# 31 Symbol Registration

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## 31.1 Symbol and Symbol Sheet

#### 31.1.1 What is a Symbol?

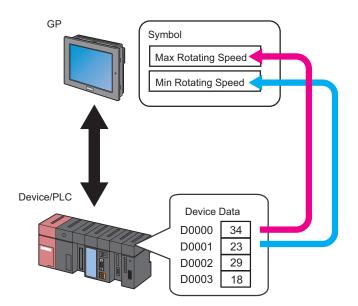
You can collectively register each device data used inside the GP and Device/PLC, or variable information used in the logic program as "Symbol".

A symbol is a "Variable" to control all data at once such as device address and data type, etc. and 'Pro-Server EX' reads and writes each device data through the registered symbol.

Since you can set the device address directly on 'Pro-Studio EX', symbol registration is not essential. When you wish to change all device data at once, however, it is recommended to use symbols as much as possible for easier maintenance.

The data included in a symbol are: Symbol name, Device address, Data type, Number of data etc.

**NOTE** • The contents can be confirmed easily if a symbol has a concrete symbol name ("Maximum number of rotation", "Minimum number of rotation", etc.)



• You can use the system variables (HMI system variables and logic system variables) that is predefined in 'GP-Pro EX'. For details, refer to the GP-Pro EX Reference Manual.

#### Variables on 'GP-Pro EX'

- ◆ Variables created with a logic program
  - Variable format

Variables registered by a user with optional names. To use these variables, import a screen project file (\*.PRX) created with 'GP-Pro EX'.

For details on importing, refer to "30.3 Getting Data from a Screen Project File (PRX)".

Address format

Variables automatically assigned to a device in the 'GP-Pro EX'. You do not need to import a screen project file (\*.PRX) of 'GP-Pro EX', because 'Pro-Server EX' prepares these variables in advance.

For restrictions of the variables created with the logic program, refer to "31.7 Restrictions".

#### System variables

Variables having the predefined functions on the 'GP-Pro EX'. You do not need to import a screen project file (\*.PRX) of 'GP-Pro EX', because 'Pro-Server EX' prepared these variables in advance.

System variables on 'GP-Pro EX' are displayed, when you select "#INTERNAL" of the GP3000 Series, WinGP or LT3000 on the screen, which prompts you to specify the device address, and click the list button of [Device Address], for setting ACTION or a trigger condition.

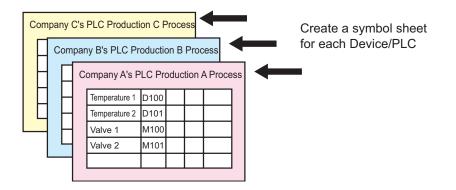
Device Name	The OFF the Constitution Address store
#INTERNAL	Turn OFF the Specified Device Address after Processing.
Device Address	
<b></b>	▼ Local:Sheet2
Data Type [16Bit(Signed)	Global:#HMI_SYSTEM
1	⊡- Global:#LOGIC_SYSTEM

For details about variables on the 'GP-Pro EX', refer to the "GP-Pro EX Reference Manual".

**NOTE** • To specify a device address, "#LOGIC" is selected as the Device/PLC in 'GP-Pro EX', however, "#INTERNAL" is selected in "Pro-Server EX".

#### 31.1.2 What is a Symbol Sheet?

Symbols are controlled collectively on each Device/PLC. This control unit is called a "Symbol Sheet". You can create more than one symbol sheet, and symbol control is possible per sheet in accordance with the intended use.

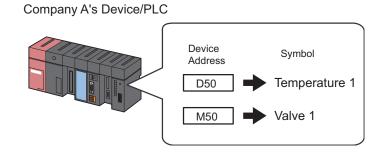


• You can register 1500 symbols at maximum, in one symbol sheet. When the number of symbols exceed 1500, add a new symbol sheet to register.

"31.2.5 Adding Symbol Sheets"

# 31.2 Registering Symbols on a Symbol Sheet

## 31.2.1 Registering Symbols



This section describes how to register symbols taking the above case as an example.

1 Click the [Symbol] icon on the status bar.

💱 Pro-Studio EX 🛛 ?.npx	
File         Edit         Tool         Programming Assist           Image: Start         Image: Start         Image: Start         Image: Start         Node	Setting Help
Add Node Add Node Contraction	Pro-Server EX © GP3000 Series
🚱 Find Node	AGP1
	Link between Device Info and Symbol Info     Project File     Read Info Online     Update

2 Select the Device/PLC in which you want to register symbols, from the tree display on the left of the screen.

Sho cu li u					
饕 Pro-Studio					
File Edit Tool	Programn	ning Assist	Setting	Help	
Start Start	<b>»</b>	) Node	<b>&gt;&gt;</b>	> Symbol	<b>&gt;&gt;</b>
Symbol				Node Name	AGP
Group		Ungroup		Sheet Name	Shee
Insert		Delete		SHOOLINGING	.j
Сору	Cut	Paste		Symbo	ol
Symbol Sheet					
Add		Delete			
Check Duplic	cation/List U		es		
E ▼ Pro-Ser ⊡	ver EX 1 (198.168.0 #INTERNA 0 Series P1 (192.168 #INTERNA PLC1:Shee o	- .1) L:Sheet1 .0.100) L:Sheet2	; <b>FUI</b>		

The symbol registration screen of the selected Device/PLC appears on the right of the screen. The area surrounded by red line is a "Symbol sheet" where symbols are registered.

💱 Pro-Studio EX 🛛 ?.npx	
File Edit Tool Programming Assist Sett	ing Help
Start >> 🐚 Node >>	Symbol >> ≷ Feature >> 📄 Save >> 🚵 Transfer
Symbol	Node Name AGP1 Device Name PLC1
Group Ungroup	Sheet Name Sheet3 🔽 Set it as a global symbol sheet.
Insert Delete	
Copy Cut Paste	Symbol Data Type Consec Device Address No. of Data Comment
Symbol Sheet	
Add Delete	
Check Duplication/List Used Addresses	
Global Constant Setting Screen	
Pro-Server EX	
PC1 (198.168.0.1) #INTERNAL:Sheet1	
E ▼ GP3000 Series	
🖻 🔚 AGP1 (192.168.0.100)	
#INTERNAL:Sheet2	
PLC1:Sheet3 A Series CPU I	
- • LT3000	
• GP Series	
└── ► Global Symbol	

