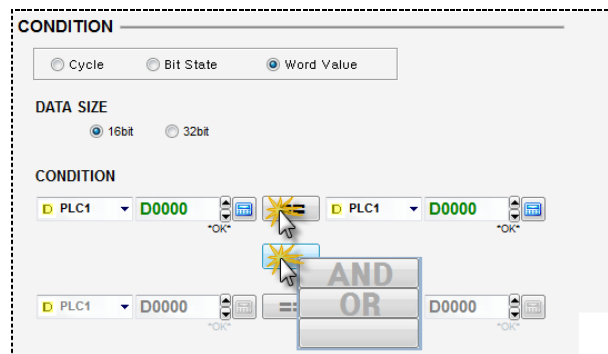


[Figure. Set bit state]

Bit state		Explanation
Address		Sets bit address to use as condition.
Bit	0	When designated address is OFF, Slide tag operates.
	1	When designated address is ON, Slide tag operates.

(3) When sets [Word Value]


In case of TRUE after comparing data, enables Slide tag to operate.



[Figure. Set word value]










Selects data size of word address using as condition out of 16bit or 32 bit.


Inputs word address to use in first item, and sets word address which was used in first item and another word address or constant to compare in second item.

Presses  button after input, sets comparison operation.





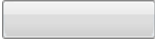
[Figure. Operation]

Operation	Explanation
	Value is bigger.
	Values are the same or bigger
	Values are the same.
	Value is smaller.
	Value is the smaller or the same.
	Value is not the same.
	AND operation
	OR operation
	XOR operation

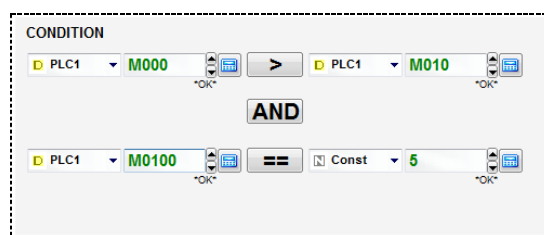
In case of using two operations, If presses  button and selects the operation out of [AND, OR], following operation gets activated as following.



[Figure. Operation]

Operation	Explanation
	If two operations are satisfied, it operates..
	If satisfies one out of two operations, it works. .
	Does not use operation.

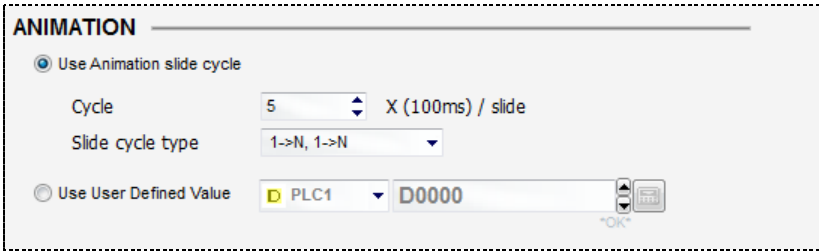
For example, If sets it as below, word address [M0000] is bigger than [M0010] and value of [M0100] is [5], Calculation tag works because two operations are all TRUE(AND).



[Figure. Word value operation]

42.4.2 ANIMATION

Sets period of animation and period type, and sets slide to be displayed along value using word address.



[Figure. Animation setup]

Animation	Explanation
Use animation slide period	Displays slide which user registers in screen in sequence using regular period.
Period	Sets 100ms(0.1 second) unit as period.
Slide period type	<div>Selects period type from list below.</div> <div><div>1->N, 1->N</div><div>1->N, 1->N</div><div>N->1, N->1</div><div>1->N->1->N</div><div>N->1->N->1</div></div> <div>[1->N, 1->N] – Repeats display in sequence from slide No. 1 to last slide.</div> <div>[N->1, N->1] – Repeats display in sequence from last slide to slide No. 1.</div> <div>[1->N->1->N] – Repeats display in sequence from slide No. 1 to last slide and repeats display again in reverse.</div> <div>[N->1->N->1] – Repeats display in sequence from last slide to slide No. 1, and repeats display again in reverse.</div>
Use user’s value	<div>Displays slide which’s number is identical to word value using word address.</div> <div>If word value is 1, slide number 1 is displayed, if 2, slide number 2 is displayed.</div>

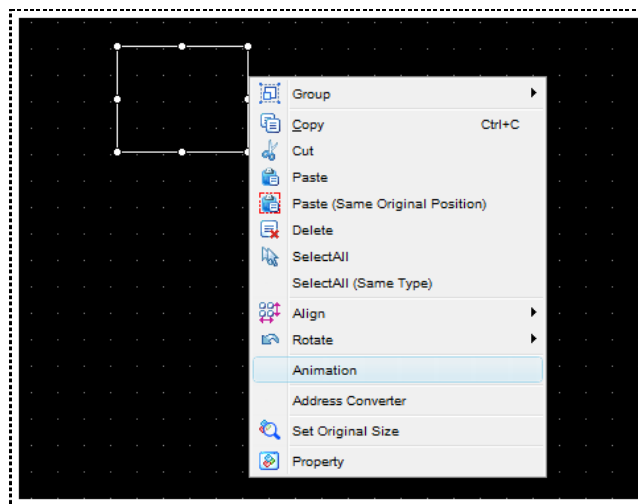
CHAPTER 42 Animation Tag

CHAPTER 43 – Animation Tag

43.1 Outline of Animation Tag

Function which gives animation effect by simple setting of figures and some of tags registered in screen. Can move it in sequence along set coordinates or rotate it along designated angle designated by user. Can set function of [View/invisible] which enables set figure or tag which animation is set to be viewed or not by setting bit condition. Also, Animation tag can operate or stop it along set bit/word condition.

Can execute Animation tag in edit screen when presses right button of mouse. Selects [Animation] of popup menu by pressing right button of mouse when selecting figure or tag.



[Figure. Execute Animation tag]

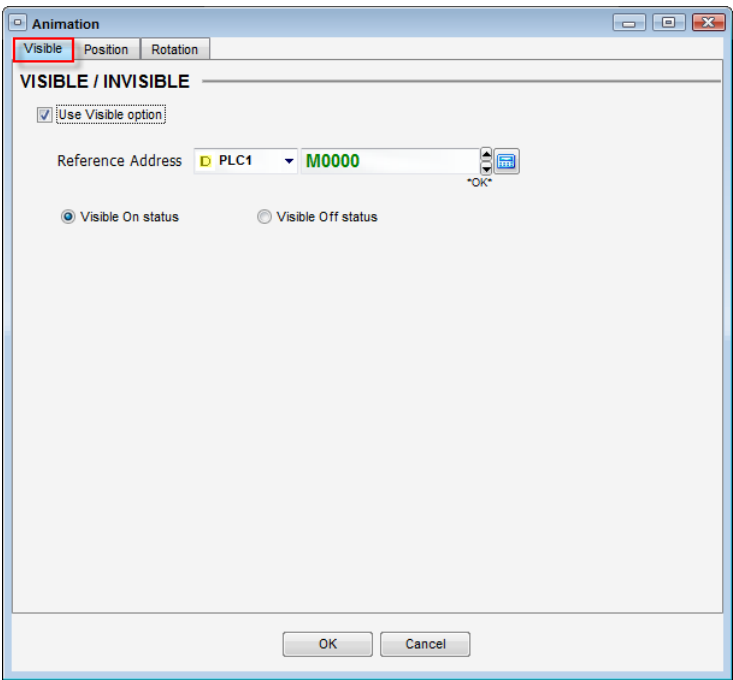
43.2 Tag composition of Animation tag property tag

Property screen of Animation tag consist of [View], [Position] and [Rotate] pages.

Property page	Explanation
Visible page	Page which sets [View/invisible] function along ON/OFF using bit address.
Position page	Page which sets it to be moved along track(X/Y coordinates) or moved horizontally or vertically by setting moving range.
Rotation page	Page which sets it to be rotated at the original place along angle or rotated based on center by setting central coordinates.

43.3 Visible page

Page which sets [Visible/invisible] function along ON/OFF using bit address.

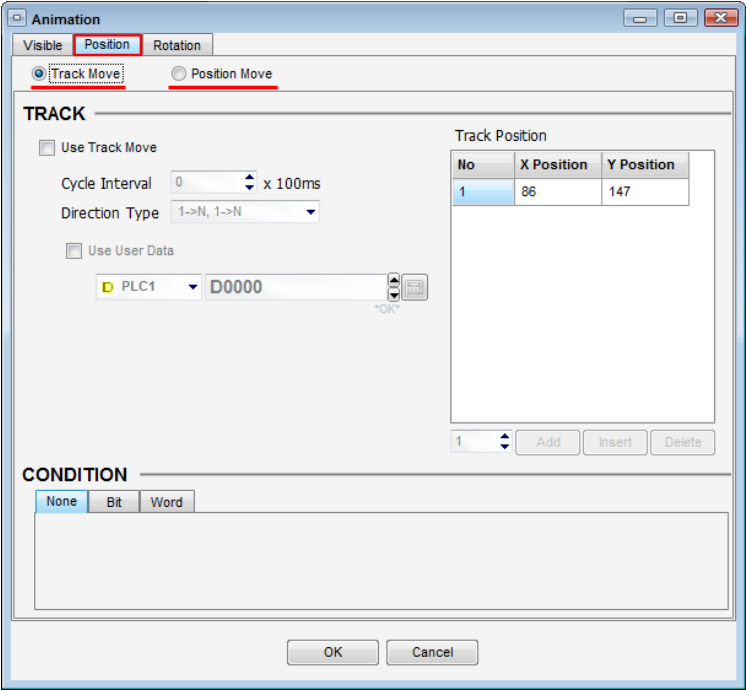


[Figure. Visible page]

Visible page	Explanation
Use visible option	Selects whether to use [Visible/invisible] function of figure and tag.
Reference address	Inputs bit address to use in [View/invisible] function.
Visible On status	Figure and tag are viewed when bit address is [ON].
Visible Off status	Figure and tag are viewed when bit address is [OFF].

43.4 Position page

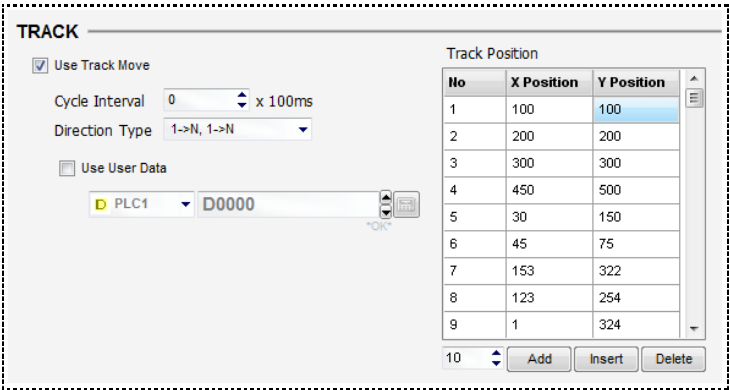
Page which sets it to be moved along track(X/Y) coordinates or moved horizontally or vertically by setting moving range.



[Figure. Position page]

43.4.1 Track Move

Function which moves figure and tag in sequence of X/Y coordinates.



[Figure. Track move]

Track	Explanation
Use Track Move	If checks check box, moves animation effect to track move.
Cycle Interval	Sets time interval when figure and tag move.
Direction type	<p>Sets direction type from list below.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> 1->N, 1->N N->1, N->1 1->N->1->N N->1->N->1 </div> <p>[1->N, 1->N] – Repeats display in sequence from slide No. 1 to last slide.</p> <p>[N->1, N->1] – Repeats display in sequence from last slide to slide No. 1.</p> <p>[1->N->1->N] – Repeats display in sequence from slide No. 1 to last slide and repeats display again in reverse.</p> <p>[N->1->N->1] – Repeats display in sequence from last slide to slide No. 1, and repeats display again in reverse.</p>
Use user data	<p>Value of input word address is [No.] of track.</p> <p>Moves figure and tag to X/Y coordinates of the track along data.</p>

Sets X/Y coordinates which figure and tag to move from [Track position].

Basis of X/Y coordinates is center of figure and tag.

Track Position

No	X Position	Y Position
1	0	78

1

▲▼

Add


Insert





Delete

[Figure. Track position]



Track position	Explanation
No	Displays sequence of X/Y coordinates registered in track.
X Position	<p>Inputs value to use as X coordinates.</p> <p>Inputs moving range within resolution of touch screen to use.</p> <p>Converted it to status which can input by double-click of mouse.</p>
Y Position	<p>Inputs value to use as Y coordinates.</p> <p>Inputs moving range within resolution of touch screen to use.</p> <p>Converted it to status which can input by double-click of mouse.</p>

Values of X and Y which is input in first [No.1] is the position of figure and tag to set currently.

If inputs number of tracks to use in number-input item below and presses  button, track is added as below figure.

Track Position		
No	X Position	Y Position
1	0	78
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
1		  

[Figure. Track position]

If presses  button when track is selected, new track is added at top, if presses  button, the track is deleted.

43.4.2 Position Move

Function which moves figure and tag horizontally or vertically by setting moving range.

Repeats moving as much as set moving unit(pixel) within moving range. Or, can move value of word address designated by user by using horizontal or vertical position.

(1) HORIZONTAL move

Moves figures or tags horizontally.

Horizontal Move

Vertical Move

HORIZONTAL

☒ Use Auto Move

Move Range (Pixel) Begin 154 ~ End 0

Move Pixel 1

Move Type Begin->End, Begin->End

Cycle Interval 1 x 100ms

☐ User Defined Position X = D PLC1 D0000

☐ Use Scale

Input Range Min 0 ~ Max 0

Move Range Begin 0 ~ End 0

[Figure. Horizontal move]

Vertical move	Explanation
Use Auto Move	Repeats moving as much as set moving unit(pixel) within [Moving range].
Move Range (Pixel)	Inputs start and end of moving range(X axis) horizontally in touch screen by pixel unit. Value which is input as basis from start is the current position of figures and tags. Inputs moving range to use within resolution of touch screen.
Move Pixel	Inputs moving range(pixel).
Move Type	<p>Selects move type from list below.</p> <div> </div> <p>[1->N,1->N] – Repeats display in sequence from [Start] coordinates to [End] coordinates.</p> <p>[N->1,N->1] – Repeats display in sequence from [End] coordinates to [Start] coordinates.</p> <p>[1->N->1->N] – Repeats display in sequence from [Start] coordinates to [End] coordinates and repeats it again in reverse.</p> <p>[N->1->N->1] – Repeats display in sequence from [End] coordinates to [Start] coordinates and repeats it again in reverse.</p>
Cycle Interval	Sets time interval when moves by set pixel unit.
User Defind Position X	Inputs word address and moves it using the address as horizontal or vertical position.
Use Scale	<p>Uses word address value and moving value by scaling.</p> <p>Moves figures and tags in proportion of number input by [Input range(word value)] and [Moving range(move value)]. If [Input range 0~2000] and [Moving range 0~100], when actual word address value is 800, figure and tag are moved to X coordinates 40 because proportion of two ranges is 20:10.</p>

(2) VERTICAL move

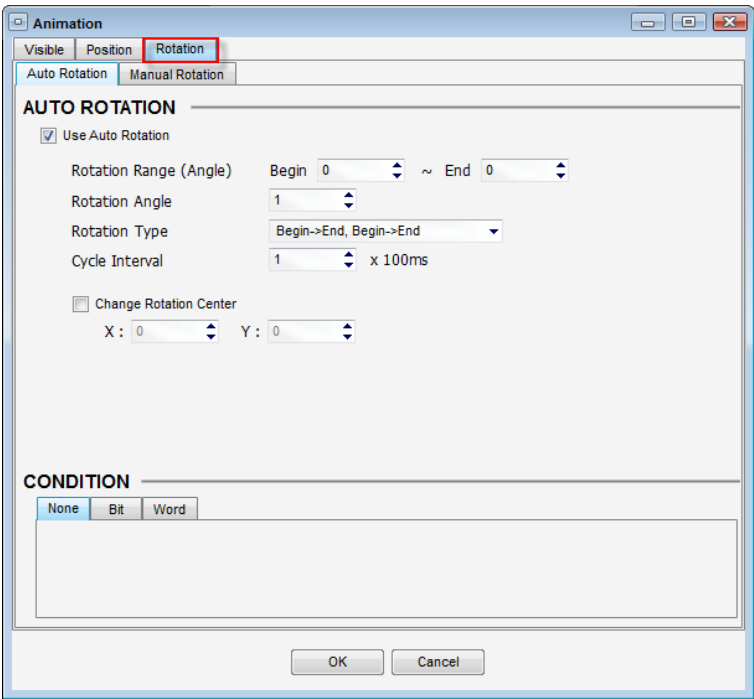
Moves figures or tags vertically.

[Figure. Vertical move]

Vertical move	Explanation
Use Auto Move	Repeats moving as much as set moving unit(pixel) within [Moving range].
Moving Range (Pixel)	Inputs start and end of moving range(X axis) horizontally in touch screen by pixel unit. Value which is input as basis from start is the current position of figures and tags. Inputs moving range to use within resolution of touch screen.
Move Pixel	Inputs moving range(pixel).
Move Type	<p>Selects move type from list below.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> 1->N, 1->N N->1, N->1 1->N->1->N N->1->N->1 </div> <p>[1->N,1->N] – Repeats display in sequence from [Start] coordinates to [End] coordinates. [N->1,N->1] – Repeats display in sequence from [End] coordinates to [Start] coordinates. [1->N->1->N] – Repeats display in sequence from [Start] coordinates to [End] coordinates and repeats it again in reverse. [N->1->N->1] – Repeats display in sequence from [End] coordinates to [Start] coordinates and repeats it again in reverse.</p>
Period Interval	Sets time interval when moves by set pixel unit.
User Defined Position Y	Inputs word address and moves it using the address as horizontal or vertical position.
Use Scale	<p>Uses word address value and moving value by scaling.</p> <p>Moves figures and tags in proportion of number input by [Input range(word value)] and [Moving range(move value)]. If [Input range 0~2000] and [Moving range 0~100], when actual word address value is 800, figure and tag are moved to X coordinates 40 because proportion of two ranges is 20:10.</p>

43.5 Rotation page

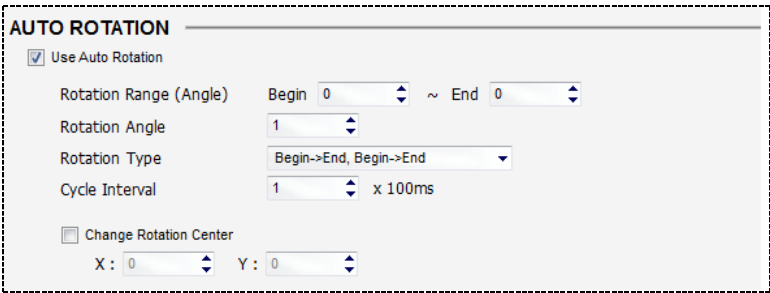
Page which sets it to be rotated at the original place along angle or rotated based on center by setting central coordinates.



[Figure. Rotation page]

43.5.1 AUTO ROTATION

Rotate automatically along rotating range and angle.



[Figure. Auto rotation]

Auto rotation	Explanation
Use Auto Rotation	Repeats rotation as wide as set rotating angle within [Rotation range].
Rotation Range (Angle)	Inputs value which figure and tag to rotate between [Start] angle and [End] angle, 0~359(1° ~360°).
Rotation Angle	Inputs rotating angle by 1° unit.

Rotation Type	<p>Selects rotation type from list below.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> 1->N, 1->N N->1, N->1 1->N->1->N N->1->N->1 </div> <p>[1->N,1->N] – Repeats display in sequence from [Start] coordinates to [End] coordinates.</p> <p>[N->1,N->1] – Repeats display in sequence from [End] coordinates to [Start] coordinates.</p> <p>[1->N->1->N] – Repeats display in sequence from [Start] coordinates to [End] coordinates and repeats it again in reverse.</p> <p>[N->1->N->1] – Repeats display in sequence from [End] coordinates to [Start] coordinates and repeats it again in reverse.</p>
Cycle interval	Sets time interval when moves by set pixel unit.
Change rotation center	Page which sets it to be rotated at the original place along angle or rotated based on center by setting central coordinates.

43.5.2 MANUAL ROTATION

Rotates figures and tags using word address value as rotating angle.

[Figure. Manual rotation]

Manual rotation	Explanation
Use Manual Rotation	Rotates it using input word address value as angle.
Rotation	Inputs word address to use as angle value.
Use Scale	<p>Uses word address value and moving value by scaling.</p> <p>Moves figures and tags in proportion of number input by [Input range(word value)] and [Moving range(move value)]. If [Input range 0~2000] and [Moving range 0~100], when actual word address value is 800, figure and tag are moved to X coordinates 40 because proportion of two ranges is 20:10.</p>
Change Rotation Center	Page which sets it to be rotated at the original place along angle or rotated based on center by setting central coordinates.

43.5.3 CONDITION

Sets animation operation to be operated along setting of bit address or value of word address.

