# 32 Symbol Registration

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## 32.1 Symbol and Symbol Sheet

#### 32.1.1 What is a Symbol?

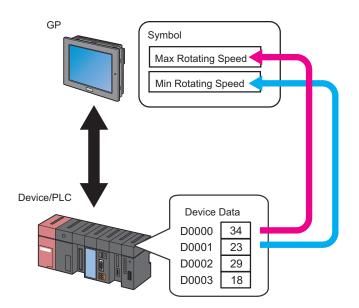
You can collectively register each device data used inside the GP and Device/PLC, or variable information used in the logic program as "Symbol".

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.

#### 'GP-Pro EX' Variables

- 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 "31.3 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 "32.7 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 GP4000/3000 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.

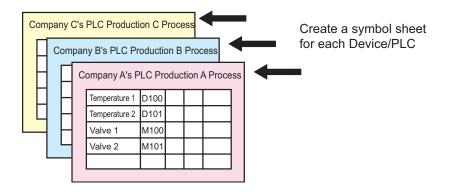
Device Name	The OFF the Constraint Database store	
#INTERNAL	Turn OFF the Specified Device Address after Processing.	
Device Address		
	▼ Local:Sheet2	
Data Type [16Bit(Signed]	Global:#HMI_SYSTEM	
,		

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".

#### 32.1.2 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.

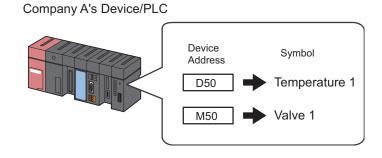


• You can register 1500 symbols at maximum, in one symbol sheet. When the number of symbols exceed 1500, add a new symbol sheet to register.

"32.2.5 Adding Symbol Sheets"

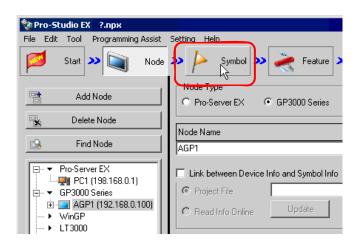
# 32.2 Registering Symbols on a Symbol Sheet

#### 32.2.1 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.



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

A						
🎨 Pro-Studio						
File Edit Tool	Program	ning Assist	Setting	Hel	P	_
💋 Start	<b>»</b>	) Node	>>		Symbol	<b>&gt;&gt;</b>
Symbol				N	ode Name	AGP
Group		Ungroup		SI	neet Name	Sher
Insert		Delete		51	leet Name	
Сору	Cut	Paste			Symbo	ol
 Symbol Sheet						
Add		Delete		F		
Check Duplic	cation/List U		ses			
	1 (198.168.0 #INTERNA O Series P1 (192.168 <u>#INTERNA</u> PLC1:Shee ) ies	L:Sheet1 .0.100) L:Sheet2	PUI			

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 ≫ 📑	Sa	ve 渊 🆄 T	ransfer	Monitor Status
Symbol	Node Name AGP1		Device	Name PLC1		
Group Ungroup	Sheet Name Sheet3		Setitasa	a global symbol shee	*	
Insert Delete			00111 001			
Copy Cut Paste	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Symbol Sheet					1	<u> </u>
Add Delete					1	
					1	II
Check Duplication/List Used Addresses					1	
Global Constant Setting Screen					1	III
Global Constant Setting Screen					1	
□ ▼ Pro-Server EX			——i		1	i II
E					1	i
GP3000 Series					1	
🖻 🔙 AGP1 (192.168.0.100)					1	
#INTERNAL:Sheet2					1	
PLC1:Sheet3 A Series CPU [     WinGP					1	
					1	
• GP Series					1	
Global Symbol					1	
					1	
	I				1	
	II				1	
	<b>Ⅰ</b>		· · ·		1.	