**3** Enter "Temperature 1" as a symbol name in the [Symbol] field on the symbol sheet.

2	Pro-Stu	udio I	X ?	.npx							
F	ile Edit	Tool	Pro	grammir	ng Assist	Settin	ig He	lp			
	<b>2</b>	Start	<b>»</b>		Node	<b>&gt;&gt;</b>	$\triangleright$	Symbol	<b>&gt;&gt;</b>	*	Feature
Г	Symbol						N	lode Name	AGF	91	
	G	iroup		ι ι	Ingroup		s	heet Name	She	et3	
	h	nsert			Delete		ľ	noocritaine	·1		
	Cop	у	(	Cut	Paste			Symbo	ol		Data Ty
L	-Symbol 9	Sheet					Ter	nperature1			
	Add Delete							_			
	Check I	Duplic	ation/	/List Use	d Address	ses					
T,					_	_				_	
	Glo	bal Co	onstar	nt Setting	) Screen						

4 Click the [Data Type] field and select the data type from the displayed list.

Symbol >> _	Feature ン	Sa Sa	ve ≫ 🚺	🥹 Tr	ansfer		Mon Sta
Node Name AGP1	Device	Device Name PLC1					
Sheet Name Sheet3		🗖 🗖 Set it	as a global :	symbol s	heet.		
Symbol	Symbol Data Type		Consec utive Device Address No. of Data				Commen
Temperature1		Data T					
		16Bit(Sig	gned) N	32Bit(9	igned)	Bit	
		16Bit(Ur	signed) V	22Bit(L	Insigned)	Float	
		16Bit(HE	:X)	32Bit(H	HEX)	Doub	le
				-C	(CD)	String	

**5** Click the button that appears by clicking the [Device Address] field, and enter "D50" as a device address to be registered as a symbol. Then click the [Ent] button.

Help Symbol	Feature 渊	🔡 Sa	ve 💙 🆄 Ti	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		: :::::::
Sheet Name Shee	3	🗌 🗖 Setit	as a global symbol :	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)			Input Address	
	-	_		D	50
İ				Back	Clr
				A B C	7 8 9
		_		D E F	4 5 6
	-				1-2-2
					0 Ent
				i	

NOTE

You can also enter the device address directly.

- When the variable created with a logic program (#I\_\*\*\*\*, #Q\_\*\*\*\*) it inputs, after selecting "#internal" sheet of Device/PLC which uses variable in tree indication on the right screen input.
- To enter the Ethernet/IP device address of Rockwell Automation using the calculator button, select the Device/PLC to which you connect the Ethernet/IP of Rockwell Automation, and select the device address, and then click the [Ent] button.
- **6** Repeat the above steps (Step 1 to 5) to register the symbol "Valve 1" in the same way.

ng	Help > Symbol >> 🧳	Feature ⋗ [	Sa	ave ➤ 🄖 Ti	ransfer	Monitor Status
L	Node Name AGP1		Device	Name PLC1		
L	Sheet Name Sheet3		Set it as	a global symbol shee	ət.	
	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
	Temperature1	16Bit(Signed)		D0050	1	▲
ſ	Valve1	Bit		м0050	1	
4	Symbol       Save       Save       Transfer       Monitor         Node Name       AGP1       Device Name       PLC1         Sheet Name       Sheet3       Set it as a global symbol sheet.         Symbol       Data Type       Consec       Device Address       No. of Data       Comment         Temperature1       16Bit/Signed1       D0050       1       Set					
					1	
					1	
					1	

This is the end of the symbol registration to the symbol sheet.

#### NOTE

• You can edit the contents of the registered symbols.

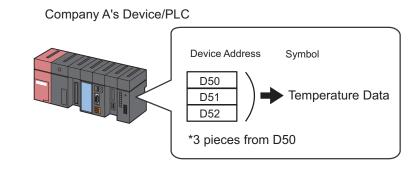
Click [Symbol], [Consecutive] or [Device Address] and edit the contents on the "Edit Symbol" screen.

@"" "31.6.2 "Edit Symbol" Screen"

#### 31.2.2 Registering Sequential Devices

#### Registering sequential addresses individually as symbols

To perform symbol registration continuously for sequential device addresses, you can register these addresses together without specifying each address individually.



This section describes how to register the symbols of sequential addresses taking the above case as an example.

1 Register the device address "D50" with the symbol name "Temperature 1".

ng /	Help Symbol ⋗ 🧳	Feature ン [	Sa	ave 🔉 🔖 Ti	ransfer	Monitor Status
	Node Name AGP1			Name PLC1		
L	Sheet Name Sheet3		Set it as	a global symbol shee	et.	
	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
	Temperature1	16Bit(Signed)		D0050	1	<u> </u>
L					1	
L					1	
				 	1  1	

For the detailed procedure, please refer to Step 1 to 5 in "31.2.1 Registering Symbols".

2 Then, register the device address "D51" as a symbol.

Click the [Symbol] field in the next row of "Temperature 1", and enter "Temperature 2" as a symbol name.

ing	Help > Symbol >> 🛃	Feature 🔉 📔	Sa	ave > 🔖 T	ransfer	Monitor Status
I	Node Name AGP1 Sheet Name Sheet3			Name PLC1 a global symbol shee	st	
I			Consec			
L	Symbol	Data Type	utive	Device Address	No. of Data	Comment
	Temperature1	16Bit(Signed)		D0050	1	<b>_</b>
	Temperature2	<u> </u>			1	
					1	
н					1	
н					1	
					1	

**3** Click the [Consecutive] field.

A panel to specify the continuous attribute appears.

The next device address "D0051" to the symbol "Temperature 1" is indicated on the left of this panel.

> Symbol >>	Feature 😕	1		ransfer	Monito Statu:
Node Name AGP		Device	Name PLC1		
Sheet Name Shee	13	🗖 🗖 Seti	: as a global symbol	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0050	1	
Temperature2			Consecutive Release + D0051 Cancel	0 D0050.00 1 D0050.01 2 D0050.02 3 D0050.03 1 4 D0050.04 5 D0050.05 1 6 D0050.05 1	

4 Select [+ D0051] as a sequential device address.

Node Name AGP	1	Device	Name PLC1		
Sheet Name Shee	et3	🗌 🗖 Seti	t as a global symbol	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0050	1	
Temperature2	16Bit(Signed)		Consecutive		×
			Release + D0051 Cancel	0 D0050.00 1 D0050.01 2 D0050.03 3 D0050.03 4 D0050.04 5 D0050.05 1 6 D0050.06	

"+", indicating the device continuance, appears in the [Consecutive] field and the device address "D51" is displayed in gray.

ng	Help					
1	> Symbol >> 🦂	Feature ≫ 📑	- Sa	ive 🔉 🆄 Ti	ransfer	Monitor Status
L	Node Name AGP1		Device	Name PLC1		
l	Sheet Name Sheet3		Set it as	a global symbol shee	et.	
L	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
L	Temperature1	16Bit(Signed)		D 0050	1	
L	Temperature2	16Bit(Signed)	+	D0051	1	
L					1	
L					1	
L					1	
					1	
					1	

**NOTE** • When symbols are continuously registered, the symbol data type specified at the first setting is automatically input in the [Data Type] field.