(1) None

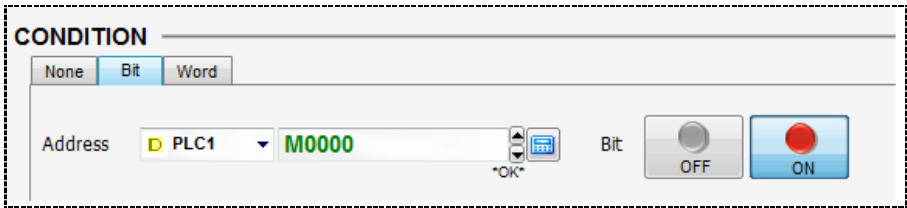
Without using animation operating condition, enables Animation tag to be operated always.



[Figure. None]

(2) Bit

Enables Animation tag to be operated along status of bit address designated by user.



[Figure. Bit condition]

Bit condition		Explanation
Address		Inputs bit address to use as operating condition.
Bit	0	If designated bit address is OFF status, Animation tag is operated.
	1	If designated bit address is ON status, Animation tag is operated.

(3) Word

If word address value designated by user is within set range, enables Animation tag to be operated.



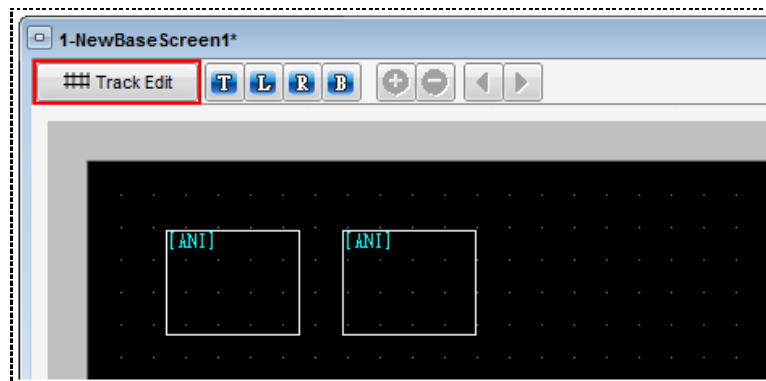
[Figure. Word condition]

As figure above, value of address [D0000] is bigger or same than/as 10, smaller or same than/as 100, Animation tag is operated.

43.6 Track Edit

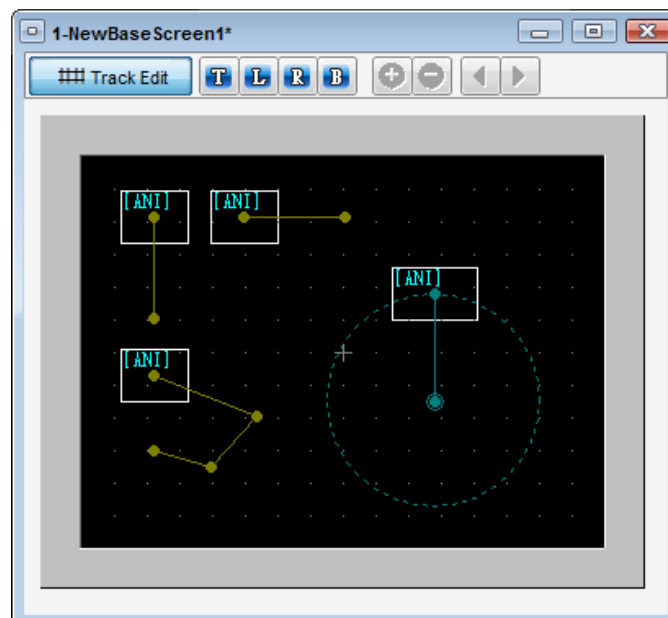
Can edit route of [Track], [Moving range] and [Rotating range] set in Animation tag with mouse in edit screen. Places it at top of edit screen as figure below.

If presses [Track Edit] button, edit screen is changed.

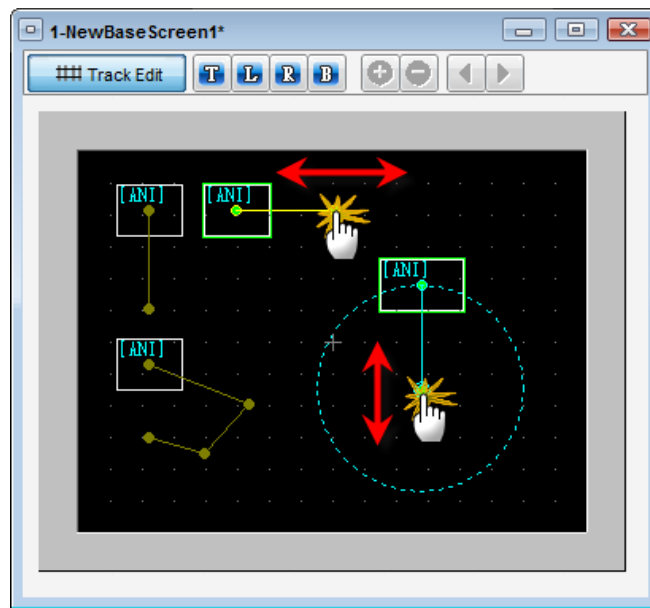


[Figure. Track Edit]

As figure below, if [Track Edit] is activated, route of each Animation tag is appeared. If clicks and drags dot connected with route, can change the route.



[Figure. Edit screen edited by Track Edit]



[Figure. Route change by mouse]

CHAPTER 44 Tool Menu

CHAPTER 44 – Tool Menu

Tool menu sets the edit option of XDesignerPlus program and includes additional functions which edits project effectively.

44.1 Cross Reference

Function which inquires and edits PLC address that tag of project uses and internal address of touch screen main body by screen, tag or specific address. Also, enables user to manage the inquired data by converting it to Excel file separately.

[Cross Reference] can inquired largely by two methods. Can inquire address used by basis of tag or registered tag based on the used address.

44.1.1 Address search based on tag

If searches [Tag] with [Tag]/[Address] button and selects project, screen or object(tag type) to search, presses [Search] button, the data included in each condition is appeared.

The screenshot shows the 'Cross Reference' dialog box with the 'Tag' tab selected. The search criteria are: Project: PROJECT, Device: ALL, Sort By: Tag Type, ASC. The search results are displayed in a table with columns: No, Screen Name, Tag ID, Type, AddrCnt, X, Y, Width, Height, Image, Text, MEMO, and Update. The results show 6 entries for touch screen tags.

No	Screen Name	Tag ID	Type	AddrCnt	X	Y	Width	Height	Image	Text	MEMO	Update
1	[SCREEN] NewBas	1	Touch	1	68	37	116	110	N	N		2010-
2	[SCREEN] DefaultT	2	Touch	0	24	69	53	53	N	N		2008-
3	[SCREEN] DefaultT	3	Touch	0	85	69	53	53	N	N		2008-
4	[SCREEN] DefaultT	4	Touch	0	146	69	53	53	N	N		2008-
5	[SCREEN] DefaultT	5	Touch	0	24	129	53	53	N	N		2008-
6	[SCREEN] DefaultT	6	Touch	0	85	129	53	53	N	N		2008-

Below the table, the 'Detail Info' section shows the PLC address details for the selected tag (Tag ID 1):

No	PLC	Address	Kind	Length	RW	STATUS
1	PLC1(MASTER-K 80S, 120S,	M0000	Device Buffer	1	Read&Writ	

At the bottom, the 'Address' field is empty, and the 'Count' is 18. The 'Close' button is at the bottom right.

[Figure. Cross reference – Tag]

Tag		Explanation
Project		Selects project to search when uses multiple projects.
Screen		Selects desire screen out of screen list of selected project.
Object		Selects tag type when searches specific tag.
Sort by		Sorts searched data by ascending order/descending order based on selected basis.
		Tag Type – Sort based on type of tag.
		Tag ID – Sort based on ID number having tag.
		Screen Name – Sort based on name of screen.
		Screen Number – Sort based on number of screen.
		ASC – Ascending order. DSC – Descending order.
Entire data	No	Sequence number of search data.
	Screen Name	Screen name which tag is positioned.
	Tag ID	Original ID which tag has.
	Type	Type of tag.
	AddrCnt	Number of address set in tag.
	X	X coordinates of tag in screen.
	Y	Y coordinates of tag in screen.
	Width	Width of tag
	Height	Height of tag
	Image	Use or not of image of tag
	Text	Use or not of using text of tag
	MEMO	Display contents of memo written in Information of tag property.
	Update	Data and time which is edited latterly
Detailed data	No	Sequence number of detailed data
	PLC	PLC model name or TOP model name which address belongs to
	Address	Address used by tag
	Kind	Type of address under use
	Length	Length of data which address is using
	RW	Whether to apply ReadOnly or Read & Write
Count		Displays number of total data

44.1.2 Tag search based on address

If searches [Tag] with [Tag]/[Address] button and selects project, screen or object(tag type) to search, presses [Search] button, the data included in each condition is appeared.

Cross Reference

Tag **Address** Excel

Project: PROJECT Device: ALL Sort By: Address ASC

Screen: ALL Address Name: ALL

Object: ALL Address Number:

Search

Main Info

No	Screen Name	PLC	Address	Kind	Length	RW	STATUS
1	[SCREEN] DefaultTenKey	SYS(XTOP07TW)	(SPEC)_KEY_DISP32(32Bit)	Special Buffer	32	Read&Writ	
2	[SCREEN] NewBaseScre	PLC1(MASTER-K 80S, 120S,	M0000	Device Buffer	1	Read&Writ	
3	[SCREEN] NewBaseScre	PLC1(MASTER-K 80S, 120S,	M0001	Device Buffer	1	Read&Writ	
4	[SCREEN] NewBaseScre	PLC1(MASTER-K 80S, 120S,	M0002	Device Buffer	1	Read&Writ	
5	[SCREEN] NewBaseScre	PLC1(MASTER-K 80S, 120S,	M0003	Device Buffer	1	Read&Writ	
6	[SCREEN] NewBaseScre	PLC1(MASTER-K 80S, 120S,	M0004	Device Buffer	1	Read&Writ	

Detail Info

No	Screen Name	Tag ID	Type	AddrCnt	X	Y	Width	Height	Image	Text	MEMO	Update
1	[SCREEN] DefaultTt	18	Numeric	1	54	25	192	32	N	Y		2009-06

Count : 16

Close

[Figure. Cross Reference – Address]

Tag		Explanation
Project		Selects project to search when uses multiple projects.
Screen		Selects desire screen out of screen list of selected project.
Object		Selects tag type when searches specific tag.
Sort by		Sorts searched data by ascending order/descending order based on selected basis.
		Tag Type – Sort based on type of tag
		Tag ID – Sort based on ID number having tag
		Screen Name – Sort based on name of screen
		Screen Number – Sort based on number of screen
		ASC – Ascending order DSC – Descending order
Entire data	No	Sequence number of search data
	Screen Name	Screen name which tag is positioned
	Tag ID	Original ID which tag has
	Type	Type of tag
	AddrCnt	Number of address set in tag
	X	X coordinates of tag in screen

	Y	Y coordinates of tag in screen
	Width	Width of tag
	Height	Height of tag
	Image	Use or not of image of tag
	Text	Use or not of using text of tag
	MEMO	Display contents of memo written in Information of tag property
	Update	Data and time which is edited latterly
Detailed date 상세정보	No	Sequence number of detailed data
	PLC	PLC model name or TOP model name which address belongs to
	Address	Address used by tag
	Kind	Type of address under use
	Length	Length of data which address is using
	RW	Whether to apply ReadOnly or Read & Write
Count		Displays number of total data

44.1.3 Excel conversion

After searching [Tag]/[Address], if presses [Excel conversion], searched data is converted to Excel file.

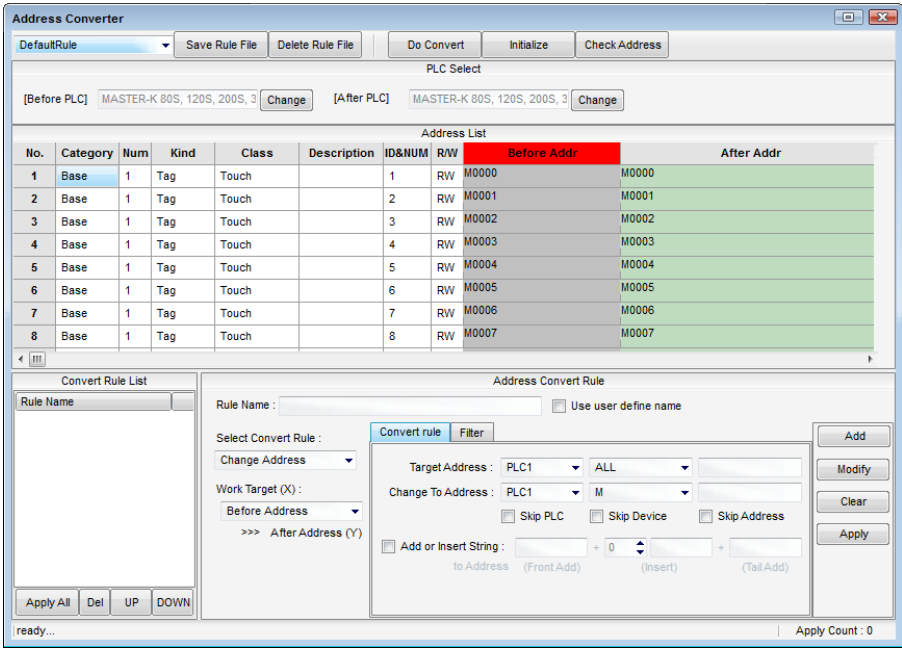
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	No	Screen Name	Tag ID	Type	AddrCnt	X	Y	Width	Height	Image	Text	MEMO	Update Time	
2	1	[SCREEN] New	44	Touch	1	212	233	38	39	N	N		2010-09-03 16:38	
3	2	[SCREEN] New	45	Touch	1	260	233	38	39	N	N		2010-09-03 16:38	
4	3	[SCREEN] New	42	Touch	1	116	233	38	39	N	N		2010-09-03 16:38	
5	4	[SCREEN] New	43	Touch	1	164	233	38	39	N	N		2010-09-03 16:38	
6	5	[SCREEN] New	48	Touch	1	404	233	38	39	N	N		2010-09-03 16:38	
7	6	[SCREEN] New	49	Touch	1	452	233	38	39	N	N		2010-09-03 16:38	
8	7	[SCREEN] New	46	Touch	1	308	233	38	39	N	N		2010-09-03 16:38	
9	8	[SCREEN] New	47	Touch	1	356	233	38	39	N	N		2010-09-03 16:38	
10	9	[SCREEN] New	36	Touch	1	308	184	38	39	N	N		2010-09-03 16:38	
11	10	[SCREEN] New	37	Touch	1	356	184	38	39	N	N		2010-09-03 16:38	
12	11	[SCREEN] New	34	Touch	1	212	184	38	39	N	N		2010-09-03 16:38	
13	12	[SCREEN] New	35	Touch	1	260	184	38	39	N	N		2010-09-03 16:38	
14	13	[SCREEN] New	40	Touch	1	500	184	38	39	N	N		2010-09-03 16:38	
15	14	[SCREEN] New	41	Touch	1	68	233	38	39	N	N		2010-09-03 16:38	
16	15	[SCREEN] New	38	Touch	1	404	184	38	39	N	N		2010-09-03 16:38	
17	16	[SCREEN] New	39	Touch	1	452	184	38	39	N	N		2010-09-03 16:38	
18	17	[SCREEN] New	50	Touch	1	500	233	38	39	N	N		2010-09-03 16:38	
19	18	[SCREEN] Defe	12	Touch	0	24	249	53	53	N	N		2008-11-27 11:47	
20	19	[SCREEN] Defe	13	Touch	0	146	249	53	53	N	N		2008-11-27 11:47	

[Figure. Conversion to Excel file]

44.2 Address converter

Function which searches all address registered in project, edits some of address in the same PLC, or changes all addresses by changing PLC model.

User can change the address in [Address list] in person, edit massive addresses if uses [Address conversion rule].



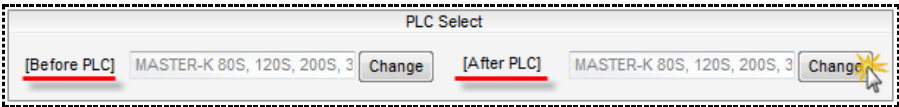
[Figure. Address converter]

44.2.1 PLC Select

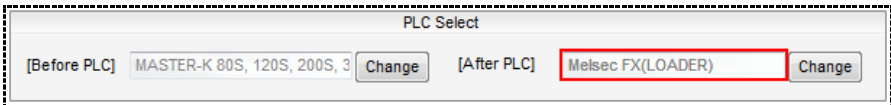
Can set PLC model as currently-used PLC and PLC after change separately.

If executes [Address converter], PLC model name which is set in the project is appeared.

If wants to change to address of other PLC model, presses **Change** button of [PLC to change] and selects model name of PLC.



[Figure. PLC select]



[Figure. PLC change]

44.2.2 Address List

Displays data of all addresses registered in project, can check the changed address only.

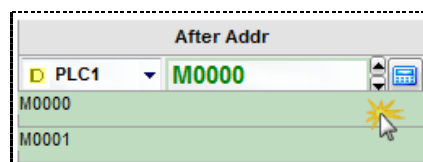
User can edit address in [After Addr] list in person.

Address List									
No.	Category	Num	Kind	Class	Description	ID&NUM	R/W	Before Addr	After Addr
1	Base	1	Tag	Touch		1	RW	M0000	M0000
2	Base	1	Tag	Touch		2	RW	M0001	M0001
3	Base	1	Tag	Touch		3	RW	M0002	M0002
4	Base	1	Tag	Touch		4	RW	M0003	M0003
5	Base	1	Tag	Touch		5	RW	M0004	M0004
6	Base	1	Tag	Touch		6	RW	M0005	M0005
7	Base	1	Tag	Touch		7	RW	M0006	M0006
8	Base	1	Tag	Touch		8	RW	M0007	M0007

[Figure. Address list]

Address list	Explanation
No.	Displays address sequence number in list.
Category	Displays type of screen which address is positioned.
Num	Displays number of screen which address is positioned.
Kind	Displays upper class of tag which address is positioned.
Class	Displays bottom class of tag which address is positioned.
Description	Displays contents of memo registered in Information of tag.
ID&NUM	Displays ID of tag.
R/W	Displays type of address. (READ/WRITE).
Before Addr	Displays address before conversion.
After Addr	Displays address before conversion.

If double-clicks the address displayed in [After Addr] list, can input address manually.



[Figure. Address manual input]

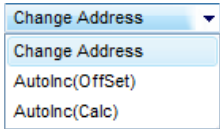
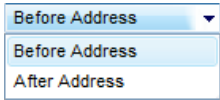
44.2.3 Address Convert Rule

Can convert all address collectively using [Conversion rule] set by user.

Also, can apply it at a time by adding multiple rule to [Conversion rule list].

There are three types, [Change Address], [AutoInc(Offset)], [AutoInc(Calc)] regarding [Conversion rule].

[Figure. Address convert rule]

Address convert rule	Explanation
Rule Name	Sets name of set rule. Can be applied when selects [Rule name user designation].
Select Convert Rule	<p>Selects type of conversion rule from list below.</p>  <p>Change Address – Changes number of address. AutoInc(OffSet) – Adds address in way of OffSet. AutoInc(Calc) – Adds address in way of operation.</p>
Work Target	<p>Selects address list to be applied by set rule.</p> 
Add	Adds set rule to [Convert rule list].
Edit	Edits selected rule from rule list.
Delete	Deletes input rule list.
Apply	<p>Applies set conversion rule.</p> <p>Applied to [Address list] only, not to actual address.</p>

(1) Change address

Changes the address input to [Target address] to the address input to [Address to change].

[Figure. Address change]

Address change	Explanation
Target Address	Selects PLC number and address name to change and inputs the address.
Change Address	Changes [Target address] and input address to apply.
Skip PLC	Changes address name and address value disregarding PLC number.
Skip Device	Changes PLC number and address value disregarding address number.
Skip address	Changes PLC number and address name disregarding address value.
Add or Insert String	Adds character line to address or insert it in the middle of address.

As figure above, if inputs [ALL, 100] to [Target address], inputs [M, 200] to [Address to change], address name is changed to M and 100 is changed to 200 against all address including all address names and 100.

- **Wild characters**

Can change address using wild characters.

When address has [M0100, M0101, M0102...M0199], if inputs [M, 01**] to [Target address] and inputs [K, 02**] to [Address to change], they are changed to [K0200, K0201, K0202...K0299].

- **Add/Insert String**

Adds characters before/after changed address, or inserts them in the middle of address.

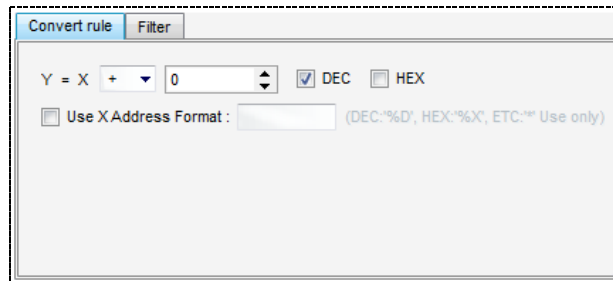
[Figure. Add/insert character line]

Add/Insert String	Explanation
Front Add	Inputs characters before address.
Insert	Inputs characters to insert in the middle of address.
	Inputs digits to insert characters (based front digits).
Tail Add	Inputs characters to add after address.

When it is set as above figure, if changes [M0100] to [M0200], it is changed to [MA02B00C] due to added characters.