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

٠	Pro-St	udio E	X ?	.пря							
File	e Edit	Tool	Pro	grammi	ng Assist	Settin	ig He	lp			
ß	2	Start	<b>»</b>		Node	<b>&gt;&gt;</b>	1	Symbol	<b>»</b>	*	Feature
	Symbol						٨	Node Name	AGF	71	
	G	quori		1	Jngroup			heet Name	She	et3	
	I	nsert			Delete		ľ	neethani	.]o.i.o		
	Сор	y	(	Cut	Paste			Symb	ol		Data Ty
	Symbol :	Sheet					Ter	mperature1			
		Add			Delete						
	Check	Duplic	ation/	List Us	ed Address	ses					
				_		_					
	Glo	ibal Co	onstar	t Settin	g Screen						

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

🕨 Symbol 🌺 🥃	≷ Feature ン [	🔡 Sa	ive ≫ 🚺	aT 🚺	ansfer		Moni Stat	
Node Name AGP1		Device Name PLC1						
Sheet Name Sheet3		🗌 🗖 Setit	t as a global :	symbol s	heet.			
Symbol	Data Type	Consec utive	Device Ad	Idress	No. of Dat	a	Comment	
72								
Temperature1	-24605.	Data T						
Temperature1		Data T Desclos 16Bit(Sid	qned) N	32811(5	Gigned)	Bit		
Temperature1		Data T Desclos 16Bit(Sid	t	32Bin(9	Signed) Jnsigned)	Bit		
Temperature1		Data T Desclos 16Bit(Sid	gned) (signed)	32Bit(S 22Bit(I 32Bit(I	Jnsigned)	19 8233	e	

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 🔊	B Sa	ve 🔉 🆄 Tr	ansfer	Monitor Status
Node Name AGP	1	Device I	Name PLC1		
Sheet Name Shee	13	🗖 🗖 Setit	as a global symbol s	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		(; 3) <mark></mark>	Input Address	
	_			D • 5	a
				Back	Cir
				A B C	7 8 9
	_			DEF	4 5 6
	-				1 2 3
					Ent

**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 device address using the calculator button, select the Device/PLC you are connected to, either Siemens AG SIMATIC S7 MPI Direct or Rockwell Automation's Ethernet/IP, 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					_ 🗆 ×
1	Symbol >>	Feature ≫ 📑	- Sa	ave ≫ 🄖 Ti	ransfer	Monitor Status
I	Node Name AGP1		Device	Name PLC1		
I	Sheet Name Sheet3	<b>v</b>	Set it as	a global symbol shee	et.	
I	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
L	Temperature1	16Bit(Signed)		D0050	4	<b></b>
1	Valve1	Bit		M0050	1	
ľ					4	
н					1	
н					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.

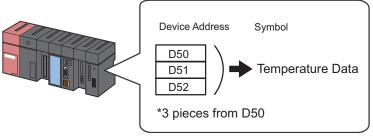
<sup>(3)</sup> "32.6.2 "Edit Symbol" Screen"

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

For the detailed procedure, please refer to Step 1 to 5 in "32.2.1 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 ⋗ 葇	🍖 Feature ン 📑	Sa	ave 🔉 🔖 Ti	ransfer	Monitor Status
I	Node Name AGP1 Sheet Name Sheet3			Name PLC1 a global symbol shee	et.	
L	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
	Temperature1	16Bit(Signed)		D0050	1	
ľ	Temperature2				1	
					1	
					1	
н				<u> </u>	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.

Help	Feature 🔉	. <mark></mark> Sa	ave ≫ 🄖 T	ransfer	Monitor Status
Node Name AGP1		Device	Name PLC1		. 980
Sheet Name Sheet	3	🗌 🗖 Seti	t 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 4 D0050.04 5 D0050.05 1 6 D0050.05 1	

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

Symbol Symbol Node Name AGP	Feature >>		we » 🏹 Ti Name PLC1	ransfer	Monito Status
Sheet Name Shee	43	E Set i	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)	1. 25	Consecutive		×
			Release + D0051 Cancel	0 D0050.00 1 D0050.01 2 D0050.02 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								
🌔 Symbol ⋗ 🥃	≷ Feature ン [	- Sa	ave 🔉 🆄 T	ransfer	Monitor Status			
Node Name AGP1	Node Name AGP1 Device Name PLC1							
Sheet Name Sheet3	Sheet Name Sheet3 🔽 Set it as a global symbol sheet.							
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment			
Symbol Temperature1	Data Type 16Bit(Signed)		Device Address	No. of Data	Comment			
				No. of Data 1 1	Comment			
Temperature1	16Bit(Signed)	utive	D0050	No. of Data 1 1 1				
Temperature1	16Bit(Signed)	utive	D0050	No. of Data 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
Temperature1	16Bit(Signed)	utive	D0050	No. of Data 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
Temperature1	16Bit(Signed)	utive	D0050	No. of Data 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Comment			