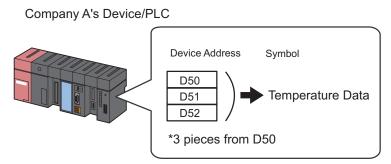
**5** Repeat Step 2 to 4 to set the next symbol.

ng Help Symbol >>	≷ Feature 🔉 [	S،	ave 🔉 🔖 T	ransfer	LOX Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3		Set it as	a global symbol shee	ət.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0050	1	<b>_</b>
Temperature2	16Bit(Signed)	+	D0051	1	
Temperature3	16Bit(Signed)	+	D0052	1	
				1	
				1	
				1	
				1	
				1	

Now, the sequential devices addressed "D50", "D51" and "D52" have been registered individually as symbols.

#### Registering sequential addresses collectively as a symbol

You can register sequential device addresses as one symbol by specifying the number of devices.



This section describes how to register the symbols of sequential addresses taking the above case as an example.

1 Enter "Temperature Data" as a symbol name in the [Symbol] field on the symbol sheet.

						_ 🗆 ×
ng	Help					
1	🕨 Symbol 🌺 🐳	Feature ン 📔	- Sa	ive 🔉 🆄 Ti	ransfer	Monitor Status
L	Node Name AGP1		Device	Name PLC1		
L	Sheet Name Sheet3		Set it as a	a global symbol shee	et.	
L	Symbol	Data Type	Consec	Device Address	No. of Data	Comment
		Data Type	utive	Device Address		Comment
l	TemperatureData	J			1	<u> </u>
					1	
L.	<u> </u>				1	
L.					1	
L.					1	
					1	
					1	

2 Click the [Data Type] field and select the data type from the displayed list.

Help Symbol 🔊 🧳	Feature 🔉	Sa	ive 🔉 🚺	Tra	ansfer		Monit Stati
Node Name AGP1		Device	Name PLC1			1 <del>4 - 271</del> 0	
Sheet Name Sheet3		🗌 🗖 Setit	t as a global s	symbol s	heet.		
Symbol	Data Type	Consec utive	Device Ad	dress	No. of Da	ita Co	mment
TemperatureData		Data T	уре				
		Deselee				in an	
		16Bit(Sig	gned) N	32Bit(9	(igned)	Bit	
		16Bit(Ur	nsigned) W	32Bit(L	Jnsigned)	Float	
		16Bit(HE		32Bit(H	HEX)	Double	
		16Bit(BC	CD)	32Bit(B	BCD)	String	
	, 		1	1	1		

**3** Click the button that appears by clicking the [Device Address] field, and enter "D50" as a start device address to be registered as a symbol. Then click the [Ent] button.

Help Symbol	Feature 🔊	B Sa	ve 🔉 🖄 Ti	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		4 <mark>0 6390 3</mark>
Sheet Name Sheet	3	⊡ Setit	as a global symbol :	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
TemperatureData	16Bit(Signed)	<u>.</u>	6 29 44	Input Addres	s
	-	_		D	▼ [50]
Í.				Back	Clr
				A B C	789
		_		DEF	4 5 6
	-			24:	1-2-3
[					0 Ent
ļ					

4 Enter the number of sequential device addresses "3" in [No. of Data].

) Help Symbol >>	Feature ン [	- Sa	ave 🔉 🏠 T	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3		Set it as	a global symbol shee	et.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
TemperatureData	16Bit(Signed)		D0050	3 🕨	
				1	
				1	
				1	
				4	

Now, the sequential devices addressed "D50", "D51" and "D52" have been registered collectively as one symbol.

When you register the next symbol, the address following the last address input in Step 4 (in this case, "+D0053") is displayed on the continuous attribute panel that is displayed by clicking the [Consecutive] field.

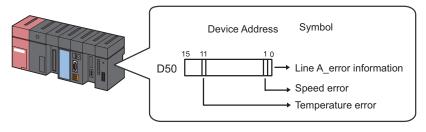
Help Symbol	Feature		ave 渊 🚺 Ti	ransfer	Monito Statu:
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3	}	🗌 🗖 Set i	t as a global symbol :	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
TemperatureData	16Bit(Signed)		D0050	1	
			Consecutive Release + D0051 Cancel	0 D0050.00 1 D0050.01 2 D0050.02 3 D0050.03 1 4 D0050.04 5 D0050.05 1 6 D0050.06	

#### 31.2.3 Registering Bit Offset Symbols

When "Word type" is specified as a symbol data type, you may find a symbol of which word device is specified as a word-type symbol first, and the bit of the particular position among such word devices is specified with the offset number beginning with 0. This symbol is called "Bit offset symbol".

For instance, the device address "D50" in the figure below has the error information of Line A. (This device address is the "Parent device".) When the first bit has the "Speed Error" information and the 11th bit has the "Abnormal Temperature" information as further information, you can symbolize particular bits by specifying the bit offset.





• When you specify the bit offset, the symbol data type is "Bit" type.
• 32-bit device (Integer\_Variables) can be accessed in bit unit. Add "single space + Xm" following the variable to allow you to access it in bit unit. Example) When accessing the 7th bit of Integer\_Variables Integer\_Variables .X6
• When the data type of the parent device is BCD or String type, bit offset symbols cannot be used.

This section describes how to register bit offset symbols taking the above case as an example.

1 Specify "Line A\_Error Information" as a device address of "Parent Device".

a Help	Feature ン 📔	- Sa	ive 🔉 🖄 Tr	ansfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3		Set it as a	a global symbol shee	t.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
LineAErrorInformation	16Bit(Signed)		D0050	1	<u> </u>
				1	
				1 1	
				1 1 1 1	
				1 1 1 1 1 1	

For the detailed procedure, please refer to Step 1 to 5 in "31.2.1 Registering Symbols".

2 Enter the bit offset symbol name "Speed Error" in the [Symbol] field.

1 Help Symbol Symbol Node Name AGP1	Feature >> [		we >> 🆄 T Name PLC1	ransfer	Anonitor Status
Sheet Name Sheet3		Set it as	a global symbol shee	et.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
LineAErrorInformation	16Bit(Signed)		D0050	1	<b>▲</b>
SpeedError				1	
				1	
				1	
				1	
				1	
				1	
				1	

3 Click the [Consecutive] field.

A panel to specify the continuous attribute appears.

Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3		🗖 Seti	t as a global symbol	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Commer
LineAErrorInformation	16Bit(Signed)		D0050	1	
SpeedError			Consecutive Release + D0051 Cancel	0 D0050.00 1 D0050.01 2 D0050.02 3 D0050.03 1 4 D0050.04 5 D0050.05 1 6 D0050.05	

4 Double-click the target offset (in this case "D0050.01") from the list on the right of the continuous attribute panel.

Symbol >>	Feature ン	Sa Sa	ave 💙 🏹 T	ransfer	Monito Statu
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3		Seti	t as a global symbol	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
LineAErrorInformation	16Bit(Signed)		D0050	1	
SpeedError		- 20 B	Consecutive		×
			Release + D0051 Cancel	0 D0050.00 1 D0050.01 2 D0050.02 3 D0050.03	2
		_		1 4 D0050.04 5 D0050.05 1 6 D0050.06	ļ

"01" indicating "Offset" is entered in the [Consecutive] field.

) Help Symbol >> 🥥	Feature 🔉 📔	Sa	ave ➤ 🄖 Ti	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3		Set it as	a global symbol shee	et.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
LineAErrorInformation	16Bit(Signed)		D0050	1	<u> </u>
SpeedError	Bit	01	D0050.01	1	
				1	
				1	
				1	
				1	
				1	
				1	

5 Repeat the above steps (Step 2 to 4) to register the symbol "Abnormal Temperature" in the same way.

) Help Symbol >>	Feature ン [	Sa	ave 🔉 🔖 Ti	ransfer	Monitor
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3		Set it as	a global symbol shee	it.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
LineAErrorInformation	16Bit(Signed)		D0050	1	
SpeedError	Bit	01	D0050.01	1	
AbnormalTemperature	Bit	11	D0050.11	1	
				1	
				1	
				1	
				1	
				1	

This is the end of the registration of bit offset symbols into the symbol sheet.

#### 31.2.4 Inserting and Deleting Rows on a Symbol Sheet

#### Row Insertion

1 Select the row just below the place where you want the new one inserted.

3 Help Symbol	Feature 渊 [	- Sa	ave 🔉 🖄 T	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3	<b>V</b>	Set it as	a global symbol shee	ət.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0050	1	
Temperature2	16Bit(Signed)	+	D0051	1	
Temperature3	16Bit(Signed)	+	D0052	1	
				1	
				1	
				1	
				1	
				1	



• To insert more than one row, select the number of rows you want to insert by dragging the mouse.

2 Click the [Insert] button in [Symbol].

💱 Pro-Studio EX 🛛 test.npx	
<u>File Edit T</u> ool <u>P</u> rogramming Assist	<u>S</u> etting <u>H</u> elp
Start 🔉 🟹 Node >	≽ Symbol 🕹
Symbol	Node Name
Group Ungroup	Sheet Name
Insert Delete	oncorrianoj
Capy Call Paste	Symbol
Symbol Sheet	LineAErrorInfor
Add Delete	SpeedError
Check Duplication/List Used Addresses	
Global Constant Setting Screen	

The selected row(s) is displaced by the newly inserted row(s) and shifted down.

; Help Symbol >>	Feature ン [	Sa	ave 🔉 🔖 Ti	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3	<b>V</b>	Set it as	a global symbol shee	et.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0050	1	
Temperature2	16Bit(Signed)	+	D0051	1	
				1	
Temperature3	16Bit(Signed)	+	D0052	1	
				1	
				1	
				1	
				1	

- Deleting Specified Rows on a Symbol Sheet
- **1** Select the row you wish to delete.

) Help Symbol >>	≷ Feature ン [	Sa	ave ➤ 🄖 T	ransfer	× Monitor Status
Node Name A 21		Device	Name PLC1		
Sheet Name Sheet3		Set it as	a global symbol shee	et.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0050	1	
Temperature2	16Bit(Signed)	+	D0051	1	
Temperature3	16Bit(Signed)	+	D0052	1	
				1	
				1	
				1	
				1	

2 Click the [Delete] button in [Symbol].

🎕 Pro-Studio EX 🛛 te	est.npx	
<u>F</u> ile <u>E</u> dit <u>T</u> ool	Programming Assist	<u>S</u> etting <u>H</u> elp
对 Start 🔉	Node >	Symbol 2
Symbol		Node Name
Group	Unaroup	Sheet Name
Insert	Delete	Sheet Hame
Сору		Symbol
Symbol Sheet		LineAErrorInfom
Add	Delete	SpeedError
Check Duplication/	List Used Addresses	
Global Constan	t Setting Screen	

The "Delete Symbol" screen appears.

Delete Symbol 🛛 🛛 🕅					
- 🏒 🕗 wil	nperature2   be deleted. hat OK?				
Yes No					

 $3 \ {\rm Click \ the \ [Yes] \ button}.$ 



The specified row is deleted.

) Help Symbol >>	Feature 渊 [	- Sa	ive ➤ 🔖 T	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3		Set it as	a global symbol shee	et.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0050	1	
Temperature3	16Bit(Signed)	+	D0051	1	
				1	
				1	
				1	
				1	
				1	
				1	

#### 31.2.5 Adding Symbol Sheets

You can create multiple symbol sheets for one entry node.

Registering symbols for purposes allows you to smooth the handling of symbol information.

This section describes addition of symbol sheets.

**NOTE** • You can add 140 sheets at maximum, for one entry node.

1 Click the [Add] button in [Symbol Sheet].

黎 Pro-Studio E>	(test.np>	:		
<u>F</u> ile <u>E</u> dit <u>T</u> oo	l <u>P</u> rogra	mming Assist	<u>S</u> etting	<u>H</u> elp
Start Start	»	Node ン		Symbol 🔉
Symbol			No	de Name 🖌
Group		Ungroup	Sh	eet Name
Insert		Delete		oor realine j
Сору	Cut	Cut Paste		Symbol
	_		Line	AErrorInfom-
Add	Spee	edError		
Check Duplica				
Global Cor				

The "Add Symbol Sheet" screen appears.

Add Symbol Sheet	X
Node Name AGP1	▼
Device Name PLC1	•
Sheet Name Sheet4	
	OK Cancel

2 Click the list button of [Node Name] or [Device Name] to select the node or device where you want to add a symbol sheet.

Add Symbol Sheet		×
Node Name AGP1		•
Device Name PLC1 #INTERNAL		
Sheet Name PLC1		
	OK	Cancel

**3** Enter a symbol sheet name to be added in [Sheet Name]. (By default, the sheet name is "Sheet [No.]").

Add Symbol Sheet		×
Node Name AGP1		V
Device Name PLC1		•
Sheet Name Sheet4		
	ОК	Cancel

4 Click the [OK] button.

Add Symbol Sheet					×
Node Name AGP1				•	
Device Name PLC1				•	
Sheet Name Sheet4	 				
	OK	 )	Cancel		

A new symbol sheet is now added with its sheet name displayed in the list on the left of the screen.