(2) AutoInc(OffSet)

Adds address automatically using Offset method. Using $[+, -, *, /]$ operation such as $Y(\text{changed address}) = X(\text{Target address}) + N$, can increase or decrease address.



[Figure. Automatic address increase, Offset method]

- Use X Address Format

When address consists of characters and numbers in specific PLC, sets format and uses it after changing numbers only.

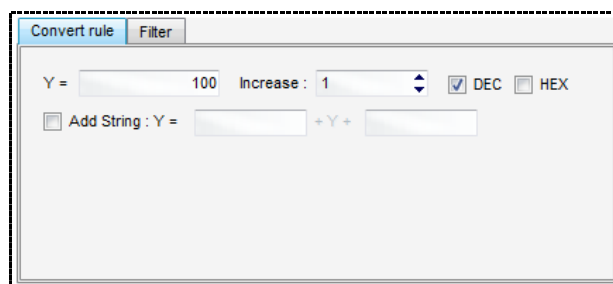


[Figure. Use address format X]

If address is [INPUT100AB] and inputs [*****%03D**] to [Address format x use] and changes it, number part of address is increased/decreased.

(3) AutoInc(Calc)

As $Y(\text{changed address}) = \text{constant} + N$, user designates the value in fixed way and applies increased/decreased address numbers to all address.

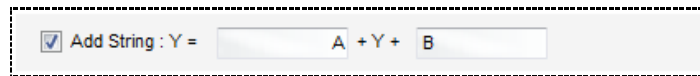


[Figure. Automatic address increase, operation method]

If sets above figure, all addresses are applied collectively because of adding 1 each from 100. If inputs -1 , address is applied by -1 each.

- Add String

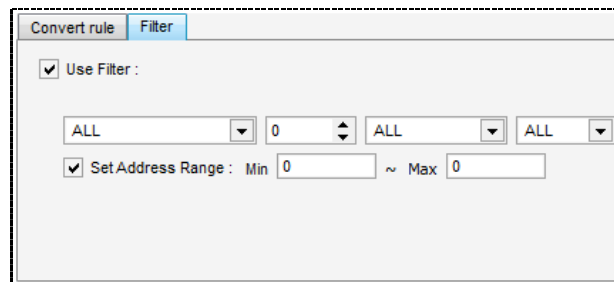
Adds characters before/after changed address.



[Figure. Add character line]

(4) Filter

Used when limits target address to change.

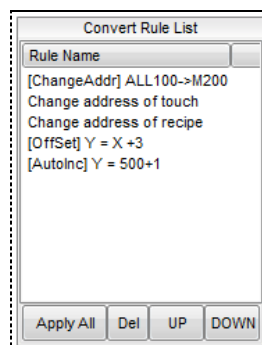


[Figure. Filter]

Filter	Explanation
Category	Selects screen type to limit change.
Number	Inputs number of screen.
Kind	Selects type of tag to limit change.
Device	Selects type of address name to limit change.
Set Address Range	Sets range of address to limit change.

44.2.4 Convert Rule List

Can apply to all by adding multiple rules. Registered rule is applied from above in sequence.



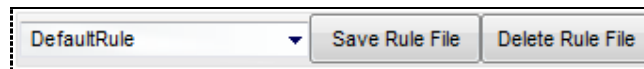
[Figure. Convert rule list]

Convert rule list	Explanation
Apply to all	Converts address applying all registered rule list.
Delete	Deletes selected rule list.
Up	Moves up sequence number of selected rule item.
Down	Moves down sequence number of selected rule item.

44.2.5 Save conversion rule and address conversion

(1) Save conversion rule

Saves conversion rule registered in [Conversion rule list] as file, or imports or deletes previously-saved rule files. Route of saving rule file is [C:\WProgram Files\WM2I Corp\WXDesignerPlus\WRULE].

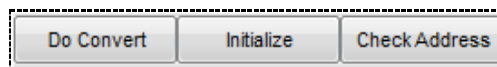


[Figure. Save conversion rule]

Save conversion rule	Explanation
Select rule file	Selects saved rule file.
Save rule file	Saves rule registered in [Conversion rule list] as file.
Delete rule file	Deletes selected rule file.

(2) Address conversion

Applies and converts conversion rule registered in [Address list] to actual address.

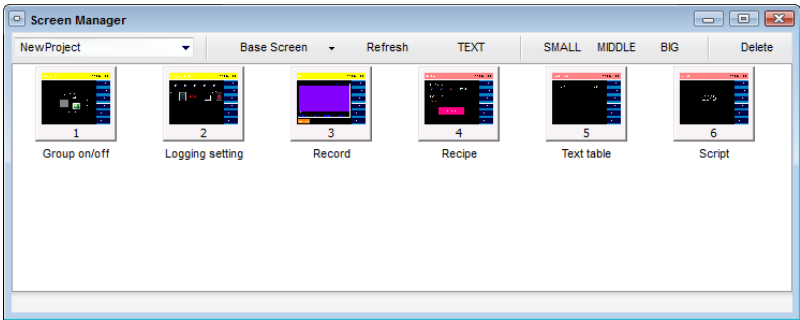


[Figure. Address conversion]

Address conversion	Explanation
Do Convert	Applies changed address from [Address list] actually.
Initialization	Initializes conversion applied to [Address List].
Check Address	Checks if addresses are OK.

44.3 Screen manager

Can inquire and check all screens included in project, and can copy, delete and rename the screens.

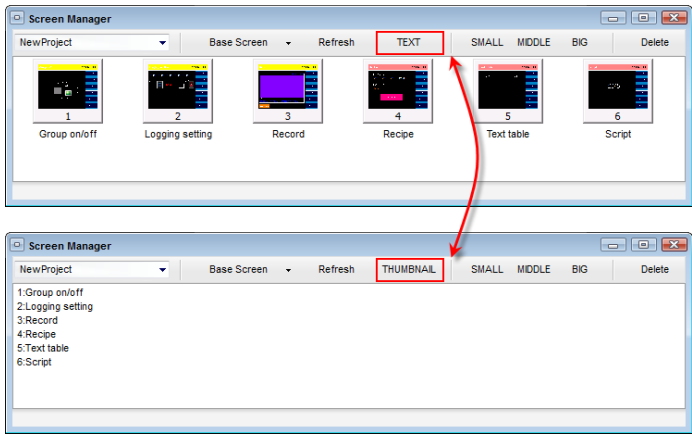


[Figure. Screen manager]

Screen manager	Explanation
Project	When uses multiple projects, selects project to appear in screen list.
Base screen	Can select type of screen to display in screen list from [Base screen], [Window screen] and [Subscreen].
Text	Displays screen with list written or preview image.
Small, Mid, Large	Controls size of preview image.
Delete	Deletes selected screen.

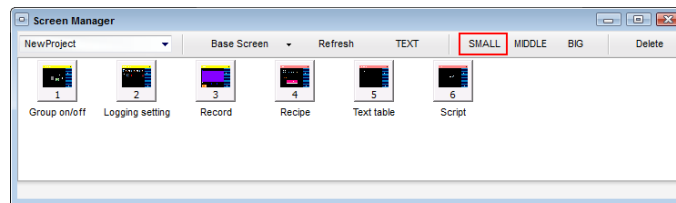
44.3.1 View

When uses multiple projects, can select project to display in screen and type of screen(base screen, window screen and subscreen). Can display screen in list with character line or small screen which is preview image.

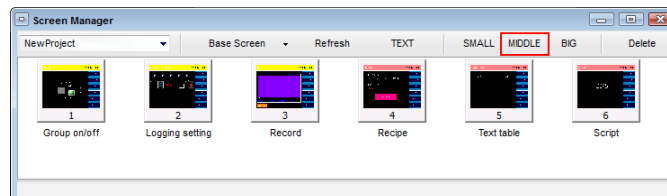


[Figure. Display conversion to character line or preview image]

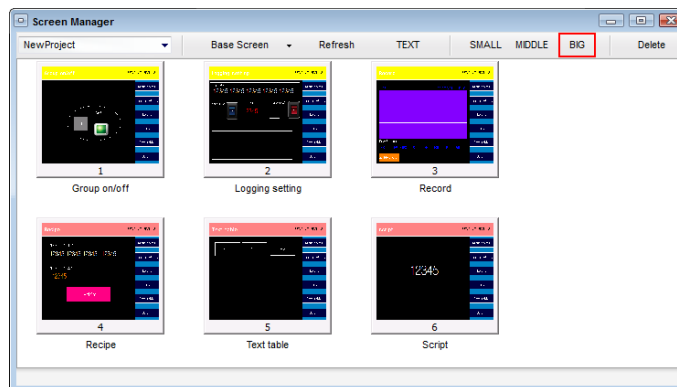
When displays in preview, can control size of image in small, medium or large as below figures.



[Figure. Displays in small size]



[Figure. Displays in normal size]

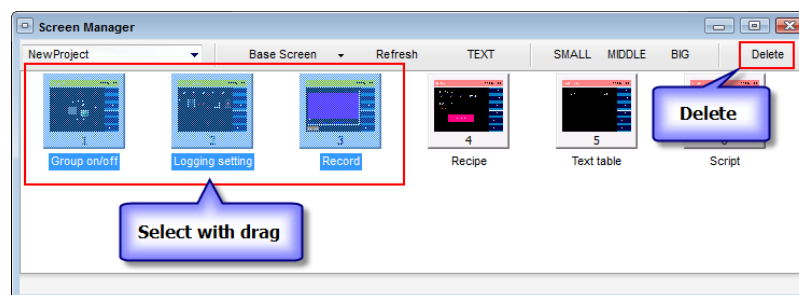


[Figure. Displays in large size]

44.3.2 Edit

(1) Delete screen

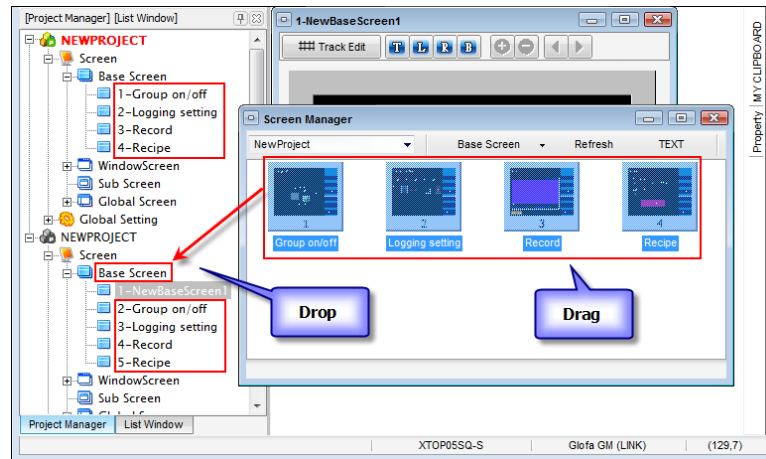
Selects screen to delete in screen list and presses delete. Can select/release additionally using Ctrl+mouse click and dragging.



[Figure. Delete screen]

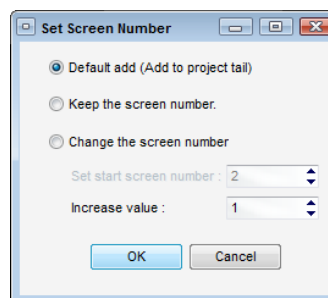
(2) Copy screen

Selects screen to copy in multiple projects, drag, drops and pastes desired [Screen type] of project in [Project manager].



[Figure. Copy screen]

If does [Drag & drop], screen which's screen was copied, pasted and able to be numbered is appeared.

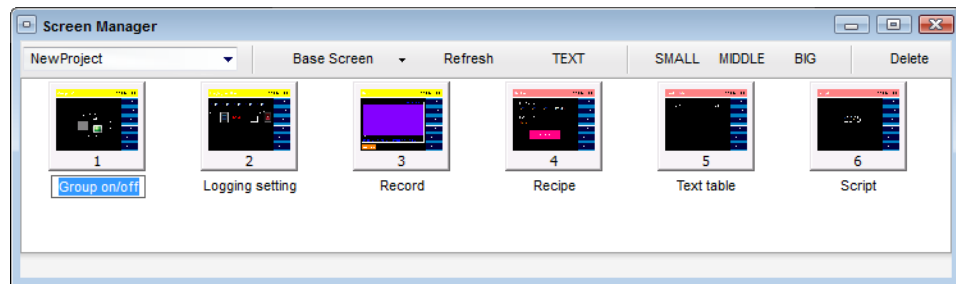


[Figure. Set Screen Number]

Set Screen Number	Explanation
Default add	Adds 2 nd biggest number out of screen numbers of project.
Keep the screen number	Keeps screen number of copied project.
Change the screen number	Adds it as start screen number designating start screen number.
Set start screen number	Used in case of selecting [Change screen number], start screen number to change and apply.
Increase value	Increasing interval of screen number of copied screen because multiple screens are copied.

(3) Rename screen name

When the screen is selected, if double-clicks name of the screen again, screen name can be changed.



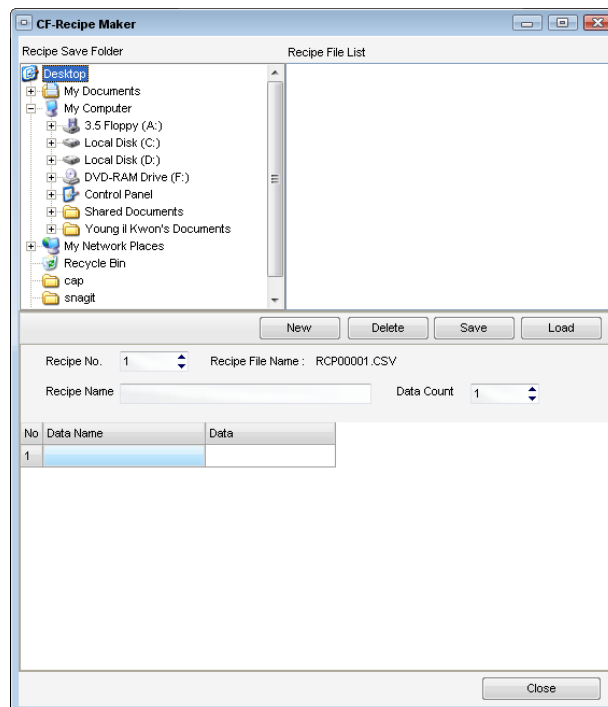
[Figure. Rename screen name]

44.4 CF-Recipe Maker

Function which draws up parameter block in person used in recipe function without saving it internal memory of touch screen main body, but in order to save it in CF memory.

Drawn parameter block is created as CVS file and includes one parameter block per each file. Created recipe file can be used by saving it in [-HMI-WRCP] folder of CF memory.

(Refer to [7.6.8] of [Chapter 7] and [40.6] of [Chapter 40] regarding how to use CF-recipe.)



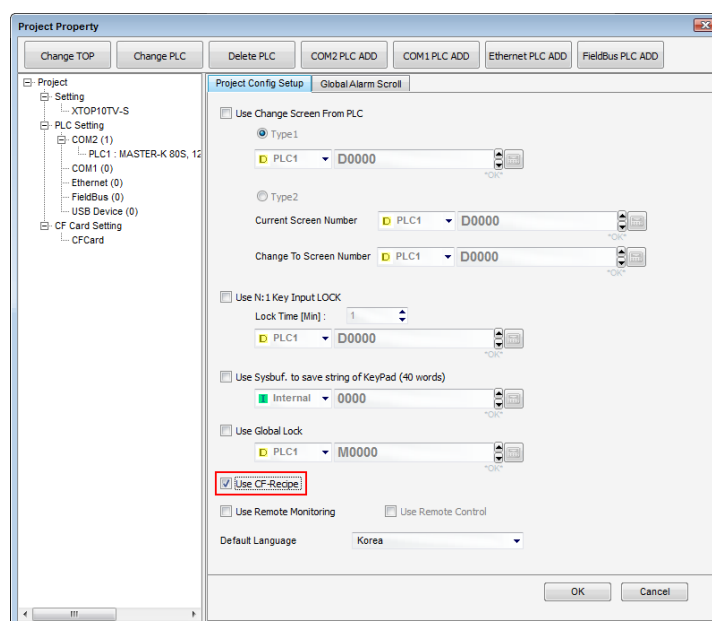
[Figure. CF-Recipe Maker]

44.4.1 Setting details before using CF-recipe

In order to use parameter block created in [CF-Recipe Maker] in touch screen main body, first sets [Project property] and [Recipe setting].



(1) Project Property

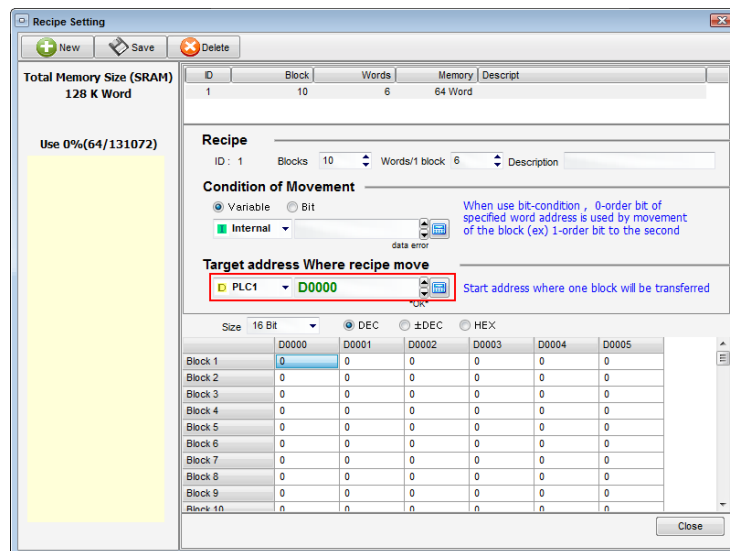
So that touch screen main body can recognize recipe files in CF memory, checks [Use CF-Recipe] in [Project]–[Project Property] of menu as below figure.



[Figure. Use CF-Recipe]

(2) Recipe Setting

Creates recipe newly by pressing  button in [Project]–[Recipe setting] of menus, inputs address to use to [Target address when moving] and saves it by pressing  button.



[Figure. Target address when recipe is moving]

44.4.2 Create recipe file

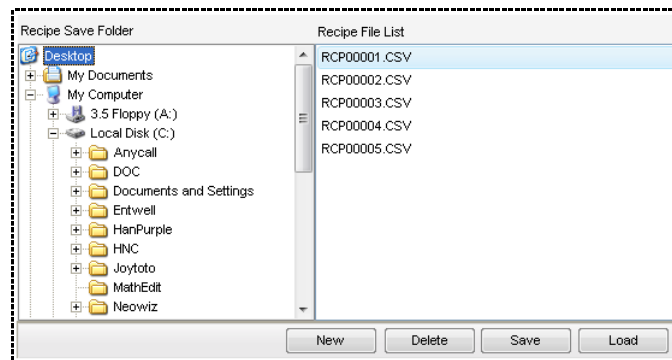
(1) Create parameter block

Recipe No. 1		Recipe File Name : RCP00001.CSV	
Recipe Name [1]-Recipe		Data Count 5	
No	Data Name	Data	
1	Recipe Data01	10	
2	Recipe Data02	20	
3	Recipe Data03	30	
4	Recipe Data04	40	
5	Recipe Data05	50	

[Figure. Create parameter block]

Parameter block	Explanation
Recipe number	Inputs recipe number. Can input 1~65535 and applies it to file name.
Recipe file name	Displays recipe file name which is created automatically.
Name of recipe	Inputs name of recipe.
Total No.of data	Inputs number of blocks(word) to save in recipe file.
No.	Displays number of parameter block.
Data Name	Inputs name of parameter block.
Data	Inputs data value to use as parameter.

(2) Creat recipe file

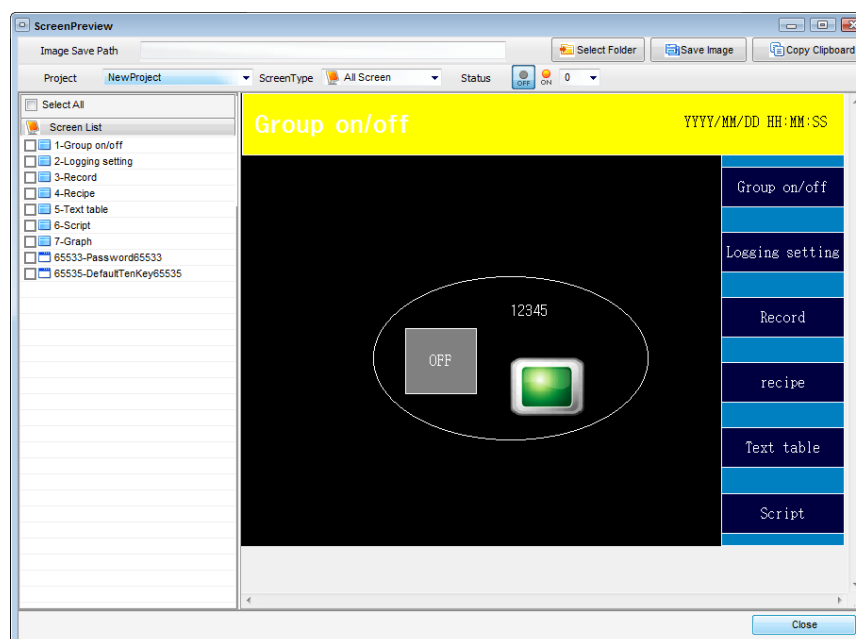


[Figure. Create recipe file]

File creating	Explanation
Recipe Save Folder	Selects folder to save recipe file.
Recipe File List	Displays recipe file saved in folder.
New	Initializes all items drawn in [Create parameter block].
Delete	Deletes selected file in [Recipe file list].
Save	Saves all files drawn in [Create parameter block] as file.
Load	Imports files selected from [Recipe file list].

