LS Studio

1. Start

1.1 Features

XG5000 provides an integrated development environment with software such as XP-Builder, DriveView7. In the integrated development environment, all project files are integrated and managed by the XG5000.



By using the XP-Builder integration project, the list of variables used in the PLC can be used immediately without the inconvenience of exporting or importing as a CSV file. In addition, Driveview7 makes it easier to configure communication settings by using the inverter list in the project.

1) Previous using method

To use XG5000's variables and comments in XP-Builder, use CSV format file.



Variables and comments export function is used in XG5000 to save variable / comment as CSV file. In XP-Builder, the file saved in XG5000 is used by 'importing into tag group'. If the variable / comment created in the XG5000 changes frequently, this process is repeated.

2) Using method in the tool integration environment

To use XG5000's variables and comments in XP-Builder, double-click HMI item in XG5000 project tree.



In the tool integration environment, it is not necessary to save the variable / comment items used in the xg5000 as a separate file, and even if the variable / comment changes, exporting to the file is not necessary. This can reduce overall engineering time.

1.2 Install file

To use the integrated project environment, you can use the LS Studio integrated installation package, or you can install the XG5000, XP-Builder, and DriveView7 separately.

Note -The following software versions are integrated with the XG5000.

① XG5000: Version 4.11 or later

- 2 XP-Builder: B27 or later for version 2.00
- ③ DriveView7: Version 1.4.2 or later

1.3 Install

- (1) Run the installation file.
- (2) The installation wizard prepares for installation. Press next button.



(3) Select the type of installation.

Complete installation installs XG5000, XP-Builder, and DriveView 7.



In a custom configuration, you can select and install the programs you want.

	-			
istom Setup				
Select the programs you wan	t installed.			
(If you uncheck the installed	program, the pro	gram will be rem	ioved.)	
✓ XG5000				
DriveView7				
ZP-Builder				

(4) If you select the type of installation, start the installation as shown below.

E LS Studio - Install	Shield Wizard S Studio		<u>ب</u>
Sta XG	e program features you selected aging 5000	are being installed.	
InstallShield		12	Cancel

(5) The installation files of the selected program will be executed sequentially. For detailed installation procedure of each program, refer to the instruction manual of each program.

1.4 Delete

You can uninstall it all at once using the LS Studio installation package or you can uninstall them individually using the respective installation files.

(1) In Control Panel - [Programs and Features], right-click LS Studio and click "Uninstall" or double-click.

Uninstall or change a program								
To uninstall a program, select it from the list and then o								
Organize	 Uninstall Change 							
Name	*							
🛎 LS Studi	o							
UyncOr	Uninstall							
MaDow	Change ^{y)}							

(2) The uninstall wizard will run as shown below.

Studio - Ir	nstallShield Wizard
Remove	the Program
	Click Remove to remove LS Studio from your computer. After removal, this program will no longer be available for use.
InstallShie	eld Remove Cancel

(3) The deletion proceeds as shown below.

📴 LS Studio - Ir	stallShield Wizard
Uninsta	ling LS Studio
	The program features you selected are being uninstalled.
	Removing package XG5000
InstallShie	Cancel

Note

The method of deleting individual software installation through LS Studio is the same as the deletion method of each software. For details, refer to the instruction manual of each software.

2. Basic usage

This chapter describes basic usage for using the project integration function. Integrated XG5000 has added functions to run XP-Builder and Driveview7, and its basic usage is same as existing XG5000.

2.1 Add item

To use added integration function, add an item to the XG5000 project. Items are added at the same level as PLC.

[Steps]

1. Select [Project] - [Add Item] - [PLC / Add-on] on the menu.



2. In the "Add Configuration" dialog box, select the item you want to add.

[Dialog box]



[Dialog Box Description]

- a. Type: Select the type of item you want to add. When PLC is selected, the Add PLC dialog box is displayed. Items to be added are displayed as integrable items installed on your PC
- b. Detail: Displays the details of the item to be added.
- c. OK: Closes the Add Configuration dialog box and displays the detail dialog box.
- d. Cancel: Cancel adding configuration and close the dialog box.
- 3. Select the name and product (model) to create.

[Dialog box]

	Adding External Iter	ns	<u> </u>
a	Name	NewHMI	
b	From Model:	eXP20-TTA	•
C	From File:		
			OK Cancel
	N		d e

[Dialog Box Description]

- a. Name: Enter the name to be added in the XG5000 project. You can not duplicate items in the current project.
- b. From Model: Select the detail model. Different items are displayed depending on the items added.
- c. From File: Adds an item from the selected file. The model information and name in the file are displayed.

If the name you add is duplicated in the project, a number is appended to avoid duplication.

- e. OK: Close the dialog box and add the entry as input..
- f. Cancel: Cancels the input and closes the dialog box.