Pro-Studio EX ?.1 Edit Tool Prog	npx ramming Assist Sett	ing Help					
🗾 Start ン	Node >	Symbol ≫ 🖕	≷ Feature ン [	📑 Sa	ave 🔉 🆄 Ti	ransfer	Mon Sta
Symbol		Node Name AGP1		Device	Name PLC1		
Group	Ungroup Delete	Sheet Name Sheet4		Set it as	a global symbol shee	et.	
Copy Cu	ut Paste	Symbol	Data Type	Consec utive	Device Address	No. of Data	Commer
Symbol Sheet						1	
Add	Delete		<u> </u>	<u> </u>		1	
			-			1	
Check Duplication/L	ist Used Addresses					1	
Global Constant	Setting Screen		-	<u> </u>		1	
	ookang ookoon		- 	<u> </u>		1	
Pro-Server EX			1			1	
😑 🚚 PC1 (198.1						1	
						1	
🚊 🔄 AGP1 (192						1	
	RNAL:Sheet2 Sheet3 A Series CPU I					1	
	Sheet4 A Series CPU [					1	
WinGP		<b>1</b>	<u> </u>	<u> </u>		1	
			<u> </u>	<u> </u>		1	
► GP Series						1	
• Global Symbol				<u> </u>		1	
						1	
				<u> </u>		 	
-			1			1	

### Deleting Symbol Sheets

**1** Select the symbol sheet you wish to delete from the list on the left of the screen.

🕸 Pro-Studio	EX ?.npx					
File Edit Tool		ning Assist	Setting	Hel	p	
Start	<b>»</b>	Node	<b>»</b>		Symbol	<b>»</b>
Symbol				N	ode Name	AGF
Group		Ungroup		Sk	ieet Name	She
Insert		Delete		51	icot realite	·]
Сору	Cut	Paste			Symbo	ol
Symbol Sheet Add Check Duplic	ation/List U	Delete sed Address	ses			
Global C	onstant Setti	ng Screen		L		
	1 (198.168.0 #INTERNA ) Series P1 (192.168 #INTERNA PI C1-Shee PLC1-Shee ) ies	L:Sheet1 .0.100) L:Sheet2 13 A Series I				

2 Click the [Delete] button in [Symbol Sheet].

🎕 Pro-Studio B	X test.np	x	
<u>F</u> ile <u>E</u> dit <u>T</u> o	ol <u>P</u> rogr	amming Assist	t <u>S</u> etting <u>H</u> elp
对 Start	<b>»</b>	ϳ Node 🔉	Symbol
Symbol			Node Name
Group		Ungroup	Sheet Name
Insert		Delete	
Сору	Cut	Paste	Symbol
 Symbol Sheet			LineAErrorInfor
Add		Delete N	SpeedError
	_ <u></u>		
Check Duplic	ation/List L	Ised Addresses	
Global C	onstant Sett	ing Screen	

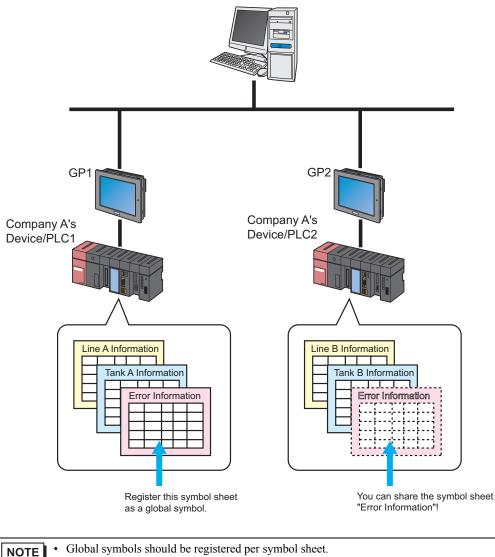
The selected symbol sheet is now deleted.

#### 31.3 Sharing Symbols on the Entire Network

#### 31.3.1 What is a Global Symbol?

'Pro-Server EX' allows the same type of Device/PLC to share a symbol. This symbol is called a "Global symbol". Also, a symbol sheet consisting of such global symbols is called a "Global symbol sheet". You can commonly use a same global symbol sheet in all the registered Device/PLCs.

When you register the symbol sheet "Error Information" of "Manufacturer A Device/PLC 1" as a global symbol sheet, for instance, this "Error Information" symbol is also registered for multiple same Device/PLCs. Thus, even if many entry nodes are registered on the network, preparing one global symbol sheet saves you creating new symbol sheets as long as the contents are the same.



Global symbols should be registered per symbol sheet.

You can use global symbols commonly between different entry nodes, but the Device/PLCs should be of the same type.

### 31.3.2 Registering as a Global Symbol

This section describes how to register a global symbol.

- 1 Register a symbol on the symbol sheet.
- 2 Check [Set it as a global symbol sheet] on the right of the screen.

; Help					_ 🗆 X
≽ Symbol ≫ 葇	Feature ≫ 📔	Sa	ave ᠉ 🄖 Ti	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3	T.	Set it as	a global symbol shee	at.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0050	1	<b>▲</b>
Temperature2	16Bit(Signed)		D0051	1	
Temperature3	16Bit(Signed)		D0052	1	
				1	

The created symbol sheet is now registered as a global symbol sheet, with the name displayed in "Global symbol" in the tree display on the left of the screen.

🖢 Pro-Studio I	EX ?.npx					
File Edit Tool		ing Assist	Setting	Hel	p	
对 Start	<b>»</b>	Node	» [		Symbol	<b>&gt;&gt;</b>
Symbol —				N	ode Name	AG
Group		Ungroup		cı	neet Name	She
Insert		Delete		51	ieet Mairie	-Jour
Сору	Copy Cut Paste				Symbo	ol
-Symbol Sheet				Ten	nperature1	
Add				Ten	nperature2	2
				Ten	nperature3	:
Check Duplic	cation/List Us	ed Address	es	L		
Global Co	onstant Settin	g Screen		┢		
GP3000     GP3000     GP3000     GP3000     GP300     GP300     GPSei     GPSei     GPSei	1 (198.168.0. #INTERNAL 0 Series P1 (192.168.0 #INTERNAL PLC1:Sheet 0 ies	:Sheet1 ).100) :Sheet2 3 A Series (				

NOTE .	To cancel the registration of the global symbol sheet, uncheck [Set it as a global symbol sheet].
--------	---

# 31.4 Copying to a Symbol Sheet in Another Network Project File

You can copy the contents of the created symbol sheet to the symbol sheet in another network project file. This section describes how to copy all the symbols registered in the symbol sheet.

1 Move the mouse pointer on the symbol sheet, and press the [Ctrl] and [A] keys to select the copy-source symbol sheet.

					_ 🗆 ×
; Help					
≽ Symbol 🌺	≷ Feature ン [	- Sa	ave ᠉ 🆄 Ti	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3	V	Set it as	a global symbol shee	et.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0051	1	
Temperature2	16Bit(Signed)		D0052	1	
Temperature3	16Bit(Signed)		D0053	1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
					•

NOTE

• You can also select symbols partially by dragging the mouse.