44.5 Screen Preview

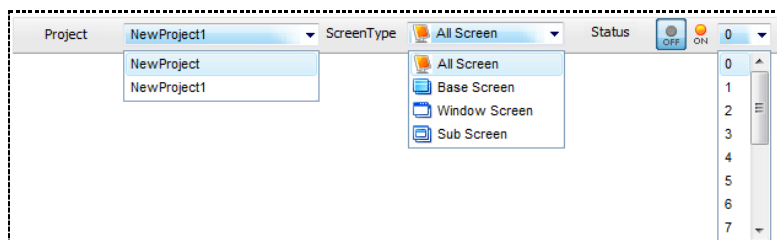
Function which shows each screen included in project through preview and can save it as image.



[Figure. Screen Preview]

44.5.1 Screen preview options

Displays screen selected from left screen list at right. When uses multiple projects, user can select project to inquire, displays entire screen in list or displays it by divided screens such as base screen, window screen and subscreen. Also, can displays address status of tag included in screen with ON/OFF status or word value 0~15.



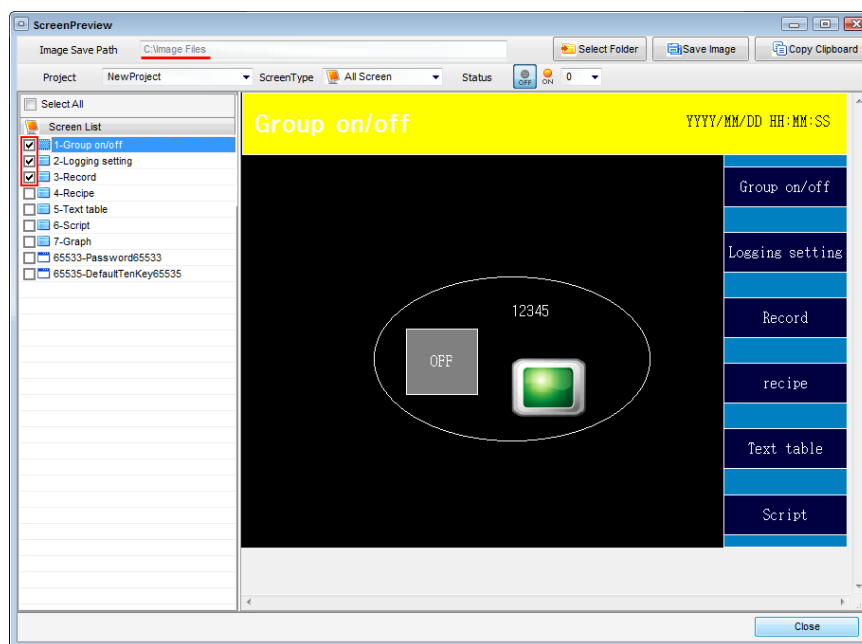
[Figure. Screen preview options]

44.5.2 Save screen as image file

Saves screen displayed preview as bitmap image in the route user designated. Checks screen to convert it to screen, designate saving route and presses [Saves Image] button.

(1) Select screen

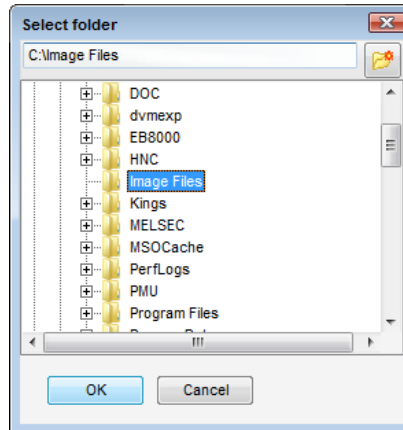
Checks checkbox to save in screen list as image, and selects it. Using [Selects All] checkbox can select all or release.



[Figure. Select image]

(2) Select Folder

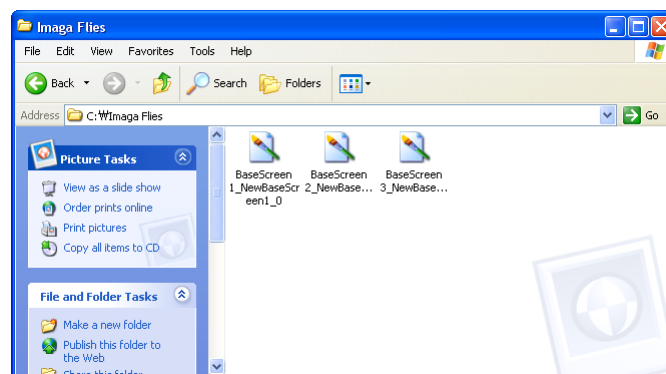
Sets route of folder to save images. If presses [Select Folder] button, selection window is appeared as below figure. Selects saving folder and press [OK] button



[Figure. Designate route to save images]

(3) Save image, copy to clipboard

After designating image saving route, the selected image is saved if presses [Save Image] button.

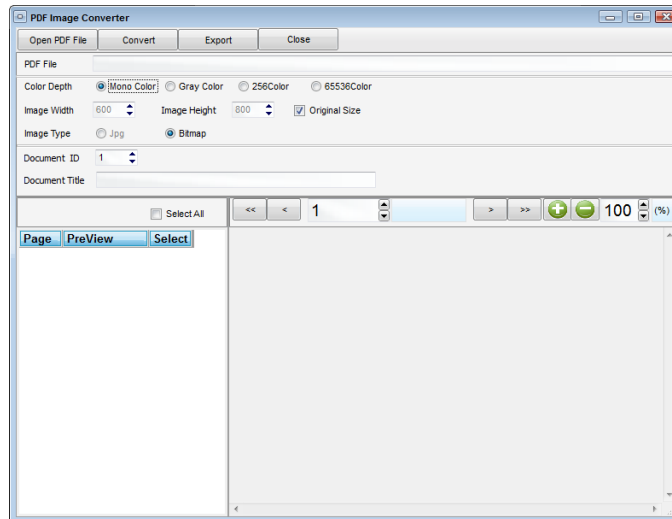


[Figure. Saved image]

If presses [Copy Clipboard], selected images can be copied to clipboard and can be pasted to document or image tool. As for [Copy Clipboard], has to select one image only.

44.6 PDF Image Converter

Function which converts PDF files to bitmap images and creates index files so that they can be used in [DocViewer] of tag. In order to use [DocViewer], has to use after saving converted bitmap images and index files in CF memory card. Can control color level and image size of images. Selects and executes [Tool]–[PDF Image Converter] of menu.

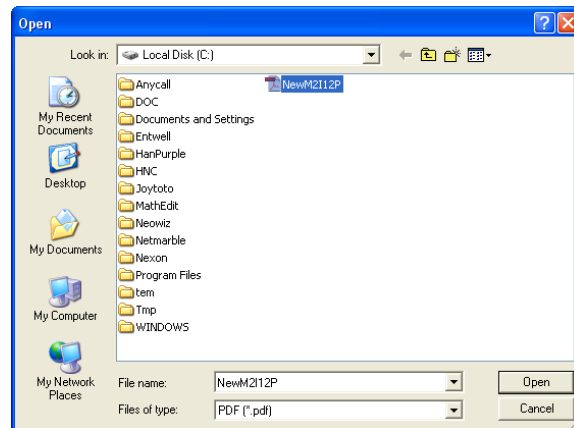


[Figure. PDF Image Converter]

Image converter	Explanation
Open PDF File	Selects PDF file saved in PC.
Convert	Applied when color level or image size is change.
Export	After conversion is completed, saves selected image to PC.
Close	Closes PDF image converter.
PDF File	Displays the route of currently–open PDF file.
Color Depth	Selects one from Mono Color, Gray Color, 256Color, 65536Color. As color level is higher, size of image file is bigger.
Image Height	Inputs height of image.
Image Width	Inputs width of image.
Image Type	Selects image format to save. (Currently bitmap is supported only.)
Document ID	Inputs folder number created when saves image. (1~256)
Document title	Inputs title of document to save in index file.

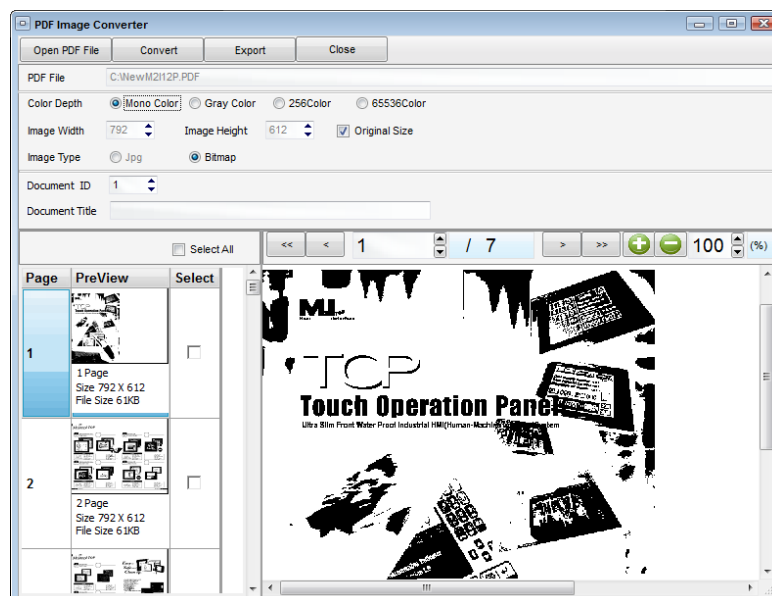
44.6.1 Convert PDF file

If presses [Open PDF File], file selecting screen is appeared. Folder and PDF files are appeared. Selects PDF file to convert, presses [Open] button.



[Figure. Selects PDF file]

If completes selecting PDF file, it is appeared as matched to initial setting(Mono color, original size)in page list of [PDF image converter] and preview screen.



[Figure. Convert PDF file]

There are 4 types regarding depth of color, Mono Color, Gray Color, 256Color and 65536Color. Depth of color gets higher, size of converted image file gets bigger.

After input color type and image size to use, presses [Convert] button. When wants to check the converted image, clicks image at left page list or presses next page button at top of preview screen.



[Figure. Mono Color]



[Figure. Gray Color]



[Figure. 256 Color]

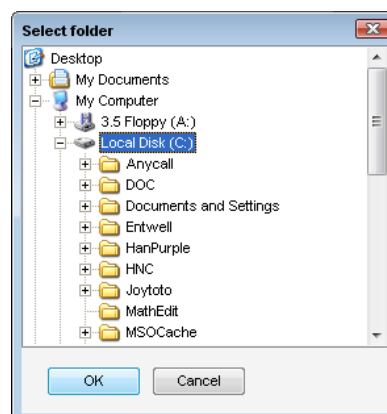


[Figure. 65536 Color]

44.6.2 Export image

Before exporting image, inputs document ID and document title. Can input 1~256 as document ID, marked in folder name in which image is created. (Document ID: 1 → Folder name: DOC1)

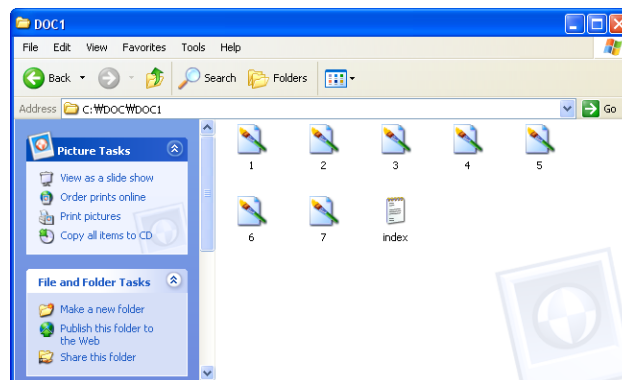
After checking checkbox of image to save in left page list, if presses [Export] button, selecting folder screen is appeared. Can selects/releases all with checking [Select all] checkbox.



[Figure. Select saving folder]

If selects folder to save and presses [OK] button, DOC folder is created in the folder and image and index file are saved. When inputs 1 as document ID and saves it in [C:W], the route of image and index

file becomes [C:\WDOC\WDOC1]. Saved folder has not to be changed and used as it is because it is the code to connect image saved in CF memory with DocViewer tag.

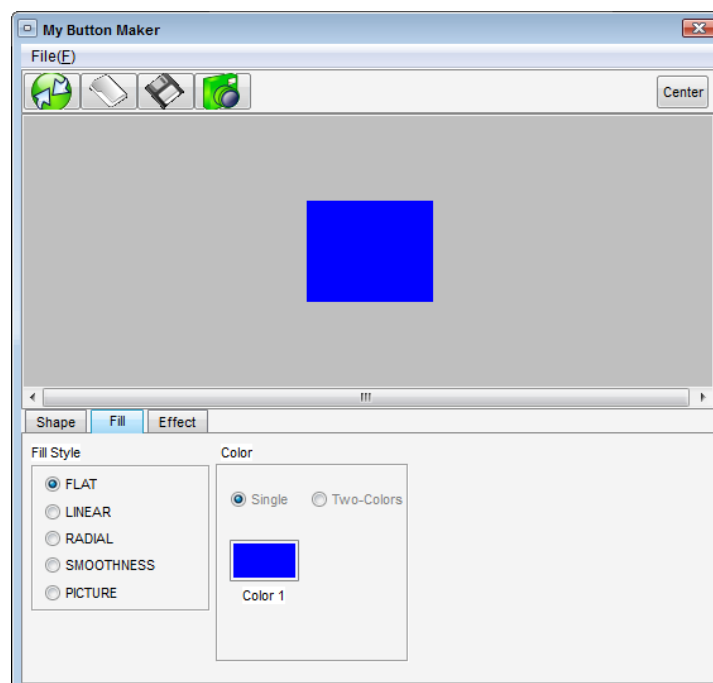


[Figure. Saved image and index file]

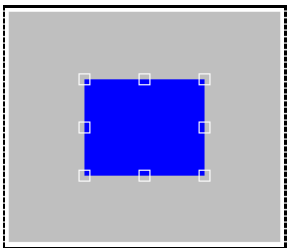
44.7 My Button Maker

[My Button Maker] is the function which user selects desired shape of figure and making his/her own button image by applying shadow effect or patterns. Created image is save as MBS(My Button Shape) format and can be registered and used in [Image Library]. MBS image has no quality damage though saved with different size not like bitmap image.

[My Button Maker] can be executed in [Image Library] too.



[Figure. My Button Maker]

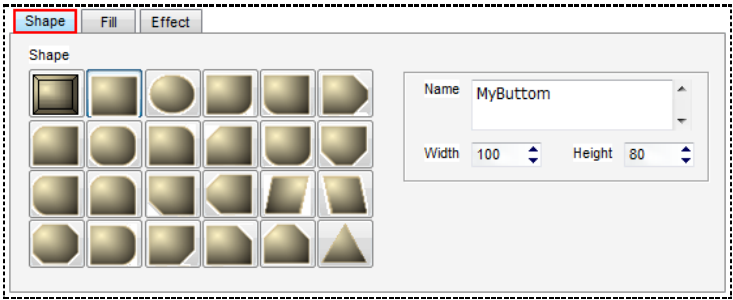


[Figure. MBS image editing screen]

Can adjust the size of figure in edit screen by using moves of mouse or tracker. If presses [Center] of [My Button Maker] top, figure is moved to very center of edit screen.
Decorates the image with [Shape], [Fill] and [Effect] pages at bottom.

(1) Shape

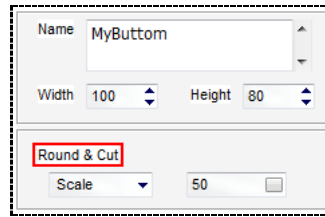
Sets shape and size of figure.



[Figure. Shape]

Shape page	Explanation
Shape	Selects shape of figure to use.
Name	Inputs name of MBS image.
Width	Displays width of currently-edited figure and can edit it in person.
Height	Displays height of currently-edited figure and can edit it in person.

[Round & Cut] setting item is appeared along shape of figure, can control size of frame shape by selecting [Scale] or [Fixed].
[Scale] sets frame size to entire size of figure in ratio, [Fixed] sets frame size to pixel unit regardless size of figure.



[Figure. Round & Cut]

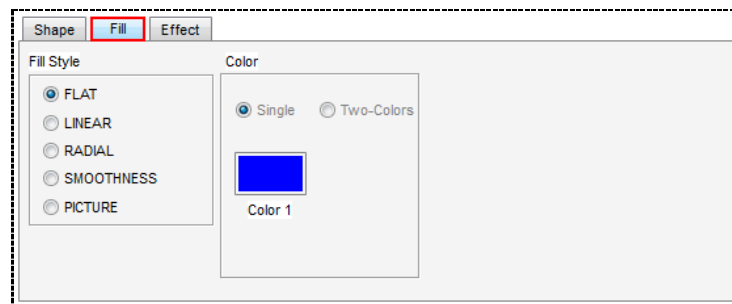
(2) Fill

Can fill inside of figures in various way.

Additional setting items are appeared if selects type of fill in [Fill Style].

● FLAT

Expresses inside of figures with a single color. If presses [Color 1], can set inside color.

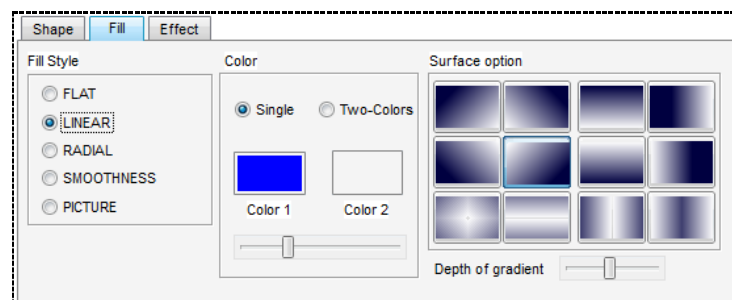


[Figure. FLAT]

● LINEAR

It is a color changing effect along straight line and can control light and darkness and depth.

If selects [Two-Color], can set [Color 2], and can express inside of figure with two colors.

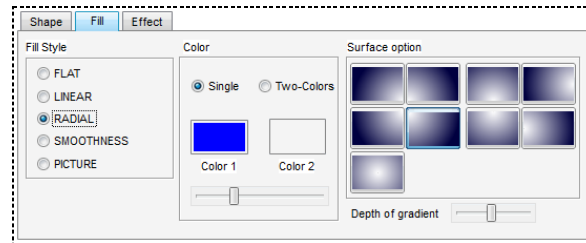


[Figure. LINEAR]

- **RADIAL**

It is spreading-color effect and can control light and darkness and depth.

If selects [Two-Color], can set [Color 2], and can express inside of figure with two colors.

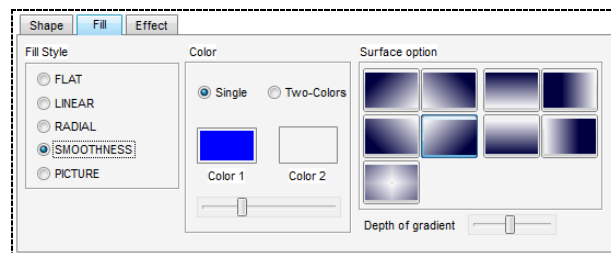


[Figure. RADIAL]

- **SMOOTHNESS**

It is spreading-color effect based on frame and can control light and darkness and depth.

If selects [Two-Color], can set [Color 2], and can express inside of figure with two colors.

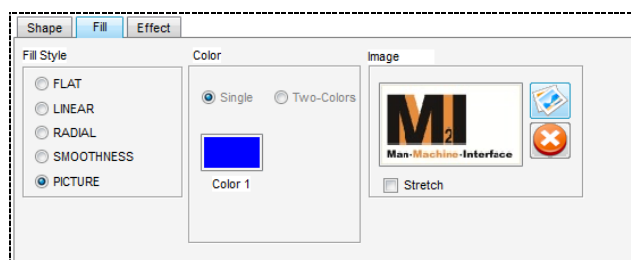


[Figure. Smoothness]

- **PICTURE**

Can insert image saved in PC to inside of figure.

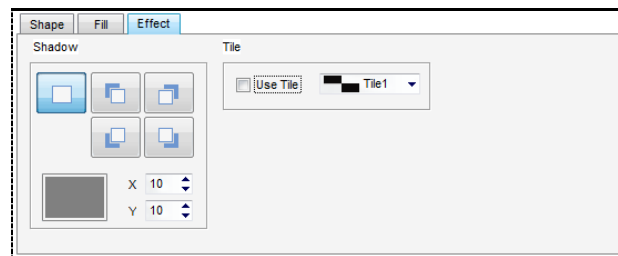
Sets background color of image with [Color 1], and can fill entire figure with the image if presses [Stretch].



[Figure. PICTURE]

(3) Effect

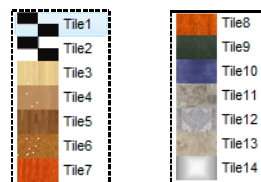
Give tile effect to inside of figure, or can decorates figure using shadow.