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

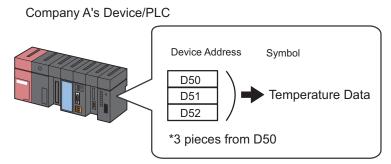
**5** Repeat Step 2 to 4 to set the next symbol.

i Help Symbol <b>&gt; </b>	≷ Feature 🔉 [	] Sរ	ave 🔉 🔖 T	ransfer	L D X
Node Name AGP1 Sheet Name Sheet3			Name PLC1 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	

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						(S. 11. 1)		
1	🕨 Symbol 🌺 ⋞	Feature ン 📄	Sa Sa	ive ᠉ 🆄 Ti	ransfer	Monitor Status		
	Node Name AGP1 Device Name PLC1							
I	Sheet Name Sheet3		Set it as a	a global symbol shee	et.			
J			C					
I	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment		
	TemperatureData				1	<u> </u>		
I.					1			
I.					1			
I.					1			
I.					1	II		
1					1			

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

Help	 			_			
≽ Symbol ≫ 🥃	≷ Feature ン [	📑 Sa	ive 🔉 🖄	Tra	ansfer		Monito Statu
Node Name AGP1	a dag	Device	Name PLC1	4820		17.	2200
Sheet Name Sheet3		🗌 🗖 Setit	t as a global sj	ymbol s	heet.		
Symbol	Data Type	Consec utive	Device Add	tress	No. of Da	ita	Comment
TemperatureData		Data T	уре				
		Deselee	t	<b>`</b>			
		16Bit(Sig	gned) N	32Bit(9	igned)	Bit	
		16Bit(Ur	nsigned) W	32Bit(L	Jnsigned)	Float	
		16Bit(HE		32Bit(H	HEX)	Double	9
		16Bit(BC	CD)	32Bit(B	BCD)	String	
					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 🔉	Sa	ve 渊 🖄 Ti	ransfer				Mor Sta	nitor atus
Node Name AGP1		Device I	Name PLC1		Ş		4 <del>5 - 6990-</del>		
Sheet Name Sheet	3	🗌 🗖 Setit	as a global symbol :	sheet.					
Symbol	Data Type	Consec utive	Device Address	No.	of D	ata	Co	mmer	ntii
TemperatureData	16Bit(Signed)		6 3 <del>4</del>	Input	Add	lress			
 	-			D		•	50		
	-			Ba	ck				Clr
				A	В	С	7	8	9
	_ <mark> </mark>			D	Е	F	4	5	6
l	-			200		10	1	2	3
							þ		Ent
									_

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	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 🕨	<u> </u>			
				1				
				1				
				1				
				1				
				1				

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

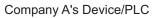
When you register the next symbol, the address following the last address input in Step 4 (in this case, "+D0053") is displayed on the continuous attribute panel that is displayed by clicking the [Consecutive] field.

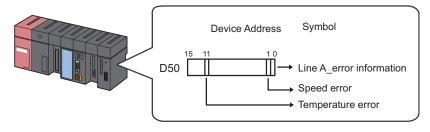
Help Symbol >>	Feature 🔉	. <mark></mark> Sa	ive 💙 🆄 Ti	ansfer	Monito Statu:
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet	3	🗌 🗖 Seti	t as a global symbol :	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
TemperatureData	16Bit(Signed)		D0050	1	
			Consecutive Release + D0051 Cancel	0 D0050.00 1 D0050.01 2 D0050.02 3 D0050.03 1 4 D0050.04 5 D0050.05 1 6 D0050.06	

## 32.2.3 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 Symbol >>	Feature ン [	👔 Save ≫ 🆄 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 Device Address	No. of Data	Comment
LineAErrorInformation	16Bit(Signed)	D0050	<u> </u>	
			1	I
			1	
			1	
			1	
			1	

For the detailed procedure, please refer to Step 1 to 5 in "32.2.1 Registering Symbols".