2 Click the [Copy] button in [Symbol].

🎕 Pro-Studio EX 🛛 ?.npx	
File Edit Tool Programming Assist Setting	g Help
Start 💙 🟹 Node ン	Symbol .
Symbol	Node Name
Group Ungroup	Sheet Name
Insert Delete	Sheet Name
Copy Cut Paste	Symbol
Symbol Sheet	Temperature1
Add Delete	Temperature2
	Temperature3
Check Duplication/List Used Addresses	
Global Constant Setting Screen	

**NOTE** • You can also select it from the menu list displayed by right-clicking the mouse.

**3** Select [Open] from the [File] menu.

🂱 Pro-Studio EX 🛛 ?.npx		
File Edit Tool Programming New Open	Assist Settin	g Help
Save As Save As Input History at Save Time Print Export Nodes and Symbols Import Nodes and Symbols 2.npx ProductManagemant.npx	bup te Paste	Node Name A Sheet Name S Symbol Temperature1 Temperature2 Temperature3
Exit Global Constant Setting S	Idresses icreen	
	DO) neet2	

The "Open File" screen appears.

Save in:	🔄 NPXD ataBa	se		•	(= 🗈 🖶	6 🎫 🕶	
	Name		Size	Туре		Modified	
<u></u>	Strategy 1.npx		316 KB	NPX File		4/3/2006	11:36 AM
History	2.npx		316 KB	NPX File		4/3/2006	11:36 AM
<b>~</b>	💱 004.npx		316 KB	NPX File		4/3/2006	11:36 AM
Desktop	<b>%</b> 003.npx		316 KB	NPX File		4/3/2006	11:36 AM
My Documents							
My Computer							
My Computer	•						
	File name:	003.npx	:		-	] [	Save
4y Network P	Save as type:	Mahuad	k Project File (*.np				Cancel

4 Select a copy-destination network project file, and click the [Open] button.

<b>ve As</b> Save in:	🔄 NPXDataBase	2	<b>_</b>	← 🗈 💣 🎟	?
	Name	Size	Туре	Modi	
<u></u>	😻1.npx	316 KB	NPX File	4/3/2	2006 11:36 AM
History	12.npx	316 KB	NPX File	4/3/2	2006 11:36 AM
<b>7</b>	😻003.npx	316 KB	NPX File	4/3/2	2006 11:36 AM
Desktop	1004.npx	316 KB	NPX File	4/3/2	2006 11:36 AM
My Documents					
My Computer	•				
	,	-			
	File name:	004.npx		•	Save
My Network P	Save as type:	Network Project File (*.np	ox)	•	Cancel

The selected network project file opens.

5 Click [Symbol] on the status bar.

🂱 Pro-Studio EX 🛛 ?.npx					
File Edit Tool Programming Assist	Setting Help				
Start 🔊 🟹 Node	🎽 🔑 <sub>b</sub> Symbol 🔉 ≷ Feature 🗴				
Add Node					
Find Node	Node				
Pro-Server EX     GP3000 Series     GP3000 Series     GP3000 Series	In order to read and write the data information of the PC and the GPs beforehand. The PC and the GPs re				

6 Select the copy-destination symbol sheet.

🎕 Pro-Studio I	EX ?.npx					
File Edit Tool	Programm	ning Assist	Setting	Help	<u> </u>	
Start Start	<b>»</b>	Node	>>		Symbol	<b>&gt;&gt;</b>
Symbol				No	ode Name	AG
Group		Ungroup			eet Name	Sh
Insert		Delete				,
Сору	Cut	Paste			Symbo	ol
Symbol Sheet			_			
Add		Delete		⊢		_
Add     Delete       Check Duplication/List Used Addresses       Global Constant Setting Screen						
•						

7 Click the [Paste] button in [Symbol].

🎕 Pro-Studio	EX 004.np			
File Edit Tool			5etting	Help
对 Start	<b>»</b>	Node	»» []	Symbol
Symbol				Node Name
Group		Ungroup		Sheet Name
Insert		Delete		011001110
Сору	Cut	Cut Paste		Symb
Symbol Sheet				
Add		Delete		<u> </u>
Check Duplic				
Global C				

```
NOTE • You can also select it from the menu list displayed by right-clicking the mouse.
```

The symbol sheet or symbols selected in Step 1 are now pasted.

a	g Help							
1	-	🕈 Feature ン 📄	Sav	re ≫ 🄖 Tra	ansfer	Monitor Status		
I	Node Name AGP1		Device Name PLC1					
I	Sheet Name Sheet2							
I	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment		
н	Temperature1	16Bit(Signed)		D0050	1			
н	Temperature2	16Bit(Signed)		D0051	1			
н	Temperature3	16Bit(Signed)		D0052	1			
н					1			
н					1			
					1			
н					1			
н					1			
н					1			
н					1			
н	L			<u> </u>	1			
н					1			
н					1			
н					1			
н					1			
					1			
				I	1			
			<u> </u>		1	I		
			<u> </u>	I	1			
	•	1	1	1	P.			

NOTE

When the Device/PLCs are not of the same type, error may occur due to the difference of their device addresses. (Error will be displayed in red.)

In this case, please change device addresses after copying.

•

# 31.5 Checking Registered Symbols

When many symbols are registered in a symbol sheet, you might register the symbol names or device addresses mistakenly in duplication. In this case, 'Pro-Server EX' does not operate properly.

Thus 'Pro-Studio EX' has a function to check the registration duplication in advance. This function also displays/ outputs the results of duplication check in a CSV file.

This section describes how to check duplication of symbol names or device addresses.

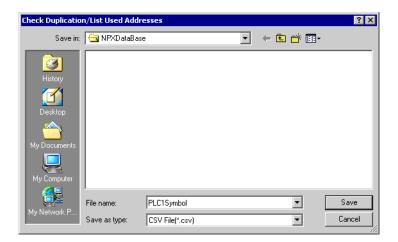
- 1 Display the symbol sheet you wish to check.
- 2 Click the [Check Duplication/List Used Addresses] button.

2	Pro-Studio	EX O	04.np	к			
Fi	File Edit Tool Programming Assist Setting					ng He	elp
I	🗾 Start	<b>&gt;&gt;</b>		Node	<b>&gt;&gt;</b>		Symbol
Г	Symbol					١	lode Name
	Group			Ungroup		6	heet Name
	Insert		Delete		ľ	neethanie	
	Сору С		Cut Paste				Symbo
	-Symbol Sheet					Te	mperature1
	Add		Delete			Te	mperature2
				00000		Te	mperature3
Check Duplication/List Used Addresses							
Global Constant Setting Screen							

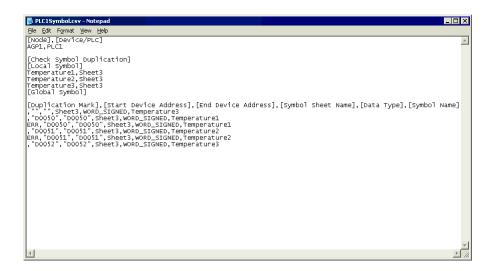
The "Check Duplication/List Used Addresses" screen appears.