[Figure. Effect]

[Shadow] effect can select direction of shadow in above list of picture, and can set X(width) and Y(height).

Checks [Use Tile] of [Tile], selects one from tile list below and applies it.



[Figure. Tile list]

44.7.2 File menu

Can save the edited MBS images to PC or import saved images.

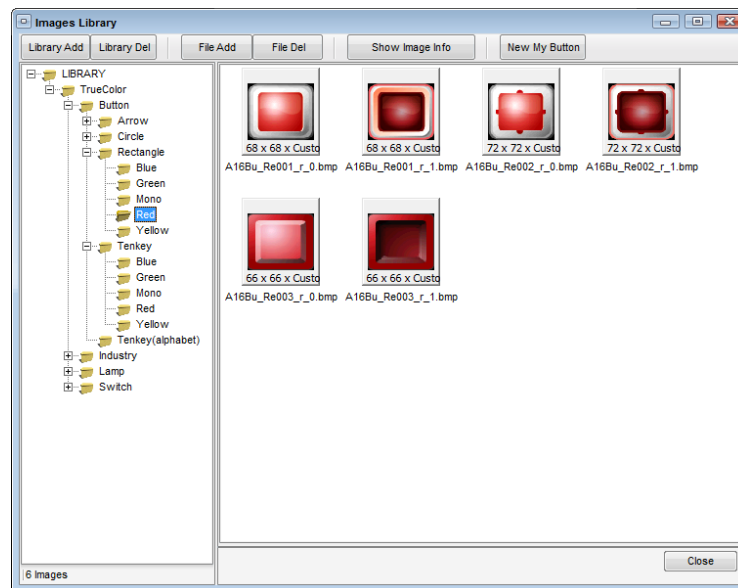
If presses [Menu] of top of [My Button Maker], below list is appeared.

Menu	Explanation
New button	Initialize figure to before-edit.
Open	Imports MSB image.
Save	Saves MBS image.
Save as	Saves MBS image with other name.
Save image	Saves the edited figure as bitmap image.
Exit	Exit [My Button Maker].

44.8 Image Library

[Image Library] shows bitmap images which are basically provided from XDesignerPlus program and enables it to be registered in project. Also, user can add new image and register newly-added images in project.

Uses [Image Library] when registers images in Touch tag or lamp tag.



[Figure. Image Library]

44.8.1 Composition of Image Library

As a structure of file manager at left, show folder of image.

At right, shows selected images and images contained in selected folder.

There are [Library Add/Del], [File Add/Del], [Show Image Info] and [New My Button] at top.

(1) Folder structure

If program is installed, image folder is in the installed route.

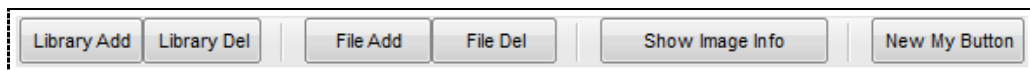
Basic route is [C:\WProgram Files\WM2\ Corp\WXDesignerPlus\Wlibrary\WTrueColor].

Image folder provides with [Button], [Lamp], [Switch] and [Industry].

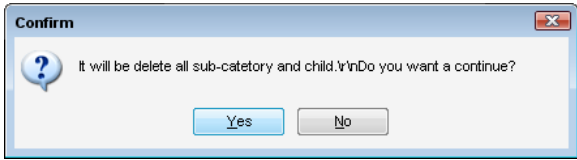
Image folder	Explanation
Button	Button image It consists of 5 types of [Arrow], [Circle], [Rectangle], [Tenkey], [Tenkey(alphabet)(text keypad)].
Lamp	Lamp image of lighting/putting out. It consists of [Circle], [Rectangle] and [Etc].
Switch	Image of ON/OFF switch. It consists [Toggle], [Selector] and [Etc].
Industry	Images of industrial parts. It consist of [Pipe] and [Valve], and size of [Pipe] consists of [Pipe001], [Pipe002] and [Pipe003] along size.

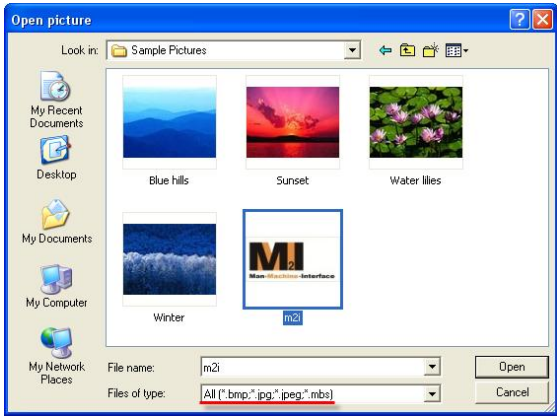
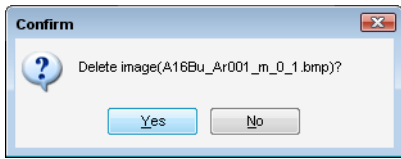
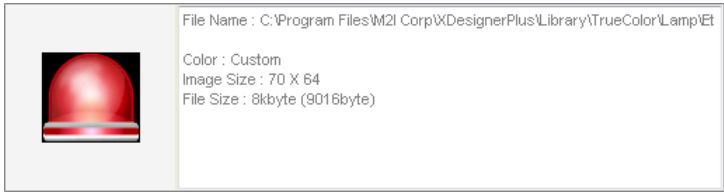
In each folder, though they are the same pictures, it is divided into [blue], [green], [mono], [red] and [yellow] along color.

(2) Upper buttons



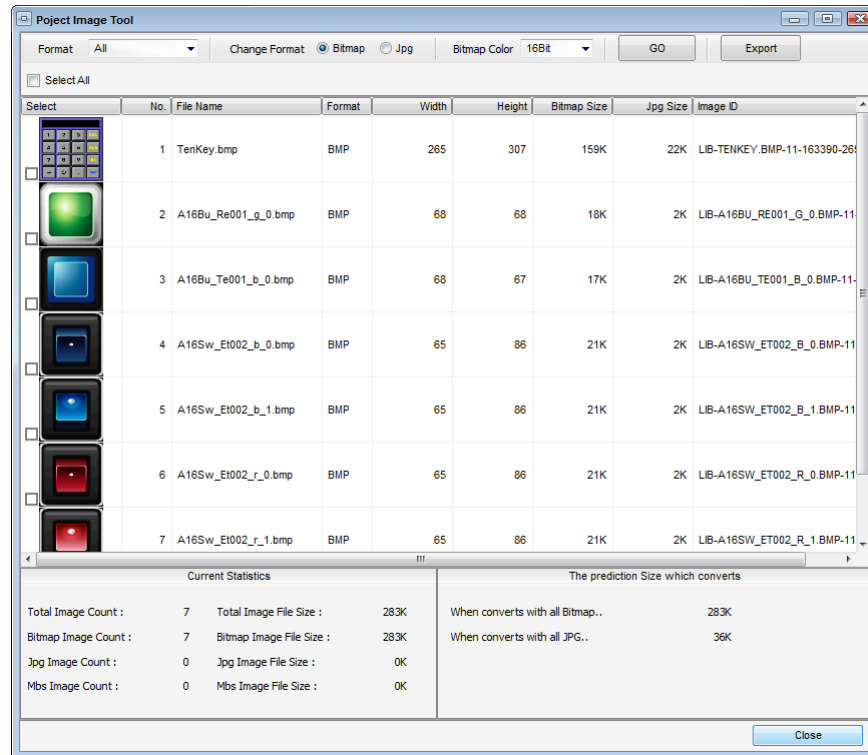
[Figure. Upper buttons]

Button 버튼	Explanation 설명
Library Add	Adds new folder in selected folder.
Library Del	Deletes selected folder. Following confirm message is appeared, when folder is deleted because subfolder and images in the folder are deleted together. 
File Add	Adds new images in selected folder. If adds image button, [Open picture] window which selects images to add is appeared. Type of images to register is [*.bmp], [*.jpg], [*.jpeg] and [*.mbs].

	
File Del	<p>Deletes selected images.</p> <p>If presses image delete button, following confirm message is appeared.</p> 
Show Image Info	<p>Displays data of selected image at right bottom.</p>  <p>Can recognize saving route, color, image size and file size of image.</p>
New Make Button	<p>Enables new button to be created because My Button Maker is executed.</p> <p>My Button Maker is the same as executing [My Button Maker] of [Tool] menu.</p>

44.9 Project Image Tool

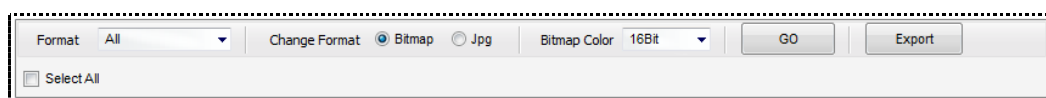
[Project Image Tool] shows data of all image files registered in project under use currently, can convert image format or save images to PC.



[Figure. Project Image Tool]

44.9.1 Image conversion and save

Can select images enumerated in list and save it after conversion to the format set as below figure.




[Figure. Image conversion and saving]

Upper menu	Explanation
Format	<p>Selects format of image enumerate in list from below list.</p> <div> <div>All</div> <div>Bmp</div> <div>Jpg</div> <div>Mbs</div> </div>
Change Format	Selects format to convert images from [Bitmap] and [Jpg].
Bitmap Color	Selects quality of bitmap from below list.

	<div>8Bit</div> <div>16Bit</div>
Go	Converts selected images to the format user sets.
Export	Saves selected images in PC.
Select all	Selects all images in list.

44.9.2 Image list

Select	No.	File Name	Format	Width	Height	Bitmap Size	Jpg Size	Image ID
	1	TenKey.bmp	BMP	265	307	159K	22K	LIB-TENKEY.BMP-11-163390-265-307_0
<input type="checkbox"/>	2	A16Bu_Re001_g_0.bmp	BMP	68	68	18K	2K	LIB-A16BU_RE001_G_0.BMP-11-9304-68...
<input type="checkbox"/>	3	A16Bu_Te001_b_0.bmp	BMP	68	67	17K	2K	LIB-A16BU_TE001_B_0.BMP-11-9168-68...
<input type="checkbox"/>	4	A16Sw_Et002_b_0.bmp	BMP	65	86	21K	2K	LIB-A16SW_ET002_B_0.BMP-11-11408-6...
<input type="checkbox"/>	5	A16Sw_Et002_b_1.bmp	BMP	65	86	21K	2K	LIB-A16SW_ET002_B_1.BMP-11-11408-6...
<input type="checkbox"/>	6	A16Sw_Et002_r_0.bmp	BMP	65	86	21K	2K	LIB-A16SW_ET002_R_0.BMP-11-11408-6...

[Figure. Image list]

Part	Explanation
Select	Can select image with showing.
No.	Displays registering sequence number of image.
File Name	Displays name of image file.
Format	Displays format of image.
Width	Displays width of image.
Height	Displays height of image.
Bitmap Size	Display data size when the image is bitmap format.
Jpg Size	Displays data size when the image is jpg format.
Image ID	Displays ID information of image.

44.9.3 Image statistics and information

Displays statistics of image registered in project under use and expected data size when converts all images.

Current Statistics			
Total Image Count :	7	Total Image File Size :	283K
Bitmap Image Count :	7	Bitmap Image File Size :	283K
Jpg Image Count :	0	Jpg Image File Size :	0K
Mbs Image Count :	0	Mbs Image File Size :	0K

[Figure. Current statistics]

The prediction Size which converts	
When converts with all Bitmap..	283K
When converts with all JPG..	36K

[Figure. The prediction Size which converts]

44.10 W-Satation Setup

When uses HTOP in wireless, it is the function to set wireless network of W-Station.

If connects W-Station with PC and presses [Read], displays network setting set in W-Station currently, if user sets wireless network in person and presses [Write], setting is transmitted to W-Station.

W-Station Setup 1.0.0.0

W-STATION

W-LAN MODE: ☒ Ad Hoc mode ☐ Infrastructure mode (AP Client Mode)

IP ADDRESS: 192 168 0 50

SUBNET MASK: 255 255 255 0

GATEWAY: 192 168 0 1

SSID: W-Station_0 0

SECURITY: None

PASSWORD:

PLC

PLC IP: 0 0 0 0

READ PORT: 0

WRITE PORT: 0

PROTOCOL: ☒ UDP ☐ TCP

Read Write

[Figure. W-Satation Setup]

44.10.1 W-Station Setup

W-Station	Explanation
W-LAN MODE	Selects the mode out of [Ad Hoc mode] and [Infrastructure mode]. [Ad Hoc mode] is a wireless way of mutual communicating between HTOP and W-Station directly each other, [Infrastructure mode] is a wireless way of communicating between HTOP and W-Station by installing AP.
IP ADDRESS	Inputs IP address allocated in W-Station.
SUBNET MASK	Inputs subnet mask allocated in W-Station.
GATE WAY	Inputs gateway allocated in W-Station.
SSID	Inputs latter numbers only because network name is fixed.
SECURITY	Selects password method of wireless network.
PASSWORD	Inputs password.

44.10.2 PLC setting

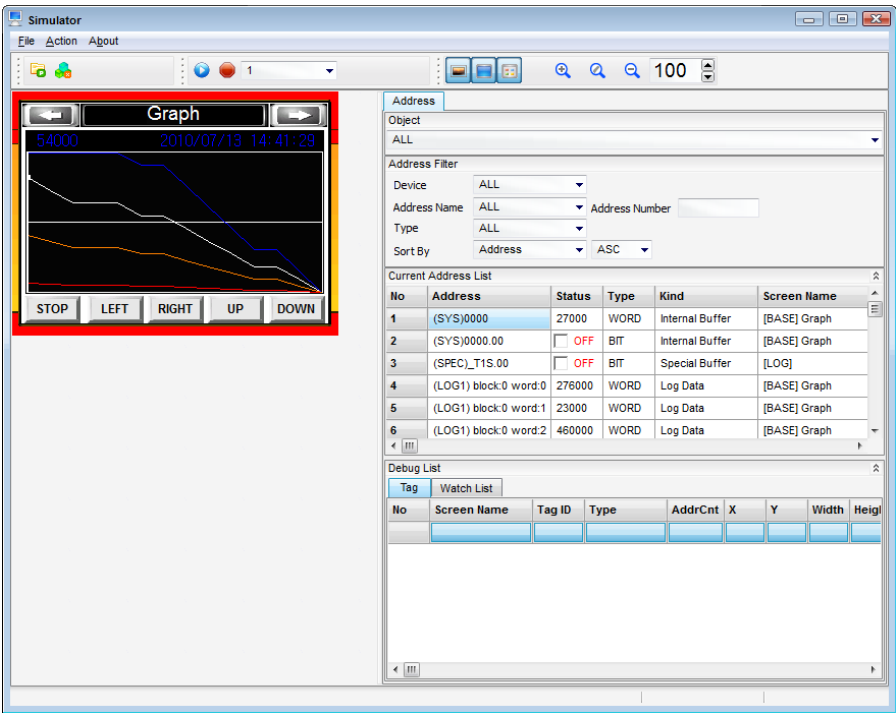
When W-Station is connected with PLC by [Ethernet] communications, sets it same as network setting of the PLC.

PLC	Explanation
PLC IP	Inputs IP address set in PLC.
READ PORT	Inputs number of read port.
WRITE PORT	Inputs number of write port.
PROTOCOL	Selects type of protocol out of [UDP] and [TCP].

44.11 Simulator

[Simulator] is the function which operates projects with PC virtually without transmitting it to touch screen.

If clicks screen with mouse cursor, it operates the same as touches actual touch screen, right address list displays status or values of address, and can be set by user in person.



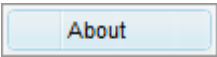

[Figure. Simulator]

44.11.1 Composition of menu and toolbar



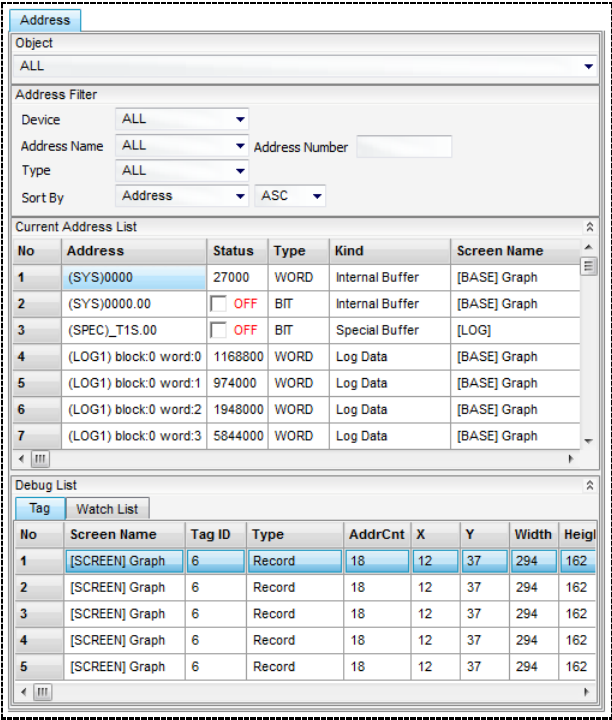
[Figure. Upper menu]

Upper menu	Explanation
File	There are [Open] which opens project file and [Close] which terminates Simulator. <div><div><div>Open</div><div>Close</div></div><div></div></div>
Operation	There are [Run] which start Simulator and [Pause] which stops the operation, and can select number of screen to display. <div><div><div>Run</div><div>Pause</div></div><div></div></div>

About	<p>If presses [About], can check program version of Simulator.</p> 
Screen control	<p>Can select [Background display], [Display figure] and [Tag display] as below, and can [enlarge/shrink] size of screen.</p> 

44.11.2 Address list

View all address registered in project which is executed in Simulator, and can apply it to Simulator by setting status or value of address.



[Figure. Address list]

(1) Object

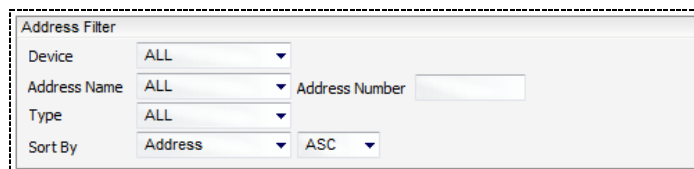
If select type of tag from list, displays the address used in the tag of address list.



[Figure. Object]

(2) Address Filter

Sets the range of address displayed in address list.



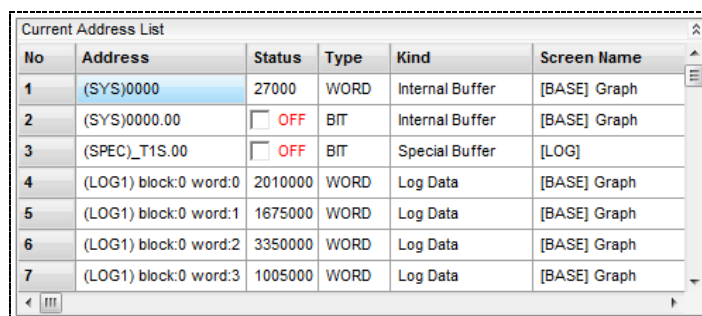
[Figure. Filter]

Address Filter	Explanation
Device	Selects equipment of address to display in list.
Address Name	Selects name of PLC address to display in list.
Address number	Inputs number of address to display in list.
Type	Selects type of address(Bit, Word) to display in list..
Sort by	Sorts displayed address by type.

(3) Current Address List

Enumerate detailed information of address in list.

Status of address is displayed in [Status] in real-time, and user can change the value.



No	Address	Status	Type	Kind	Screen Name
1	(SYS)0000	27000	WORD	Internal Buffer	[BASE] Graph
2	(SYS)0000.00	<input type="checkbox"/> OFF	BIT	Internal Buffer	[BASE] Graph
3	(SPEC)_T1S.00	<input type="checkbox"/> OFF	BIT	Special Buffer	[LOG]
4	(LOG1) block:0 word:0	2010000	WORD	Log Data	[BASE] Graph
5	(LOG1) block:0 word:1	1675000	WORD	Log Data	[BASE] Graph
6	(LOG1) block:0 word:2	3350000	WORD	Log Data	[BASE] Graph
7	(LOG1) block:0 word:3	1005000	WORD	Log Data	[BASE] Graph

[Figure. Current Address List]

(4) Debug List

- Tag

If selects address in [Current Address List] with mouse, displays list of tag which the address is used.

Debug List									
Tag		Watch List							
No	Screen Name	Tag ID	Type	AddrCnt	X	Y	Width	Height	
1	[SCREEN] Graph	6	Record	18	12	37	294	162	
2	[SCREEN] Graph	6	Record	18	12	37	294	162	
3	[SCREEN] Graph	6	Record	18	12	37	294	162	
4	[SCREEN] Graph	6	Record	18	12	37	294	162	
5	[SCREEN] Graph	6	Record	18	12	37	294	162	

[Figure. Debug List]

- Watch List

If clicks address in [Current Address List] with right button of mouse, and [Add Watch List] is appeared, And press it to register. Registered address keeps displaying status of address though screen in [Simulator] is converted.