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

	Feature 🔉 📑			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	
				1	
				1	
				1	
				1	
				1	
				1	
				1	

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

A panel to specify the continuous attribute appears.

Symbol >>  Symbol >>  Node Name AGP1	Feature ➤	1	ave » 🆄 T Name PLC1	ransfer	Mon Sta
Sheet Name Sheet3	-	1	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 D0050.06	

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

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 Ki - 2	Consecutive		×
			Release	0 D0050.00	
			+ D0051	1 D0050.01	

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

) Help	≷ Feature ン 📑	- Sa	ave 🔉 🏠 T	ransfer	Monitor Status			
Node Name AGP1	Node Name AGP1 Device Name PLC1							
Sheet Name Sheet3	Sheet Name Sheet3							
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment			
LineAErrorInformation	16Bit(Signed)		D0050	1				
SpeedError	Bit	01	D 0050.01	1				
				1				
				1				
				1				
				1				
				1				
			<u> </u>	1				

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

) 	Help Symbol	Feature 🔉 📑	Sa	ive ນ 🆄 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	▲
	SpeedError	Bit	01	D 0050 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.

## 32.2.4 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.

	Feature 🔊 [			ransfer	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	▲
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].

物 Pro-Studio EX 🛛 t	est.npx	
<u>F</u> ile <u>E</u> dit <u>T</u> ool	Programming Assist	<u>S</u> etting <u>H</u> elp
💋 Start ン	Node >>	Symbol 2
Symbol		Node Name
Group	Ungroup	Sheet Name
Insert	Delete	chicot (tunio)
	Paste	Symbol
Symbol Sheet		LineAErrorInform
Add	Delete	SpeedError
	<u> </u>	
Check Duplication/	List Used Addresses	
Global Constan	It Setting Screen	

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

; Help ≽ Symbol ⋗ 🥃	Feature 🔊 📑	- Sa	ave ➤ 🆄 Tr	ansfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3	V	Set it as	a global symbol shee	t.	
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	

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

	Feature 🔊 [			ransfer	Monitor Status	
Node Name A 21		Device	Name PLC1			
Sheet Name Sheet3	Sheet Name Sheet3 Set it as a global symbol sheet.					
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment	
Lemperature1	16Bit(Signed)		D0050			
Temperature2	16Bit(Signed)	+	D0051	1		
Temperature3	16Bit(Signed)	+	D0052	1		
				1		
				1		
				1		
				1		

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

Setting <u>H</u> elp
Symbol 2
Node Name
Sheet Name
Sheet Manley
Symbol
LineAErrorInfom
SpeedError

The "Delete Symbol" screen appears.

Delete Symbol 🛛 🛛 🔀					
Yemperature2 will be deleted. Is that OK?					
Yes		No			

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



The specified row is deleted.

Jelp         Symbol       Set Feature         Symbol       Feature         Save       Transfer         Monitor       Status         Node Name       AGP1         Device Name       PLC1         Sheet Name       Sheet3         V       Status							
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			

#### 32.2.5 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].

A.							
🎨 Pro-Studio EX	test.npx						
<u>File Edit T</u> ool	Program	nming Assist	t <u>S</u> ettin∉	<u>s H</u> elp			
Start 2	>	Node 义	• [>	Symbol 🔉			
Symbol			a N	ode Name			
Group	- L	Jngroup	S	heet Name			
Insert	t Delete			loot italiio [e			
Сору	Cut	Paste		Symbol			
Symbol Sheet			Line	AErrorInfom			
bbA		Delete	Spe	edError			
Check Duplicati							
Global Cons	Check Duplication/List Used Addresses Global Constant Setting Screen						