Check Duplicatio	n/List Used Addr	esses			? ×
Save in:	🔄 NPXD ataBas	e	• +	🗈 💣 🎟 •	
Desktop					
My Documents					
My Computer					
	File name:			•	Save
My Network P	Save as type:	CSV File(*.csv)		•	Cancel

**3** Specify the storage location and enter the file name to which the results are output. Then click the [Save] button.



The check results are now displayed and saved as a CSV file into the specified storage location.



The check results are output in the following format:

[Node Name] and [Device/PLC]

Displays the names of the entry node and Device/PLC having the symbol sheet that has been checked.

[Symbol Duplication Check] Displays the overlapped symbol names. Will be blank if there is no name overlapped.

[Duplication Mark], [Start Address], [End Address], [Symbol Sheet Name], [Data Type] and [Symbol Name] Symbol check data is displayed in the order above. The symbols are sorted by [Start Address]. The overlapped symbols are indicated in [Duplication Mark] as "ERR".

# 31.6 Setting Guide

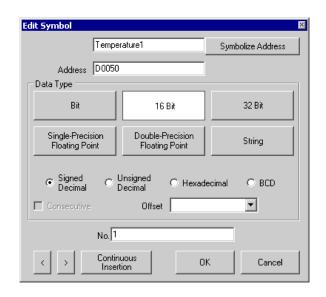
## 31.6.1 Symbol Registration Screen

🗫 Pro-Studio EX ?.npx							
File Edit Tool Programming Assist Settin	ng Help						
Start 🔉 🔪 Node 🔉	녿 Symbol ᆇ	Feature 🔉 📔	- Sa	ive > 🆄 Ti	ransfer	Monitor Status	
Symbol	Node Name AGP1		Device	Name PLC1			
Group Ungroup	Sheet Name Sheet3		Set it as	a global symbol shee			
Insert Delete	onocritanoj		00111 001	a global dynibol driod			
Copy Cut Paste	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment	
Symbol Sheet					1		
Add Delete					1		
					1		
Check Duplication/List Used Addresses					1		
			<u> </u>	<u> </u>	1		
Global Constant Setting Screen			<u> </u>		1		
Pro-Server EX			<u> </u>		1	i II	
PC1 (198.168.0.1) #INTERNAL:Sheet1					1	i II	
GP3000 Series					1		
🖻 – 🔙 AGP1 (192.168.0.100)					1		
#INTERNAL:Sheet2					1		
PLC1:Sheet3 A Series CPU I     WinGP					1		
					1		
• GP Series					1		
					1		
Sheets A Series CPU Direct	l		<u> </u>		1		
		 	<u> </u>		1		
					1		
▲	•	1			1.		

Setting item		Setting content
	Group	Group registered symbols. Refer to "28.2 Grouping Symbols" for more details.
	Ungroup	Ungroup grouped symbols.
	Insert	Insert a row directly above a selected row on a symbol sheet.
0	Delete	Delete selected rows on a symbol sheet.
Symbol	Сору	Copy selected rows on a symbol sheet.
Cut		Cut selected rows on a symbol sheet.
	Paste	Paste to a symbol sheet the contents being copied or cut. When one row is selected, the copied or cut contents are inserted in the row directly above the specified row. When multiple rows are selected, the copied or cut contents are displaced with the selected cells deleted.
Symbol Add Sheet		Add symbol sheets to the registered Device/PLCs. Clicking this button displays the "Add symbol sheet" dialog box. Specify [Node Name], [Device Name] and [Sheet Name].
	Delete	Delete a specified symbol sheet.
Check Duplication/List Used Addresses		Check duplication of symbol names and device addresses. Refer to "31.5 Checking Registered Symbols" for more details.
Global Constant Setting Screen		Displays the "Global Constant Setting" screen. Refer to "31.6.3 Global Constant Setting" for more details.

Setting item	Setting content				
Node Name	Displays the node name holding the symbol sheet currently displayed.				
Device Name	Displays the device name holding the symbol sheet currently displayed.				
Sheet Name	Displays the name of the symbol sheet currently displayed. You can change the sheet name.				
Set it as a global symbol sheet	Regard the symbol sheet currently displayed as a global symbol sheet. Refer to "31.3 Sharing Symbols on the Entire Network" for more details.				
Symbol	<ul> <li>Enter the symbol you wish to register.</li> <li>NOTE</li> <li>Must be entered at maximum 32 Unicode characters.</li> <li>Cannot begin with a number.</li> </ul>				
Data Type	<ul> <li>Select the type of the symbol to be registered.</li> <li>Clicking the [Data Type] field displays a data type list.</li> <li>The following data types are available.</li> <li>Bit</li> <li>16 bits (Signed decimal, unsigned decimal, hexadecimal, BCD)</li> <li>32 bits (Signed decimal, unsigned decimal, hexadecimal, BCD)</li> <li>Single-precision floating point</li> <li>Double-precision floating point</li> <li>Character string</li> </ul>				
Consecutive	<ul> <li>Displays a continuous attribute panel if symbols have been already set. Select a sequential device address or offset of bit type. When a sequential device address is selected, "+" appears indicating the device continuance; when the offset is selected, offset value appears.</li> <li>Sequential specification         Symbol Data Type Consec Device Address No. of Data Type Intervention (Intervention)         Temperature1 1168#(Signed) [D0050 [1]     </li> </ul>				
	Symbol         Data Type         Consec utive         Device Address         No. of Data           LineA_Error         16Bit(Signed)         Double         1           SpeedError         Bit         01         D050         1           Image: The speedError         Bit         01         D050         1				
Device Address	Specify the start address of the device to be specified as a symbol. When [Consecutive] is selected, the address is automatically displayed.				
No. of Data	Specify the number of devices to be specified as symbols. (The default value is "1".) You can enter the preset global constant by clicking the list button. Refer to "31.6.3 Global Constant Setting" about global constants. <b>NOTE</b> • You can set the number of data up to 1020.				
Comment	You can enter necessary information like the meanings of symbols as comments, if any.				