Debug List					
Tag		Watch List			
No	Address	Status	Type	Kind	Screen Name
1	(SYS)3300	1932000	WORD	Internal Buffer	[LOG]
2	(SYS)3301	161000	WORD	Internal Buffer	[SCRIPT]

[Figure. Debug List]

44.12 Make TopView Client

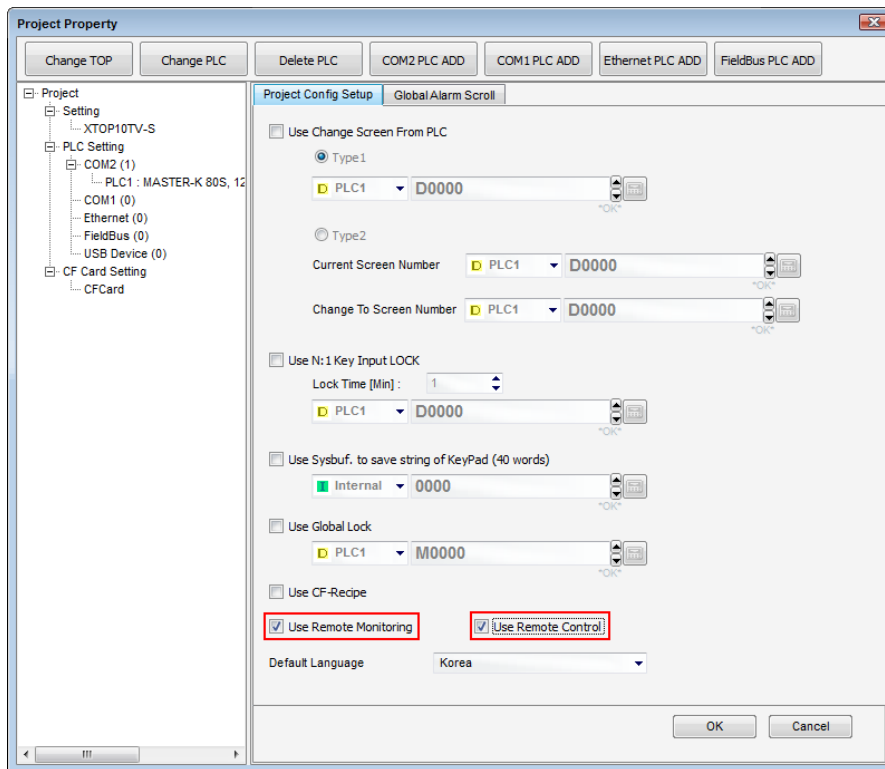
Creates [TopView Client] file.

[TopView] is the function which monitors touch screen under operation at far distance by PC with connecting touch screen with [Ethernet] communications or controls in remote.

44.12.1 Create client file

(1) Project property

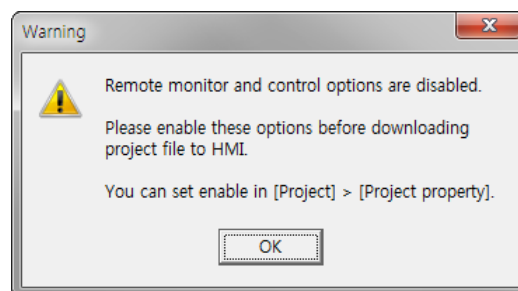
Before creating [TopView client], first sets [Use Remote Monitoring] in [Project]–[Project Property] of menu.



[Figure. Create TopView client]

Part	Explanation
Use Remote Monitoring	Monitors Touch screen which is operated in remote way from PC through Ethernet communications.
Use Remote Control	Further to remote monitoring, can control the touch screen from PC.

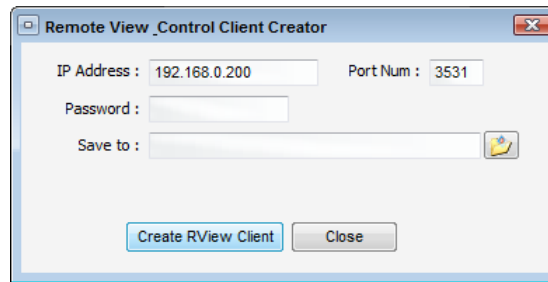
If executes [Make TopView Client] without above setting, message which warns to sets [Project property] is appeared as below figure.



[Figure. Message]

(2) Remote View Control Client Creator

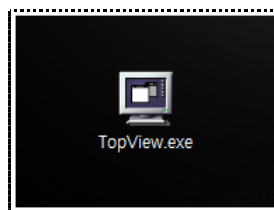
If completes [Project property], creates [TopView client] file.



[Figure. Creat TopView client]

Creator	Explanation
IP Address	Inputs IP address set in touch screen main body.
Port Num	Ethernet communications port between TopView and touch screen, basic value is [3531].
Password	Inputs password sets in touch screen main body.
Save to	Sets route and file name to save execution file.
Create RView Client	Creates TopView client file as above setting.
Close	Closes [Create TopView client].

If presses [Create RView Client], execution file is created as below figure.

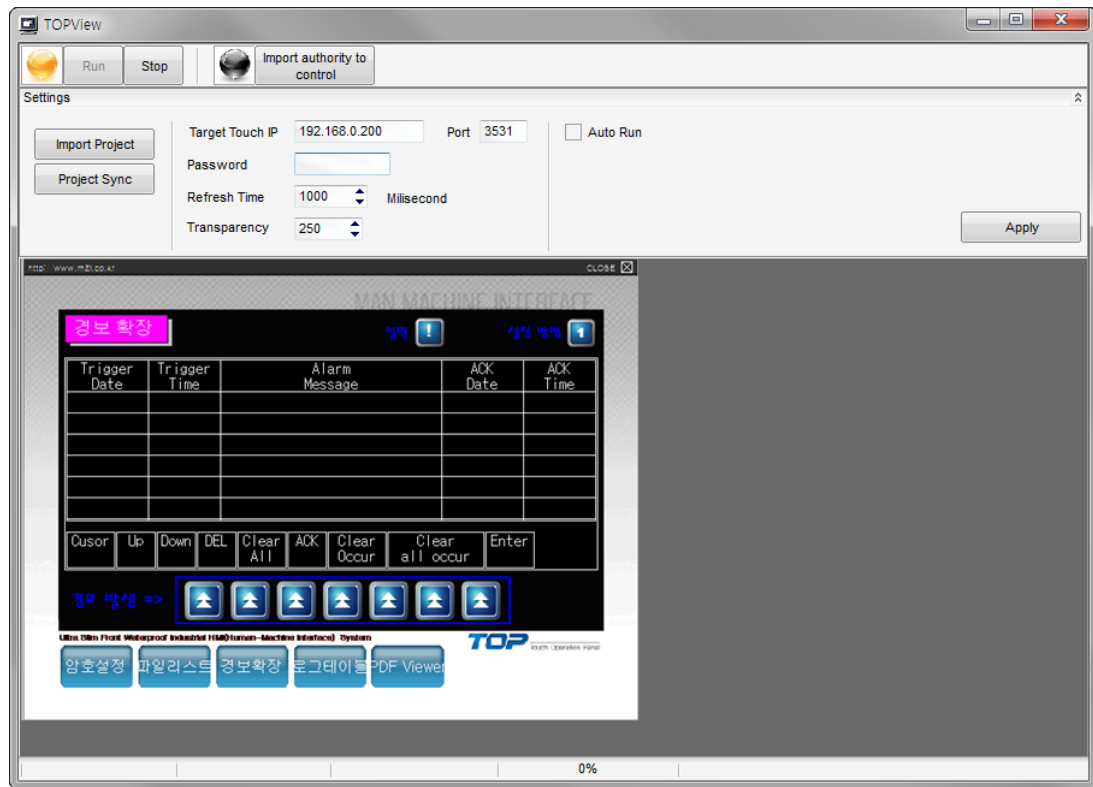


[Figure. TopView client execution file]

44.12.2 Screen of TopView

If executes [TopView client] file, [TopView] is appeared as below figure.

Operating screen of touch screen is appeared in real-time, if executes [R-Control Stop], can control remote way. When creates file in [TopView client], can change the setting in [TopView]. Changes the setting, it is applied if presses [Apply].



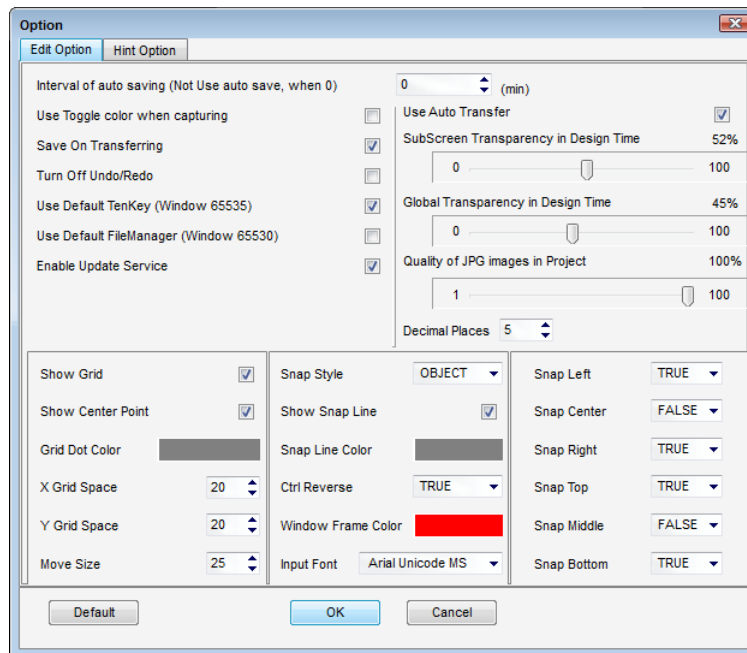
[Figure. TopView]

TopView	Explanation
Run	Starts real-time monitoring.
Stop	Stops real-time monitoring.
Bring control	If becomes 'brought control' status, can control touch with mouse instead of finger.
Import Project	Imports saved design files from PC, applies it to TopView.
Project Sync	Uploads design files under use in touch screen, applies it to TopView. .
Target Touch IP	Displays IP address of touch screen which does remote monitor/control.
Port	Displays number of COM port. (In general, no need to change.)
Password	Inputs password of touch screen.
Refresh Time	Sets update period which real-time monitoring screen is updated.
Transparency	Displays [TopView] in transparent. Can sets 0~250.
Auto Run	If [TopView] is executed, starts real-time monitoring automatically.

44.13 Option

Sets program option of XDesignerPlus.

If presses [Default], all option items are set as condition of first installation.



[Figure. Edit option]

44.13.1 Edit option page

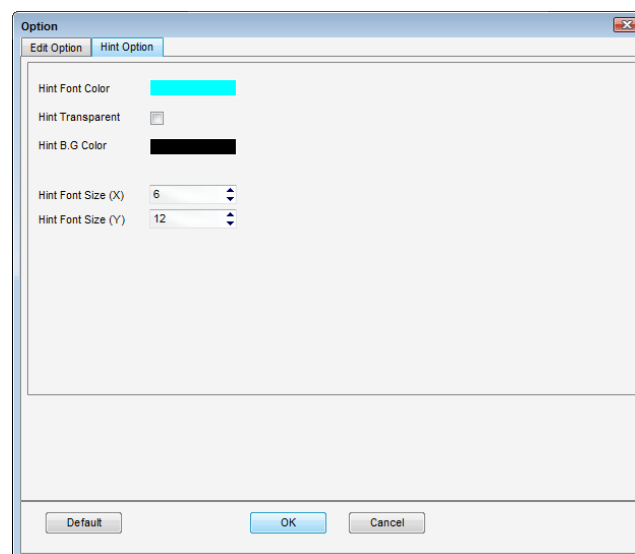
Edit option	Explanation
Interval of auto saving	Sets automatic saving period of project by minute unit.
Use Auto Transfer	Uses automatic saving function of project.
Save on Transferring	If executes [Transmit]–[Build and transmit], saves project automatically.
Turn off Undo / Redo	Does not use [Undo] and [Redo] functions.
Use Default Tenkey	Uses default automatic Tenkey when new project is created.
Use Default FileManager	Uses default file manager when new project is created.
Enable Update Service	Sets update to be executed automatically.
SubScreen Transparency in Design Time	When uses subscreen in base screen as background, sets transparency of subscreen.
Global Transparency in Design Time	When uses global screen in base screen as background, sets transparency of master screen or frame.
Quality of JPG images in Project	Sets quality of JPG image registered in project.
Decimal Places	Sets default digit to input decimal point.
Show Grid	Displays grid in edit screen.
Show Center Point	Displays center point in edit screen.
Gid dot Color	Sets color of grid.
X Gris Space	Sets gap of X axis dot forming grid.
Y Gris Space	Sets gap of Y axis dot forming grid.
Snap Style	Selects one out of [Object snap] and [Grid snap].

Show Snap Line	Sets line to be viewed when snap operates.
Snap Line Color	Sets color of snapline.
Ctrl Reversion	Uses Ctrl key when moves figure or tag with direction key of keyboard.
Window Frame Color	Sets color of frame which controls size in window screen.
Input Font	Sets font of characters input in property edit.
snap Left	Sets snap which operates based on left.
Snap Center	Sets snap which operates based on horizontal center.
Snap Right	Sets snap which operates based on right.
Snap Top	Sets snap which operates based on upper side.
Snap Middle	Sets snap which operates based on vertical center.
Snap Bottom	Sets snap which operates based on bottom side.

44.13.2 Hint Option page

Hint is the explanation which is displayed at left top of registered tag of screen.

Displays name of tag, ID and address.



[Figure. Hint]

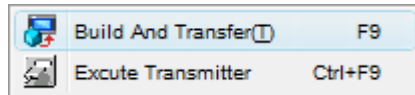
Hint	Explanation
Hint Font Color	Sets font color of popup help.
Hint transparent	Sets background color of popup help in transparent.
Hint B.G Color	Sets background color of popup help.
Hint Font Size (X)	Sets width size of popup help font.
Hint Font Size (Y)	Sets length size of popup help font.

CHAPTER 45 Transmission Menu

CHAPTER 45 – Transmission Menu

Transmission menu is the function which transmits data between touch screen and PC.

There are [Build And Transfer] and [Execute Transmitter] regarding transmission menu.



[Figure. Transmission menu]

[Build And Transfer] builds(compile) design project and transmits it by executing transmitter.

[Execute Transmitter] executes transmitter promptly with build process.

So, when transmitting design, executes [Build And Transfer], when does other transmission, executes [Execute Transmitter].



Note Before executing transmission menu, checks if transmission cable is connected well.
Also, checks if currently-open design file is saved. Saved files can be transmitted.

45.1 Outline of transmission

Touch screen and PC can communicate with [Serial], [USB] and [Ethernet]. .

Transmission method	Explanation
Serial	Connects COM1 port of touch screen with serial cable and communicates.
USB	Connects USB device port of touch screen with USB cable and communicates.
Ethernet	Connects Ethernet port of touch screen with Ethernet cable and communicates.

Transmittable data is design file, OS file of touch screen, font file and logging/recipe/alarm data file.

Transmission file	Explanation
Design project file	Touch screen file created in XDesignerPlus program.
OS file	As touch screen-operating file, if purchases touch screen, OS is already installed. In case of not recent OS of touch screen, can update by transmitting OS file.
Font file	When purchases touch screen, already installed. Domestic version supports Korean/English, Chinese version supports Chinese/English. When wants to change font, can transmit it after download from homepage.
Logging/recipe/alarm data file	Occurred and saved file during operation of touch screen. Can bring this file to PC and save it.

There are [Download] and [Upload] along transmitting direction.

Transmitting direction	Explanation
Download	Means transmitting work from PC to touch screen. Can download design project, OS and font files.
Upload	Means transmitting work from touch screen to PC. Can upload design project and logging/recipe/alarm data files.

45.2 Build and Transfer

Builds and Transmits design created project file XDesignerPlus program.

If executes [Build And Transfer] menu, proceeds with build immediately.

At this time, if there is no error in design file, executes transmitter.

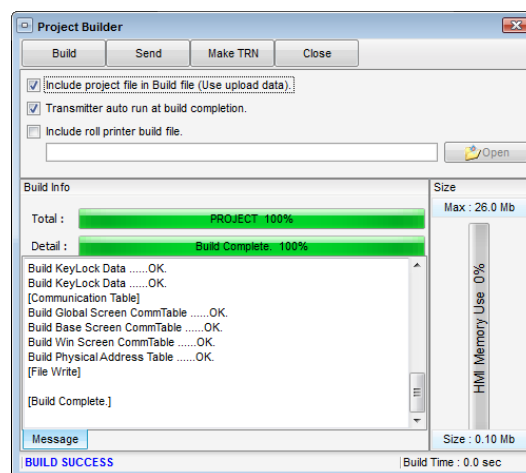
Transmitter is linked with design file, so can be transmitted simply.

[Build] and [Transmitter] are as followings.

45.2.1 Project builder

If executes [Build And Transfer], firstly-appeared screen is [Project Builder].

[Project builder] imports and builds [* .DPX] file opened in XDesignerPlus program currently. Also, can check the required option when build.



[Figure. Project Builder]

(1) Build and [*.TRN] file for transmission

Build means the same as compile. Analyzes [*.DPX] file opened in XDesignerPlus program and checks if there is error, creates file for transmission.

Because size of [*.DPX] file is big and contains data which OS of touch screen does not need, creates file for transmission after selecting required data out of contents of [*.DPX] file.

Given that extension of file for transmission is [*.TRN], it is internally-created file.

This file is created in route of [C:\Program Files\WM2I Corp\XDesignerPlus\TEMP\(*.TRN)].

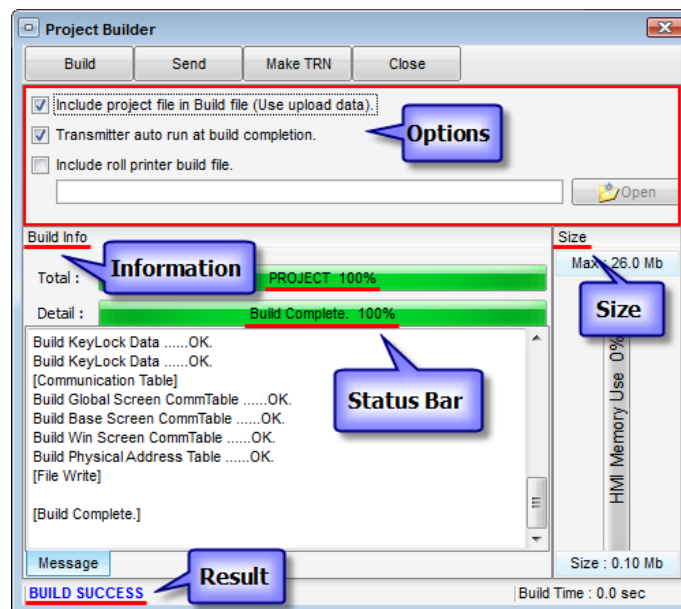
File for transmission [*.TRN] cannot be edited in XDesignerPlus program, and cannot be edited to [*.DPX].

(2) Composition of project builder

After completes build s below figure, display the degree of proceeding.

Top of project builder consists of button and option, displays data and size at bottom.

At lowest bottom, build results are displayed.



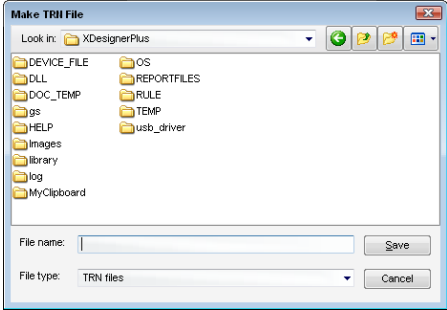
[Figure. Project Builder]

① Button part

Button of project builder consists of followings.

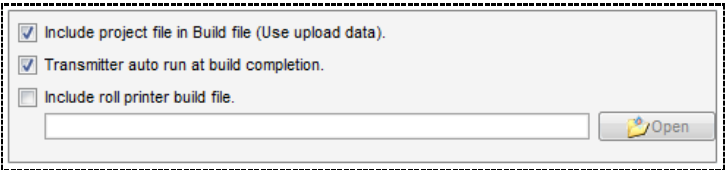


[Figure. Button part]

Button	Explanation
Build	Builds project file.
Send	Executes transmitter. In case of [Fail] as build result, it is not transmitted. .
Make TRN	<p>Creates file for transmission [*.TRN].</p> <p>Can save and use [*.TRN] file separately.</p> <p>After saving [*.TRN] file in CF memory card or USB memory storage unit, can use it when transmitting it to touch screen using CF memory card or USB memory storage unit.</p> <p>If presses [Make TRN] button, [Make TRN File] is appeared and enables created [*.TRN] file to be saved in the route after building.</p>  <p>Sets saving route and file name, presses [Save] button.</p>
Close	Closes [Project Builder].

② Option part

Option of project builder is as following.