Note

- Items and sub-items added to the project tree are displayed differently depending on the selected item.
- When you add an item from a file, the selected file is copied and saved with the XG5000. The selected file remains without being deleted.
- Items that are added can be activated or deactivated on an item-by-item basis. The available additional functions can be set in the common functions related to the XG5000 in the menu [Tools] -[Options] dialog box.

Common Ed	di Default folder for new projects:
Font/Color Online	C:₩xG5000₩ Select Folder
En LD	Misc
SFC	Number of backup file(s): 3 (0 - 20)
	Number of recent projects to display: 5 (0 - 20)
	Open previous project when starting the XG5000
	Enabled Additional Exercises
	Path:
4 III +	
Reset category	OK Cancel Apply

2.2 Run item

To run the program associated with the added item, double-click each item in the project tree. If the connected program is already running, it will be activated.



Note

 Duplicated execution may not be possible depending on the characteristics of the application such as Driveview7.



2.3 Save as PLC Project

Project files saved in the integrated project environment can only be used with the XG5000 individually installed version V4.10 or later. If you want to use with XG5000 V4.11 or earlier, you can save it as PLC project file by using [Save as PLC Project] function.

(1) Execute [Project] - [Save as PLC Project] in the integrated environment project PLC, HMI, and inverter are added.



(2) In the dialog box below, enter a file name and click Save.

😪 Save as PLC Project		X
😋 🗢 🕨 🕨 Librario	es ► Documents ► New folder	✓ 4y Search New folder
Organize 🔻 New fo	lder	!≡ ▾ 🔞
🔶 Favorites	Documents library	Arrange by: Folder ▼
Downloads	Name	Date modified
🕞 Libraries	No item	is match your search.
Documents		
E Pictures		4
File <u>n</u> ame: PLC	C Project	•
Save as <u>t</u> ype: Inte	egrated XG5000 project file (*. xgpx)	▼
Hide Folders		Save Cancel

(3) Open the saved file in an individually installed version of XG5000 V4.10 or earlier.

3. XG5000 variables / comments share

This chapter explains how to use variables / comments set in XG5000 with XP-Builder.

[Steps]

1. On the XG5000, select the variable / comment you want to share with the HMI.

The XG5000 allows you to select global variables, flags, and local variable entries.

	NewProgram[Progr	am] 🗡	Global/Di	rect Variables	×							
V	V Global Variable D Direct Variable Comment											
	Variable Kin	d V	/ariable	Туре	Address	Initial Value	Retain	Used	EIP	НМІ		
1	VAR_GLOBAL	Switc	h1	BOOL			Γ	Г				
2	VAR_GLOBAL	Switc	h2	BOOL			Γ	Г	Γ			

14	_BASE_INFO_E	BOOL	%FX49	Γ	Base information error
15	_BASE_POWER	BOOL	%FX47		Base power error
16	_BASE_SKIP_IN	DWORD	%FD478		Base Skip information
17	_BAT_ER	BOOL	%FX69	$\overline{\mathbf{v}}$	Battery error
18	_BPRM_ER	BOOL	%FX40		Basic parameter error
19	_CHK_ANC_ER	BOOL	%FX16386	Γ	Request for significant error detection in external devic

알아두기

-In the XG5000 project, variables sent and received by HMI or communication can be checked in the system variable list.

P	Sys	stem Variable 🗙									
		Variable	Address	Туре	The number of types	PLC Name/PLC Type	Range	High-s peed Link	P2P	EIP	нмі
	1	_BAT_ER	%FX69	BOOL	1	NewPLC/XGI-CPUE	FLAG/SYS	Г	Г		~
11	2	Switch1		BOOL	1	NewPLC/XGI-CPUE	GLOBAL	Г	Γ	Г	•
	3	Switch2	0	BOOL	1	NewPLC/XGI-CPUE	GLOBAL	Г	Γ	Γ	•

2.Select the HMI item in the project tree and double-click it.

3.Double-click the tag item in the project tree of XP-Builder to display the tag window.

4.Select the [NewPLC] item in the tag group to see the list of variables selected on the XG5000.

XP-Builder [XG5000 - test.NewHMI]											
PROJECT EDIT VIEW COMMON TOOL COMMUNICATION WINDOW TOOLBOX HELP											
& A 🖌 속 🕞 丣 止 릐 추 ㅠ 카 수 H 王 봄 II 昔 🖫 🐂 🐂 🐂 🗤 🗊 📼 🗣 🎧 Default 🔍 Korean (Korea) 🖓 📴 🎁 💽											
🖁 💀 🔍 🔜 🔍 目 🖸 🐼 🕨 🕺	» 🗄 📩 🤜 🖽		•								
Project 👻 🕂 🗙	B-1 Tag:1										
⊡ 🚰 NewHMI	🖃 Tag Group	No	Group	Name	D	evice Type					
en te Project Property	Default	1	NewPLC	NewPLC.Switch1	BIT						
Project Summary	System	2	NewPLC	NewPLC.Switch2	BIT						
XGT Panel Settings	NewPLC	3	NewPLC	NewPLC.SystemBAT_ER	BIT						
Text Table		4	NewPLC			-					
Insert Text Table		5	NewPLC	•							
□-{()] Script		6	NewPLC	•							
Insert script		7	NewPLC	•							
Tag		8	NewPLC	•							
		9	NewPLC	•							
Logging		10	NewPLC								
		11	NewPLC								