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		
	ОК	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		•
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					
	(	ок Д	$(L_{2})$	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 ?.npx Edit Tool Programming Assist Settir	ig Help					
🔰 Start ン 🟹 Node ン	녿 Symbol ≫ 🥃	Feature 🔉	- Sa	ave 渊 🆄 Ti	ransfer	Moni Stal
Symbol	Node Name AGP1		Device	Name PLC1		
Group Ungroup	Sheet Name Sheet4		Set it as	a global symbol shee	et.	
Copy Cut Paste	Symbol	Data Type	Consec utive	Device Address	No. of Data	Commen
Symbol Sheet					1	
Add Delete			<u> </u>		1	
Check Duplication/List Used Addresses					1	
					1	
Global Constant Setting Screen					1	
Pro-Server EX			<u> </u>		1	
PC1 (198.168.0.1)     IMITERNAL:Sheet1					1	
▼ GP3000 Series					1	
🖻 🚾 AGP1 (192.168.0.100)					1	
			<u> </u>		1	
PLC1:Sheet4 A Series CPU [	D				1	
• WindP	1				1	
▶ LT3000 ▶ GP Series	I				1	
F Global Symbol			<u> </u>		1	
	l'		i —		1	
I			i —		1	
			-i		1	

## Deleting Symbol Sheets

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

A					
💱 Pro-Studio	EX ?.npx				
File Edit Too	l Program	ming Assist	Setting	Help	
💋 Start	<b>»</b>	) Node	<b>&gt;&gt;</b>	Symb	ool >
Symbol				Node Na	ame AGF
Group		Ungroup		Sheet Na	ma She
Insert		Delete		Sheeting	anejono
Сору	Cut	Paste		Syl	mbol
⊂Symbol Shee	t				
Add		Delete			
				<u> </u>	
Check Dupli	cation/List L	Ised Address	ses	<u> </u>	
Global C	onstant Sett	ing Screen	1		
· · · · · ·	rver EX				
	1 (198.168.) #INTERN/				
	0 Series	AL. SHEEU			
	P1 (192.168	3 0 100)		i	
	#INTERN/			i —	
			CDU 1	<u> </u>	
	PLC1:Shee	et4 A Serie N	CPU ( 🌔		
- 🕨 WintiF		h	3		
► LT300	-				
→ GP Se				<u> </u>	
Global	Symbol				

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

🎕 Pro-Studio E>	( test.np:	×		
<u>F</u> ile <u>E</u> dit <u>T</u> oo	ol <u>P</u> rogra	amming Assist	<u>S</u> e	etting <u>H</u> elp
💋 Start	»	Node 🔉	1	Symbol 3
Symbol				Node Name
Group		Ungroup		Sheet Name
Insert		Delete		encorrianoj
Сору	Cut	Paste		Symbol
Symbol Sheet				LineAErrorInfom
Add		Delete N	Ш	SpeedError
			21	
Check Duplica	ation/List Us	ed Addresses		<u> </u>
Global Co	nstant Settir	ng Screen		

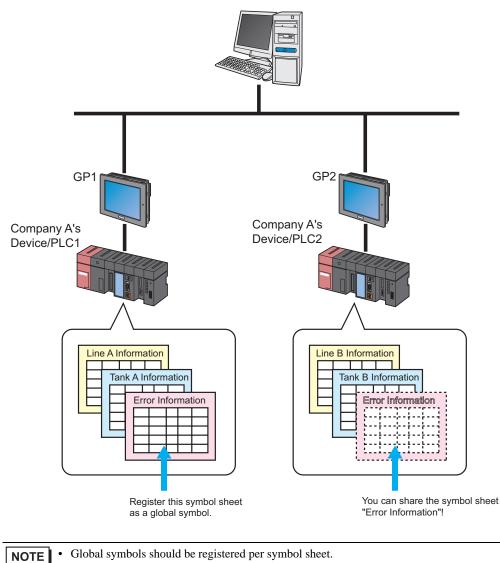
The selected symbol sheet is now deleted.