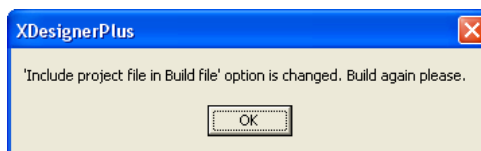


[Figure. Option part]

Option	Explanation
Include project file in Build file	<p>This option sets if including uploading data or not. If transmits without including uploading data, cannot upload design project files in the touch screen.</p> <p>When transmitting design file, touch screen is operated though [*.TRN] file which is file for transmission is transmitted. But, [*.TRN] file cannot be edited and uploaded to PC as well as cannot be converted to [*.DPX].</p> <p>So, transmits upload data with [*.TRN] file, enables [*.DPX] file to be uploaded later. Upload data is the file which compresses [*.DPX] file.</p>
Transmitter auto run at build completion	<p>After build, if there is no error, transmitter is executed automatically.</p> <p>This option sets if executes transmitter automatically or not.</p>
Include roll printer build file	<p>Includes roll printer build file [*.rbf] to [TRN] file.</p> <p>Presses [Open] button, selects roll printer file and designates the route.</p> <div> </div> <p>(Refer to [4.10] of [Chapter 4] regarding how to use roll printer.)</p>

If options of [Include project file in Build file] and [Include roll printer build file] are changed, has to executes compile again because file has to be included or removed.

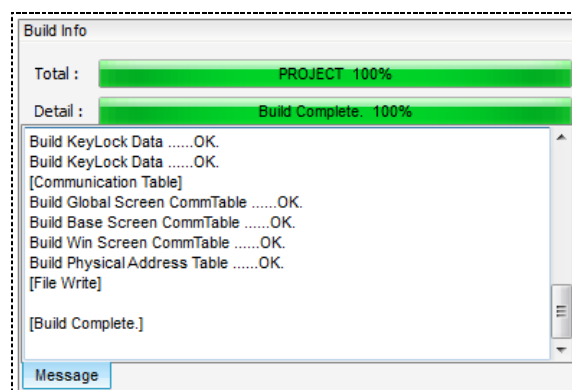
After changing option, if presses [Sand] button, following message is appeared.



[Figure. Re-build message]

③ Build Info

Data part displays build proceeding degree and existence of error.

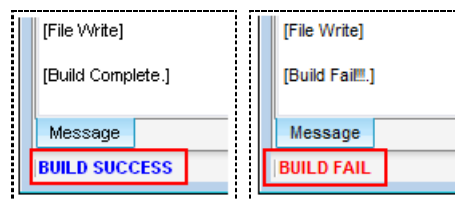


[Figure. Data part]

Date	Explanation
Total	Displays DPX file name and build proceeding degree by %.
Detail	Displays build proceeding degree by %, displays build results in more details. Displays [Build Complete] when build is succeeded, when failure, displays [Build fail].
Message	Displays existence of error of project per detailed item. If there is no error, displays [OK].

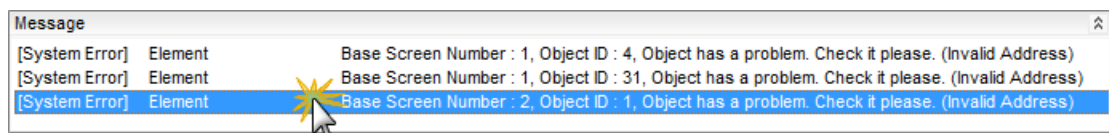
④ Displays build results

At lowest bottom, build results are displays as below.



[Figure. Build results]

If there is no error as [BUILD SUCCESS] as left and built, executes transmitter automatically. If there is error as [BUILD FAIL] as right and closes [Project Builder], displays error message at bottom of XDesignerPlus program.

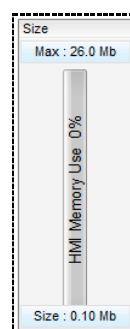


[Figure. Error message]

Can check error-occurred part through error message.

If double-clicks error message, moves to error part in project.

⑤ Design-proceeding displaying part



[Figure. Design-proceeding displaying part]

Touch screen can draw up design project to 26M.

At right of project builder, displays design-proceeding part.

At bottom, displays file volume of currently-transmitting design by [Mb] and displays how much [%] is taken out of touch screen memory in graph.

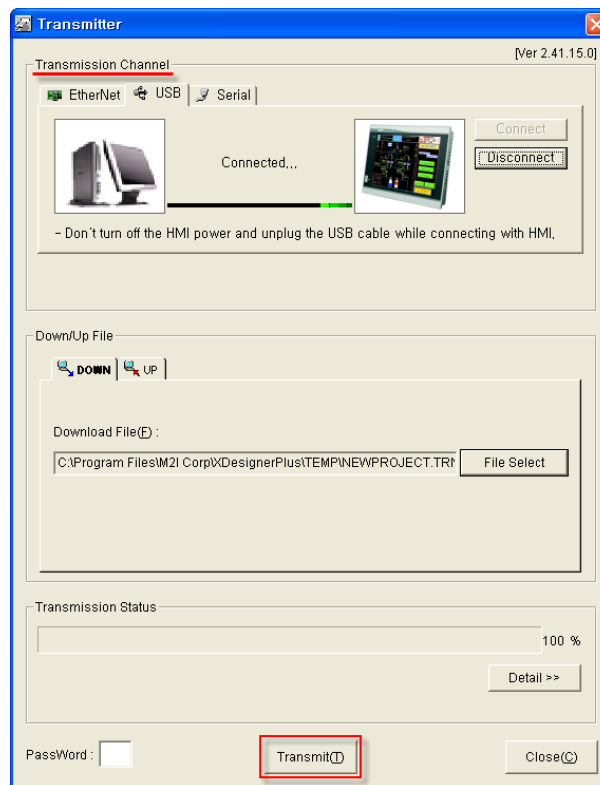
45.2.2 Executed transmitter after build

After build successfully, executes transmitter immediately.

Looking [Download File] in transmitter, file for transmission [*.TRN] file is linked automatically.

So, if sets [Transmissin channel] and presses [Transmit] button, design file is transmitted.

Transmitter is explained in next section in more details.

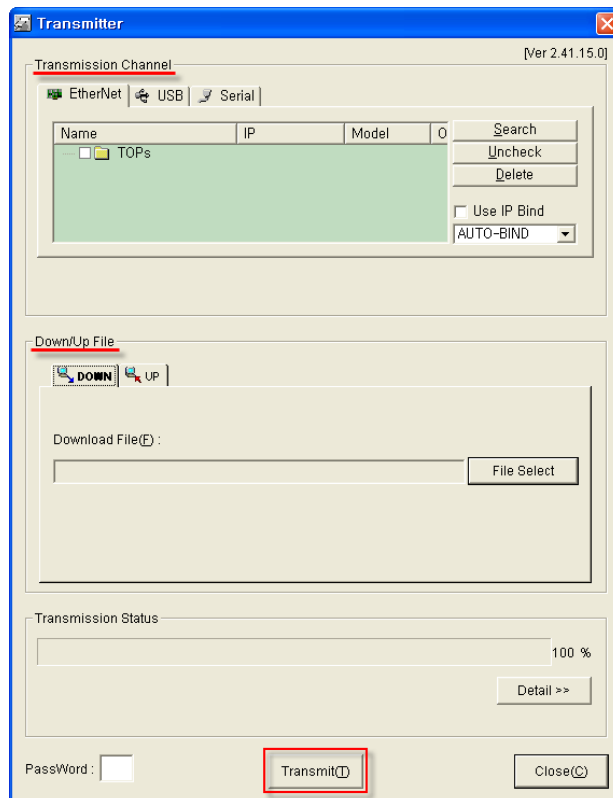


[Figure. Executed transmitter after build]

45.3 Executes Transmitter

[Execute Transmitter] menu is build-process-omitted in [Build and Transfer] menu, used when file other than design file is transmitted or uploaded.

Sets [Transmission Channel] along communications media under use out of [Ethernet], [USB] and [Serial], after setting file to transmit from [Down/up] file, if presses [Transmit] button, transmission is executed.



[Figure. Transmitter]

Transmitter is executed by [Transmitter] icon in wallpaper.



[Figure. Execute transmitter by icon in wallpaper]

45.3.1 Composition of transmitter

Transmitter consists of [Transmission Channel] setting part and [Down/up] setting part.

At bottom, displays [Transmission Status].

(1) Transmission Channel

Transmission channel to connect touch screen with PC is [Ethernet], [USB] and [Serial].

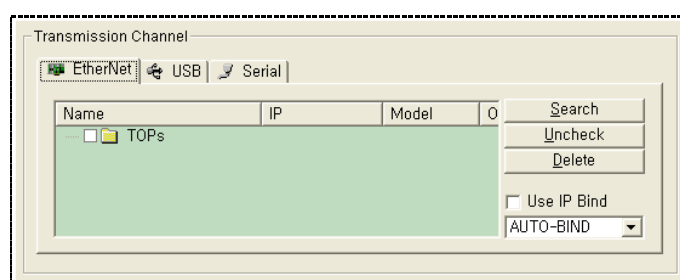
① Ethernet transmission

In case of connecting touch screen and PC with Ethernet cable.

Ethernet transmission can transmit data to multiple touch screens at a time.

How to set up is as following.

1. Connect touch screen with PC with Ethernet cable.
2. Synchronizes IP and subnet mask in [Menu screen]–[Communications setting] of touch screen. Sets [Subnet mask] same as PC and touch screen altogether, let [IP] have the same digits for front three digits and different digit for last one digit.
3. By pressing [Search] button, searches touch screen connected with PC currently.
4. Checks touch screen to transmit out of displayed touch screens. Can transmit data to multiple touch screens.
5. Executes [Transmit].



[Figure. Ethernet transmission]

Ethernet	Explanation
Search	<p>Searches all touch screens connected with PC and Ethernet.</p> <p>At this time, in the searched touch screen, PC and subnet mask are the same, IP address IP1~IP3 are the same.</p> <p>Searched touch screens display [Name], [IP], [Model name], [OS version], [Design version], [Log] and [Recipe] information.</p>

Uncheck	Cancel all selected checkboxes from the list.
Delete	Deletes selected item from the list.
Use IP Bind	When more than two network equipment are installed in PC, can select IP address to use in [Use IP Bind]. In case of selecting [Auto-bind], most can be transmitted. When cannot transmit, can select IP address of PC from the list in manual.

② USB transmission

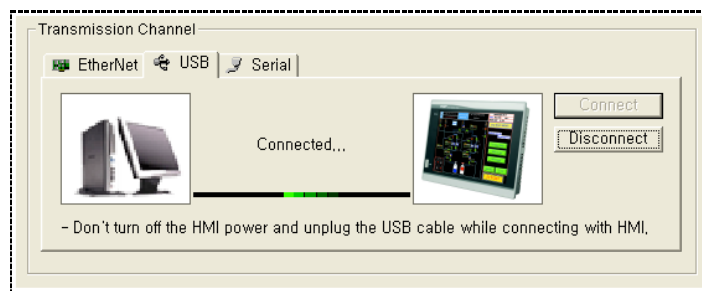
In case of connecting USB device port with PC using USB cable for communications.

USB transmission can be used when installs [USB driver] first.

How to install [USB driver] is explained in next chapter.

How to setup is as following.

1. Connect USB Device port with USB cable.
2. Installs USB driver.
3. Presses [Connect] button and enables touch screen and PC to be [Connected].
4. Executes [Transmit].



[Figure. USB transmission]

USB	Explanation
Connect	Connects PC and touch screen with USB cable. USB communications method is very fast and useful, due to signal weakness, needs to press [Connect] button whenever transmits, disconnect when transmission is completed.
Disconnect	Disconnect PC with touch screen with USB cable.

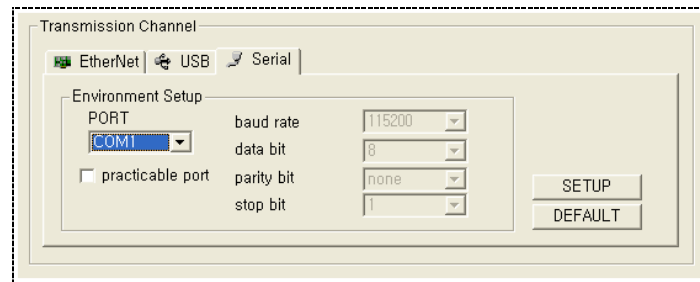
③ Serial transmission

In case of connecting USB device port with PC using serial cable for communications.

Slower than Ethernet and USB transmission.

How to setup is as following.

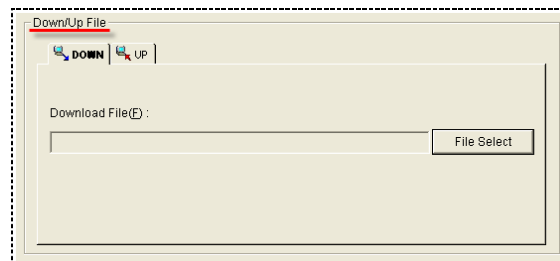
1. Connects COM1 port of touch screen with serial cable.
2. Sets COM port of PC connected with serial cable
3. In case of using [USB To Serial Converter], checks port number of [USB converter] used in [Port] and sets it in [Port].
4. Baud rate(115200)/data bit(8)/parity bit(none)/stop bit(1) are fixe, if wants to change them, presses [Setting change] and changes the setting. If wants to return to default setting, presses [Default] button.



[Figure. Serial transmission]

(2) Down/Up file Down/Up

Selects file to [Download] in [Down/up file], or set saving route of upload file in case of [Upload].



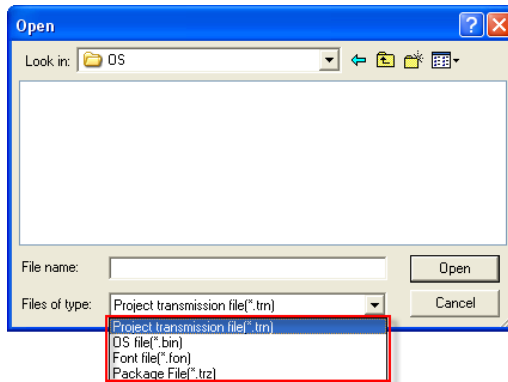
[Figure. Down/Up file]

① Selects download file

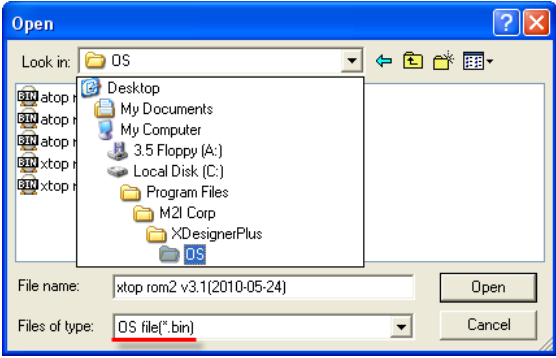
[Download] means the work which transmits data to touch screen from PC.

Downloadable files are [Design project/OS/Font] files.

If presses [File select] button, [Open] screen is appeared and enables files to be downloaded.



[Figure. Download file selection window]

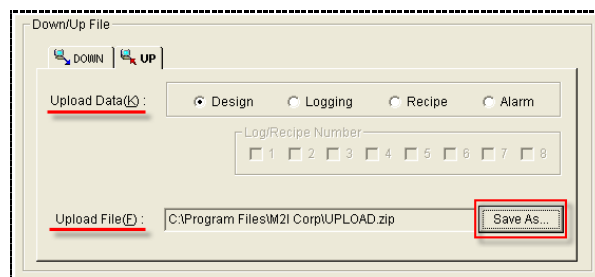
Transmission file	Explanation
Design project file [*.trn]	<p>After selecting [Design transmission file] as [File of type], designates the route.</p> <p>Touch screen file which is created in XDesignerPlus program.</p> <p>Transmit-available file is [*.TRN] file, not [*.DPX] file, so, has to transmit created file for transmission.</p>
OS file [*.bin]	<p>After selecting [OS file] as [File of type], designates the route.</p> <p>OS is operating system for touch screen. Transmits it when updates OS version.</p> <p>If XDesignerPlus is installed in PC, OS file which matches to the version of XDesignerPlus is included in installation route. After installing XDesignerPlus in default route, it is included in following route. [C:\WProgram Files\WM2I Corp\WXDesignerPlus\WOS]</p> <p>Selects OS file from this route, or downloads OS file from homepage, transmits it and update is completed.</p> 
Font file [*.fon]	<p>After selecting [Font file] as [File of type], designates the route.</p> <p>When purchases touch screen, already installed. Domestic version supports Korean/English, Chinese version supports Chinese/English. When wants to change font, can transmit it after download from homepage.</p>

② Upload setting

[Upload] means work which brings data from PC.

Upload available files are [Design project/Log/Recipe/Alarm] files.

After setting [Transmission channel] first definitely, sets [Down/up file] part.

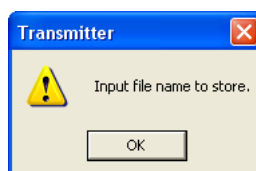


[Figure. Upload]

How to setup is as following.

1. Sets [Transmission channel] first.
2. Selects [Up] page from [Down/up file].
3. Selects file to upload from [Upload data] out of saved data in memory of touch screen.
4. Sets the route to save uploaded file by pressing [Save As] button.

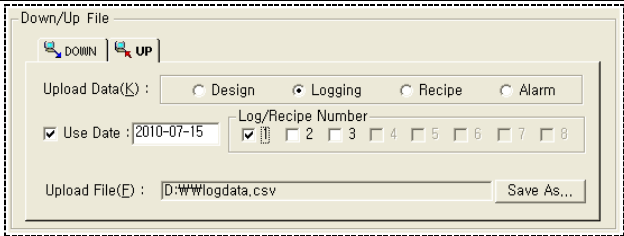
If presses [Transmit] button without setting saving route, following message is appeared.



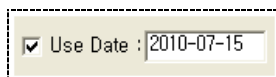
[Figure. Error message]

5. If presses [Transmit] button, executes upload.

Upload file	Explanation
Design	Uploads project file under use in touch screen. [* .DPX] file is uploaded with compressed type, not [* .TRN] file.
Logging	Upload logging data saved in touch screen. After setting [Transmission channel] if selects [Logging] is selected from [Upload data], number which has logging data in current touch screen is displayed in activation out of longing 1~8. One logging number is selected, selects logging number to upload.

	 <p>Logging data is saved in [*.CSV] file.</p>
Recipe	<p>Uploads recipe data saved in touch screen.</p> <p>Recipe data is saved as [*.CSV] file.</p> <p>Can be used in [Serial] transmission.</p>
Alarm	<p>Uploads alarm data saved in touch screen.</p> <p>Alarm data is saved [*.CSV] file.</p>

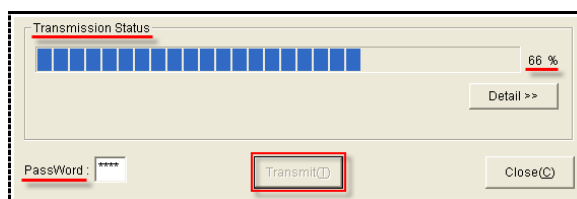
[Use date] uploads data of input date when [Logging/alarm] data saved in CF memory card is uploaded. [Used date] is used in case of [USB/Ethernet] transmission only.



[Figure. Use Date]

(3) Transmission proceeding status & transmit button

If completes setting of [Transmission channel] and [Down/up file], starts transmission by pressing [Transmit] button.

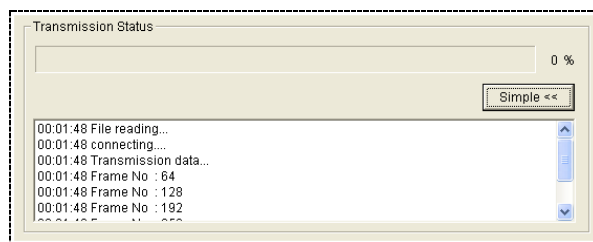


[Figure. Data transmission]

If transmission starts, displays how much [%] of transmission is proceeded during transmission status.

For more details, presses [Details] button.

View details displays transmission status as below figure.



[Figure. View details of transmitting status]

In case of setting [Main menu]–[setup]–[8.Password], inputs password.

If password is wrong, following message is displayed and cannot be transmitted.



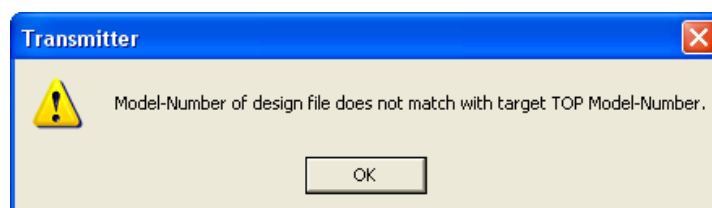
[Figure. Password error message]

If presses [Close] button, transmitter is terminated.

45.4 Error occurred during transmission

(1) Touch screen model is not match

If touch screen model installed in project is not match to touch screen model to transmit, following notice window is appeared.



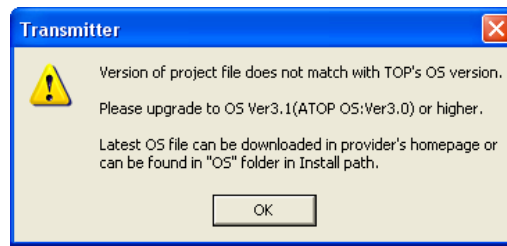
[Figure. Not match error of touch screen model]

Can change model name of touch screen in [Project]–[Project property].

(Refer to [7.12.3] of [Chapter 7] regarding how to change model name.)

(2) OS version is not match

If design software is not match to OS version of touch screen, following error message is appeared and transmission cannot be done.



[Figure. Not match error of OS version]

Updated touch screen to latest OS file in installation route of XDesignerPlus program.