5.It is used in drawing by using registered tag list in XP-Builder.

t Devic	e				
Tag					
0: LSIS	: XGI / XGR / XEC	C (CPU)			-
01 2020	,				
Name:					
Group:	NewPLC				-
No	Group	Name	Address	Description	
1	NewPLC	NewPLC.Switch1	%AX0		
2	NewPLC	NewPLC.Switch2	%AX1		
				OK	Cancel

Bit Switch	د	<
Basic	Device: T =NewPLC.Switch1 Copy to Lamp	
Display	- Action Tuna	
Text	On Off Momentary Alternative	
Detail		
Action Condition	Use Lamp Condition	
	Bit Device: D =NewPLC.Switch1 Copy to Main	
	○ Word Device:	
	Size 16bit - Type: Unsigned DEC -	
	0 NOP 0 Egp.	
	Use Lamp Offset:	
	Description	
1		_
	OK Cancel	

4. Communication parameter setting

This section explains how to set the communication parameters using the INV items registered in the project. For the procedure to add an INV item, see section 2.1 Add item.

[Steps]

1. Add communication module supporting LS bus to current project (Cnet only)



2. Select Use P2P in the communication module's default setting.

Standard Settings Advanced Settings				
Connection Settings	Channel 1	Channel 2		
Туре:	RS232C 🔻	RS485 -		
Speed:	9600 🔻	9600 🔻		
Terminating Resisters:	Disable 🔻	Disable 👻		
Station No.:	0	0		
Channel 2: Use P2P	•	Modbus Settings		

3. Add P2P parameter for communication module and select LS BUS item in P2P channel.

Channel	Setting					×
	I					
Chann	Operation Mode	P2P Driver	TCP/UDP	Client/Server	Partner Port	Partner IP address
1	XGT server					
2	Use P2P					
		User frame definition XGT client LS Bus Client Modbus ASCII client Modbus RTU client			OK	Cancel

- 4. Enter the default settings for P2P and click the [Set] button.
- 5. In the Variable Setting dialog box, right-click "Read Area" and select "Inverter Setting".

Variable Se	etting		X
Oppon	ent PLC Detail Setti	ings	
Oppone Series:	ent CPU		View by Product
Oppone Type:	nt CPU	Ţ	
Read area Save area	a: Remote Address a: Local Address (Ne	ewPLC)	
	Read area	Save area	Address
1	<u>I</u>	nverter Settings	
1		ОК	Cancel

6. Select inverter, group and variable in the inverter variable selection dialog box and select the OK button.

Variable:	CMN_21					
Invertor						ОК
inverter. (S100		Commo	n 🔻		Cancel
	Variable	Address	Read/Write	Comment	*	
5 CN	MN_05	0x0005	R/W	Command frequency		
6 CN	MN_06	0x0006	R/W	Operation command		
7 CN	MN_07	0x0007	R/W	Acceleration time setting		
8 CN	MN_08	0x0008	R/W	Deceleration time setting		
9 CN	MN_09	0x0009	R/W	Output Current		
10 CN	MN_10	0x000A	R/W	Output frequency		
11 CN	MN_11	0x000B	R/W	Output voltage		
12 CN	MN_12	0x000C	R/W	DC Link Voltage		
13 CN	MN_13	0x000D	R/W	Output power		
14 CN	MN_14	0x000E	R/W	Operating status		
15 CN	MN_15	0x000F	R/W	Trip information	E	
16 CN	MN_16	0x0010	R/W	Input terminal		
17 CN	MN_17	0x0011	R/W	Output terminal		
18 CN	MN_18	0x0012	R/W	A value that corresponds to the input 0 \sim + 10V		
19 CN	MN_19	0x0013	R/W	A value that corresponds to the input 0 \sim - 10V		
20 CN	MN_20	0x0014	R/W	12		
21 CN	MN_21	0x0015	R/W	RPM		
22 CN	MN_30	0x001A	R/W	Select the Hz/rpm		
23 CM	MN_31	0x001B	R/W	Number of motor poles		

7. After setting the save area, select the OK button.

Variable Se	etting		×
Oppon	ent PLC Detail Setti	ngs	
Oppone Series:	nt CPU		View by Product
Oppone Type:	nt CPU		
Read area	a: Remote Address		
Save area	: Local Address (Ne	wPLC)	
	Read area	Save area	Address
1	S100.CMN_21	D01004	N00001
		OK	Cancel
		UK	