# 32.3 Sharing Symbols on the Entire Network

#### 32.3.1 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.



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

## 32.3.2 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.

g Help	Feature ン 📮	Sa	ave 🔉 🔖 Ti	ransfer	L D X
Node Name AGP1 Sheet Name Sheet3		Device	Name PLC1		
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	

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	Х ?.прх				
ile Edit Tool	Programming /	Assist Set	ting He	lp	
对 Start	» 🔪	Node 🔉	4	Symbol	<b>&gt;&gt;</b>
-Symbol			1 1	lode Name	AGF
Group	Ung	roup		heet Name	She
Insert	De	lete		neetrianie	
Сору	Cut	Paste		Symbo	ol
-Symbol Sheet			Te	mperature1	
Add	De	lete	Te	mperature2	!
			Te	mperature3	
Check Duplic	ation/List Used A	ddresses			
			11-		
GIODAI LO	instant Setting So	creen	J∐		
→ GP3000 → GP3000 → GP3000 → GP300 → UinGP → LT3000 → GP Seri → Global S	(198.168.0.1) #INTERNAL:Shi Series P1 (192.168.0.10 #INTERNAL:Shi PLC1:Sheet3.A \$	0) eet2 Series CPU			

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

# 32.4 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					
녿 Symbol ≫ 🍦	Feature ⋗ 📑	Sa 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
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	<b></b>
•					

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

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

🎕 Pro-Studio EX 🛛 ?	лрх	
File Edit Tool Pro	gramming Assist – Set	ting Help
对 Start ≫	Node >>	Symbol
Symbol		Node Name
Group	Ungroup	Sheet Name
Insert	Delete	Sheet Hame
	Cut Paste	Symbol
Symbol Sheet		Temperature1
Add	Delete	Temperature2
		Temperature3
Check Duplication/	List Used Addresses	
Global Constar	nt 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 Symbol >
Save As Save As Input History at Save Time Print Export Nodes and Symbols Import Nodes and Symbols 2.npx ProductManagemant.npx Exit	bup te Paste	Node Name A Sheet Name S Symbol Temperature1 Temperature2 Temperature3
Global Constant Setting S	Idresses	
	DO) neet2	

The "Open File" screen appears.

Save in:	: 🔁 NPXDataBa	ise		-	(† 🖻 🔿	<b>•••</b>	
	Name		Size	Туре		Modified	
<u></u>	😻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
7	😻 004.npx		316 KB	NPX File		4/3/2006	11:36 AM
Desktop	💱003.npx		316 KB	NPX File		4/3/2006	11:36 AM
My Documents							
My Computer	•						
		003.npx				1	Save

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

Save in:	: 🔁 NPXDataBase	9	•	( <del>-</del> 🔁 🔿	·	
	Name	Size	Туре		Modified	
	💱1.npx	316 KB	NPX File		4/3/2006	11:36 AM
	💱 2.npx	316 KB	NPX File		4/3/2006	11:36 AM
<b>~</b>	😻003.npx	316 KB	NPX File		4/3/2006	11:36 AM
Desktop	1004.npx	316 KB	NPX File		4/3/2006	11:36 AM
My Documents						
My Computer						
	•					
	File name:	004.npx		-		Save
vly Network P	Save as type:	Network Project File (*.n	່		1	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>R</sub> Symbol 🔉 ≷ Feature 🗴
Add Node	
🐁 Delete Node	
🕞 Find Node	Node
	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 EX 🛛 ?	.npx		
File Edit Tool Pro	gramming Assist	Setting	Help
📁 Start ン	Node Node	»	🕨 Symbol ン
Symbol			Node Name AG
Group	Ungroup		Sheet Name Sh
Insert	Delete		
Сору С	ùut Paste		Symbol
Symbol Sheet			
Add	Delete		
	t Setting Screen ( 168.0.1) ERNAL:Sheet1 ( 2.168.0.100) ERNAL:Sheet2 Sheet3 A Serve D		
•			•

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

🎕 Pro-Studio E	X 004.np	ж		
File Edit Tool	Programm	ing Assist	Setting	i Help
Start	<b>»</b>	Node	<b>»</b>	≽ Symbol
Symbol				Node Name
Group		Ungroup		Sheet Name
Insert		Delete		Sheet Hank
Сору	Cut Paste			Symb
Symbol Sheet			LE I	
Add		Delete		
	1			
Check Duplic	ation/List Us	ed Address	es	
Global Constant Setting Screen				

**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.

Help					_ 🗆 ×
	Feature ⋗ 📑	Sav	re ≫ 🄖 Tra	ansfer	Monitor Status
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet2		Setitasa	global symbol sheet	-	
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	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	
				1	•
•					•

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.