If XDesignerPlus is installed in default route, OS file is in route of [C:\Program Files\WM2I Corp\WXDesignerPlus\OS].

(Refer to [1.2.4] of [Chapter 1] regarding relation between software and OS version)

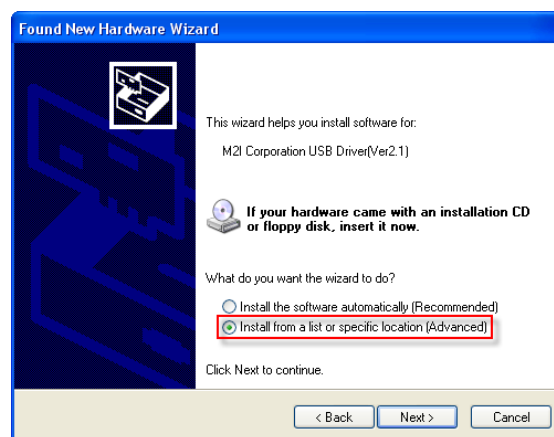
45.5 How to install USB driver

It wants to transmit data by connecting touch screen with PC by USB cable, must install USB driver.

If connects touch screen with PC by USB cable, [Found New Hardware] message is appear at bottom line and [Found New Hardware Wizard] is executed because USB data communications cable is recognized as new hardware.



Selects [Install from a list or specific location(Advanced)] as below figure and presses [Next].

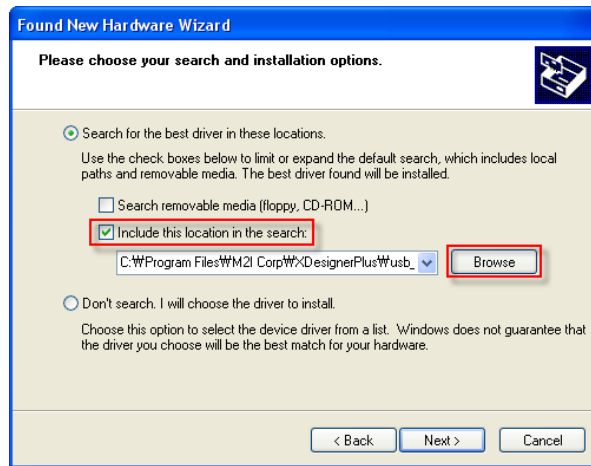


There two methods regarding installation. One is [Search for the best driver in these locations], another is [Don't search. I will choose the driver to install.].

45.5.1 Search for the best driver in these location

If XDesignerPlus is installed, USB driver is located in created installation folder.

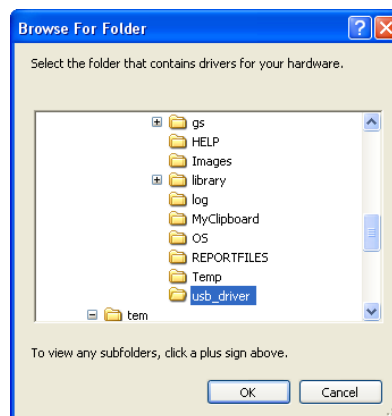
After checking [Include this location in the search] as below figure, inputs the route directly, or sets [Browse].



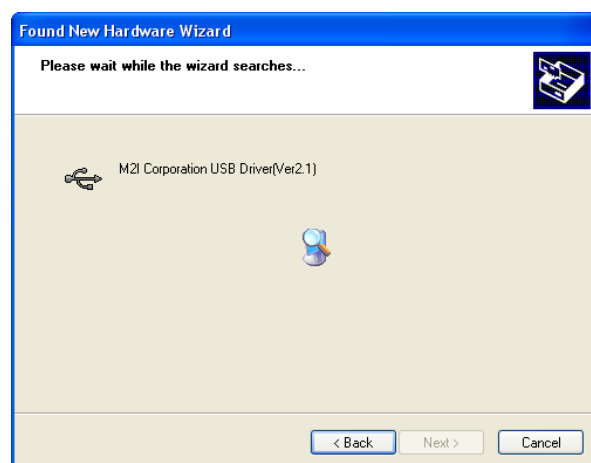
If [Browse For Folder] is appeared, presses [OK] after clicking folder which driver is located.

When installation, the route of driver in case of default installation without changing installation route is as following.

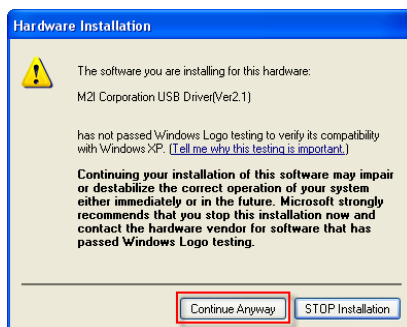
[Driver location: local disk(C:) → Program Files → M2I Corp → XDesignerPlus → usb_driver]



If designating folder is completed and presses [Next], driver installation is proceeding as below figure.



Compatibility check warning is appeared during installation. Presses [Continue Anyway] and proceed with installation.

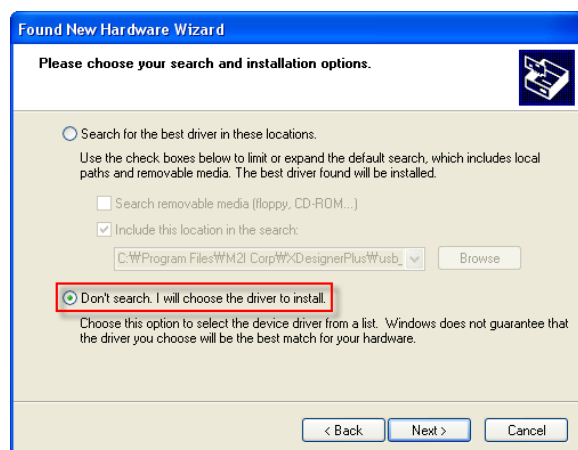


If presses [Finish], driver installation is completed.

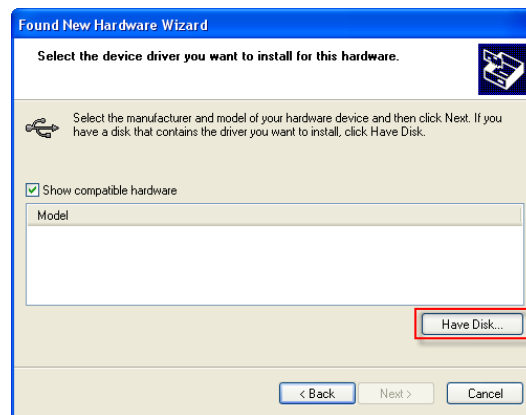


45.5.2 Don't search. I will choose the driver to install

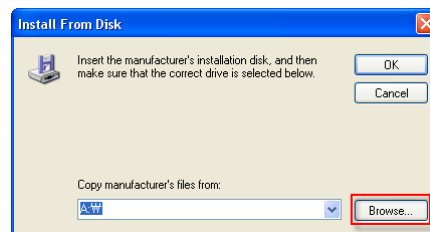
Selects [Don't seach. I will choose the driver to install.] as below figure and presses [Next].



Presses [Have Disk...] in screen of selecting hardware installation driver.



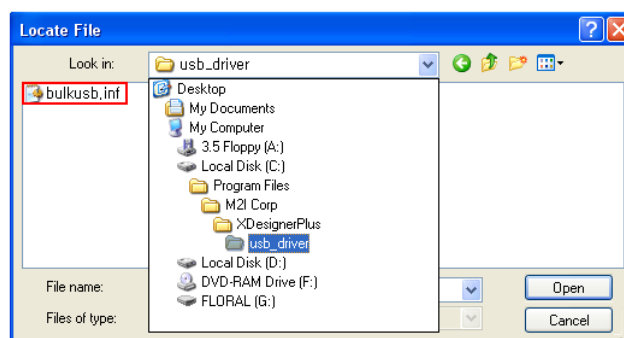
If [Installation From Disk] is appeared, presses [Browse] and selects driver.



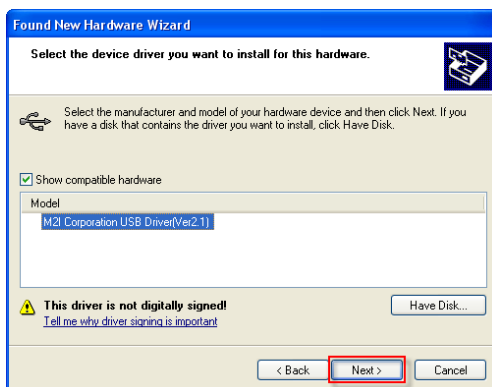
In case of installing by default setting without changing installation route during installation, the route is as following.

[Local disk(C:) → Program Files → M2I Corp → XDesignerPlus→ usb_driver]

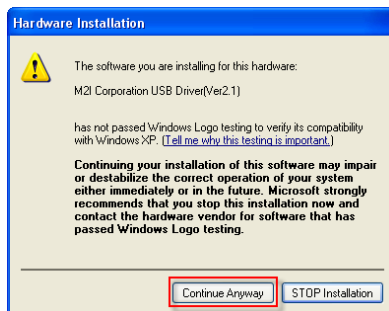
After selecting [bulkusb.inf] file, presses [Open].



After selecting the driver from driver list, if presses [Next], installation is proceeded.



Compatibility check warning is appeared during installation. Presses [Continue Anyway] and proceed with installation.



If presses [Finish], driver installation is completed.



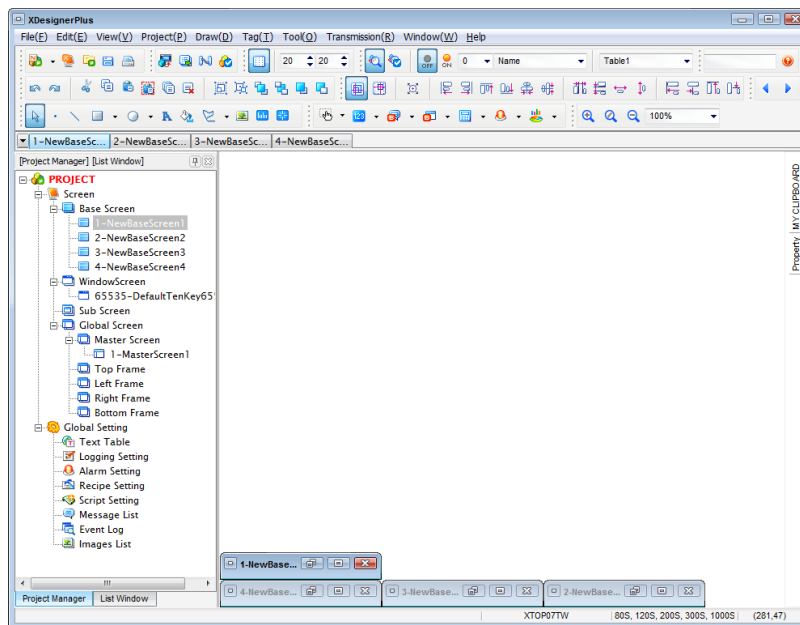
CHAPTER 46 Window Menu

CHAPTER 46 – Window Menu

Window menu is used when base screen, window screen, subscreen and master screen created in XDesignerPlus program is sorted or closed. When multiple screens are activated, enables more effective edit to be implemented.

46.1 Minimizes All

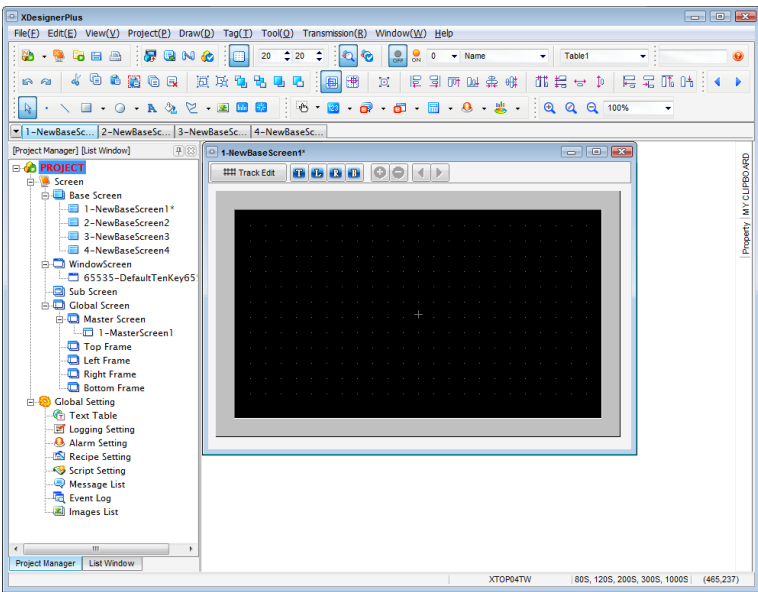
Minimizes all open screens in program and sorts them at below part.



[Figure. Minimize All]

46.2 Maximizes All

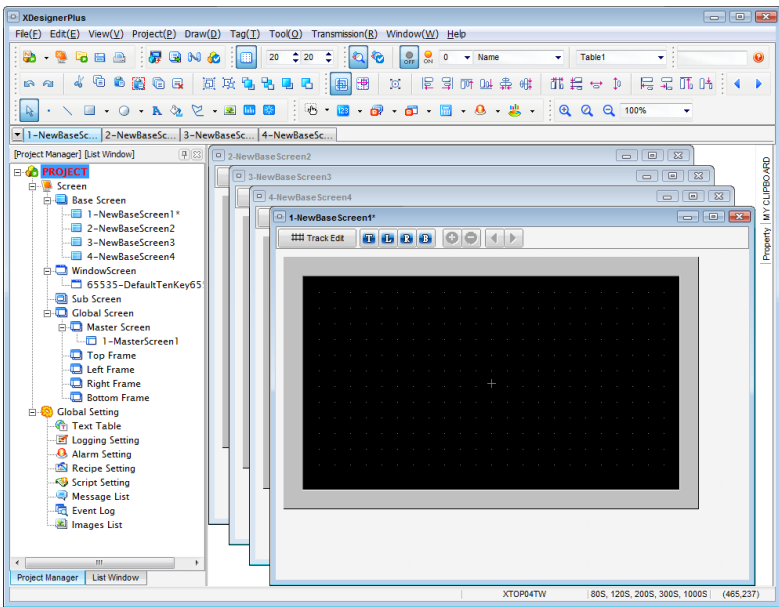
Displays all open screen in program in maximized size.



[Figure. Maximize All]

46.3 Cascade

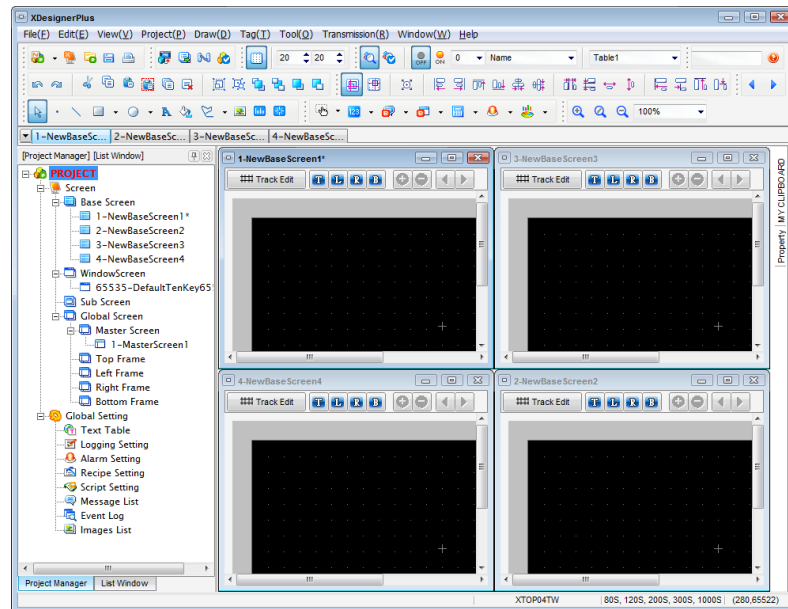
Sorts all open screens in program in tier in sequence.



[Figure. Cascade]

46.4 Arrange All

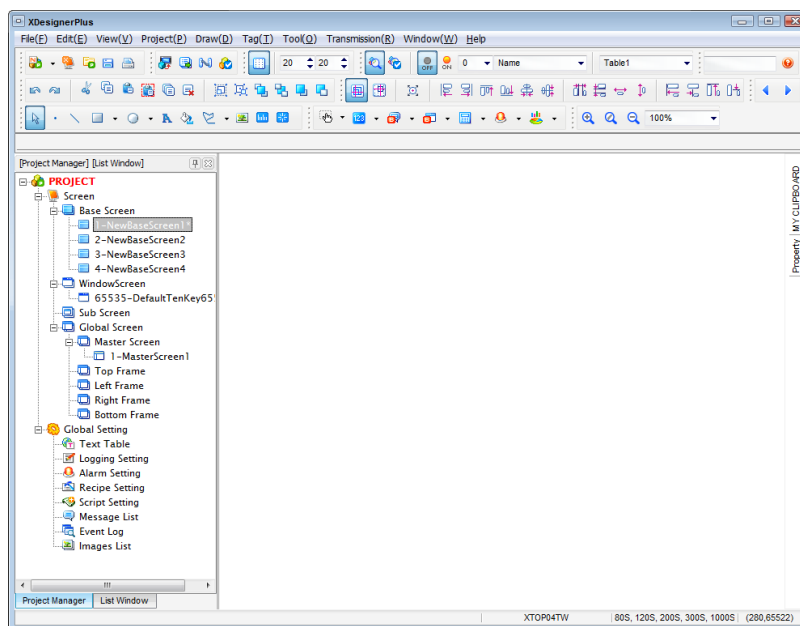
Sorts all open screens in program in tile-shaped arrangement.



[Figure. Arrange All]

46.5 Close All

Closes all open screens in program.



[Figure. Close All]

CHAPTER 47 Help Menu

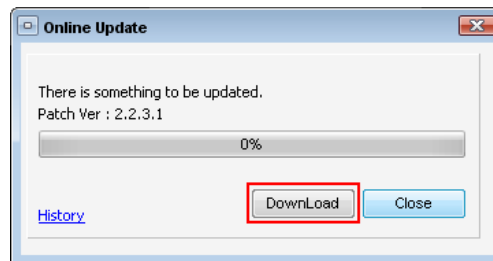
CHAPTER 47 – Help Menu

Help menu includes online update which provides with additional function and information, help and product information.

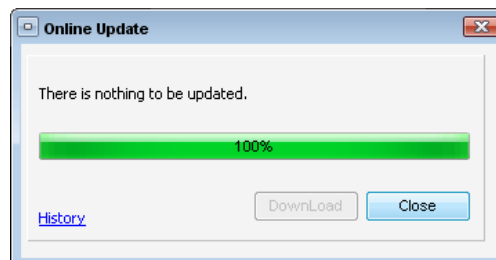
47.1 On-Line Update

Updates product to latest version of XDesignerPlus. Online update is available when user's PC is connected with internet.

If executes [Online Update], update window is appeared, when there is a update item, first figure as below is appeared, if there is no update item, second figure as below is appeared.

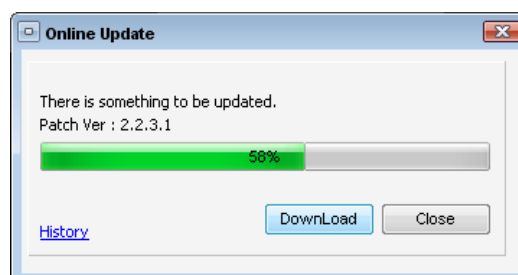


[Figure. Online Update]



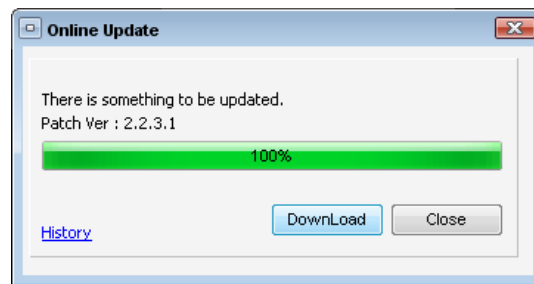
[Figure. No need to update]

When there is update item, if presses [Download] button, program is closed automatically and update is proceed.



[Figure. Update proceeding]

If update is completed, presses [Close] button, and executes XDesignerPlus again.



[Figure. Update completed]



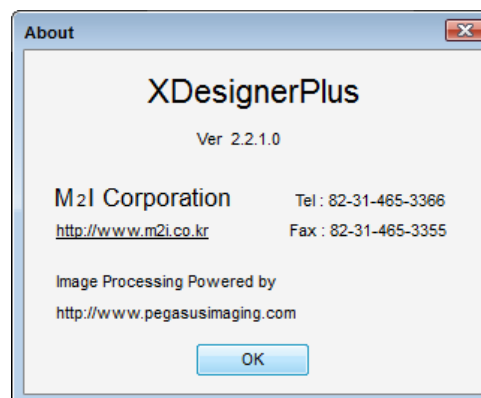
Note When XDesignerPlus program is executed, checks version of program which is currently installed during loading, and update window is appeared if there is new update item.

47.2 Help

Shows user's manual of XDesignerPlus in PDF file. This function is executed when PDF reader program is installed.

47.3 About

Can check version of XDesignerPlus, telephone number of M2I Corporation and website address is recorded.



[Figure. About]