## 31.6.2 "Edit Symbol" Screen

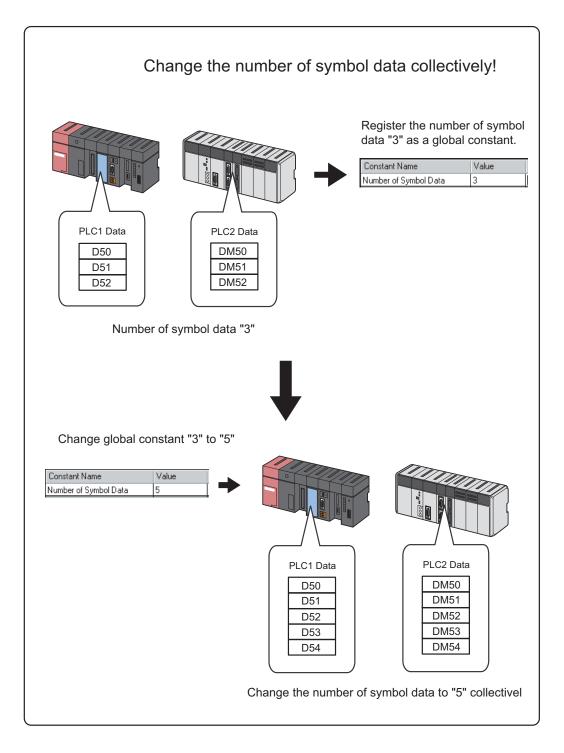


Setting item	Setting content
Symbol Name	<ul> <li>Enter the symbol name you wish to register.</li> <li>NOTE</li> <li>Must be entered at maximum 32 Unicode characters.</li> <li>Cannot begin with a number.</li> </ul>
Symbolize Address	Input a symbol name automatically from the device address and data type. A symbol name is to be input as follows: Ex.) In the case of the device address "D50" and the data type "Word": _D50_WORD
Address	Enter the (start) device address.
Data Type	<ul> <li>Select the data type of device: [Bit], [16 bits], [32 bits], [Single-Precision Floating Point],</li> <li>[Double-Precision Floating Point], and [String].</li> <li>If [16 bits] or [32 bits] is selected, specify the attribute: [Signed Decimal], [Unsigned Decimal], [Hexadecimal], [BCD].</li> </ul>
Consecutive	Check this if the device addresses are sequential.
Offset	Select an offset value by clicking the list button. 16 bits: from 0 to 15 32 bits: from 0 to 31
No.	Specify the number of devices to be specified as symbols. (The default value is "1".) You can enter the preset global constant by clicking the list button. Refer to "31.6.3 Global Constant Setting" about global constants. <b>NOTE</b> • You can set the number up to 1020.
<	Displays the symbol setting of the upper row.
>	Displays the symbol setting of the lower row.

Setting item	Setting content
Continuous Insertion	<ul> <li>Set the sequential device address or offset address-added symbol in the next row of the symbol sheet with the current set contents.</li> <li><b>NOTE</b></li> <li>When the symbol name is specified in [Symbolization of Address], the values following the device address and data type are automatically changed.</li> </ul>
	• "+" appears in the [Consecutive] field on the symbol sheet.

## 31.6.3 Global Constant Setting

By registering the data number of symbols as a "Global constant", you can change all the data numbers at once by changing the constant when such a change has been made to the system as changing a symbol data number.



To set a global constant, click the [Global Constant Setting Screem] button on the symbol registration screen.

Global Constant Setting				×
Сору	Olehel Ossetest	1.1.4		
Cut	Global Constant	Global Constant List		
Paste	Constant Name	Value	Comment	
İnsert	_			_
Delete				
The constants defined in this list can be used as the No. of data or arrays in a symbol sheet.			<u>ОК</u>	Cancel

Setting item	Setting content
Constant Name	Enter the name of the constant to be set.
Value	Enter a constant.          NOTE         • The valid values range from 1 to 4096.
Comment	You can enter necessary information like the meanings of constants as comments, if any.
Сору	Copy the global constant in a selected row.
Cut	Cut the global constant in a selected row.
Paste	Insert a copied or cut global constant to the row directly above a selected one.
Insert	Insert a row directly above a selected row on a symbol sheet.
Delete	Delete a selected row.

## 31.7 Restrictions

#### Symbol whose data type is undefined

When you import a screen project file of 'GP-Pro EX' or 'GP-PRO/PBIII for Windows', the word symbols in the project file are to be imported as an undefined data type of symbol.

• Use with 'Pro-Studio EX'

To use an undefined data type of symbol with 'Pro-Studio EX', you are requested to input the data type. (When you use a defined symbol, data type entry is not available.)

• Use with Pro-Server API

There are 2 types of Pro-Server API: API requiring separate specification of data type and that requiring no specification.

API type	Description
With separate specification	This API prioritizes the data type separately specified over the symbol data type.
Without specification	When the specified symbol is a 16-bit device, the symbol becomes 16-bit signed; when the specified symbol is a 32-bit device, it becomes 32-bit signed.

#### • When MES ACTION is specified

If you select a symbol where the data type is undefined when MES ACTION is specified, the data type and the number of data are fixed to [16Bit(Signed)] and [No.: 1], respectively.

## Maximum number of data

The following table shows the maximum number of data settable according to the symbol type.

Symbol type	No. of data
Bit symbol	255
Bit offset symbol	1
16-bit signed symbol	1020
16-bit unsigned symbol	1020
16-bit BCD symbol	1020
16-bit HEX symbol	1020
32-bit signed symbol	510
32-bit unsigned symbol	510
32-bit BCD symbol	510
32-bit HEX symbol	510
Single-precision floating point symbol	510
Double-precision floating point symbol	255
Character string symbol	255
(Data type is "Undefined".)	1

#### Symbol whose data number is undefined

The data number of the following symbols is regarded as "Undefined".

- Symbols created by importing a screen project file of 'GP-Pro EX' or 'GP-PRO/PBIII for Windows'.
- Symbols created by converting a network project file made by the old version of 'Pro-Server'.
- Symbols whose data number has not been specified in the symbol setting.
- Use with 'Pro-Studio EX'

To use an undefined data type of symbol with 'Pro-Studio EX', you are requested to input the data type. (When you use a defined symbol, data type entry is not available.)

• Use with Pro-Server EX API

Such symbols are regarded as a symbol of which data number is "1".

#### ■ About the system variables of "GP-Pro EX"

The device quantity of one system variable of 'GP-Pro EX' basically as 1 is handled even with 'Pro-Server EX', but "#L\_IOInfo" and "#L\_IOStatus" is handled as 4.

#### Global Symbol Sheets Settings

If you specify any of the following protocol devices in a global symbol sheet, the project file specified on the entry nodes setting screen for the node must meet the requirements below:

- Manufacture: Rockwell Automation, Inc
- Device Type: EtherNet/IP
- Device Setting: ControlLogix/CompactLogix Series Native

#### \*Requirements

The same IOI file (Data tag definition file) must be set for both the node where the global symbol sheet is specified and the node that references that global symbol sheet. You specify the IOI file in the 'GP-Pro EX' Device/PLC setting.