٠

# 32.5 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.

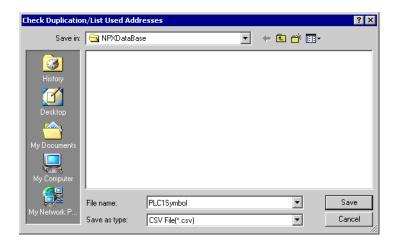
- 1 Display the symbol sheet you wish to check.
- 2 Click the [Check Duplication/List Used Addresses] button.

Ŷ	Pro-Studio	EX 0	04.np	×				J
Fi	ile Edit To	ol Pro	gramm	ing Assist	Settir	ng He	lp	
	🗾 Sta	t 🔉		Node	<b>&gt;&gt;</b>		Symbol	-
Г	Symbol					N	lode Name	
	Group	)		Ungroup		s	heet Name	ſ
	Inser		Delete			Chocking		
	Сору	0	Cut	Paste			Symbo	1
	-Symbol Shee	:t				Ter	nperature1	
	Add		1	Delete		Ter	mperature2	
				201010		Ter	nperature3	
ſ	Check Dup	ication/	'List Us	ed Address	ies d			
	Global I	Constan	ıt Settin	g Screen				

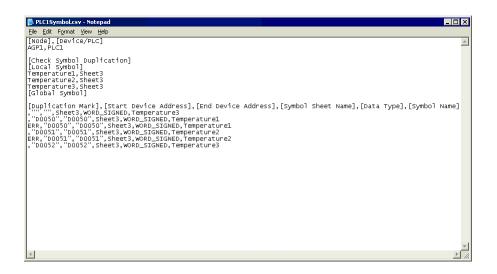
The "Check Duplication/List Used Addresses" screen appears.

Check Duplication	on/List Used Addr	esses			? ×
Save in:	🔁 NPXD ataBas	e	•	+ 🗈 💣 🎫	
Desktop					
My Documents					
My Computer					
My Network P	J 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".

# 32.6 Setting Guide

## 32.6.1 Symbol Registration Screen

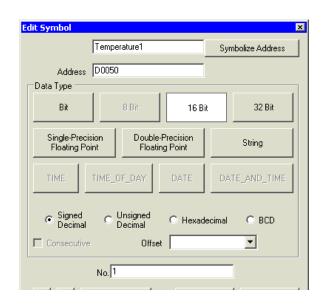
💱 Pro-Studio EX 🛛 ?.npx						
File Edit Tool Programming Assist Settin	ng Help					
Start 🔉 🔪 Node 🔉	녿 Symbol ᆇ 🐳	≷ Feature ン 📔	Sa Sa	ve 🔉 🆄 Tr	ansfer	Monitor Status
Symbol	Node Name AGP1		Device I	Name PLC1		
Group Ungroup	Sheet Name Sheet3		Set it as a	a global symbol shee	it.	
Insert Delete						
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	
					1	
Global Constant Setting Screen			<u>  </u>		1	II
E▼ Pro-Server EX					1	
🖻 – 🚚 PC1 (198.168.0.1)					1	
			i		1	II
GP3000 Series     GP3000 Series     GP3000 Series			<u>                                     </u>		1	
#INTERNAL:Sheet2			i—i		1	
PLC1:Sheet3 A Series CPU I			i—i		1	
→ WinGP     ↓ LT3000			imi		1	
GP Series					1	
🖃 🔻 Global Symbol					1	
🔤 Sheet3 A Series CPU Direct					1	
					1	
					1	
					1	L J

Setting item		Setting content
	Group	Group registered symbols. Refer to "29.3 Grouping Symbols" for more details.
	Ungroup	Ungroup grouped symbols.
	Insert	Insert a row directly above a selected row on a symbol sheet.
	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 Clicking this button display:		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 Duplica Addresses	ation/List Used	Check duplication of symbol names and device addresses. Refer to "32.5 Checking Registered Symbols" for more details.
Global Consta	ant Setting Screen	Displays the "Global Constant Setting" screen. Refer to "32.6.3 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 "32.3 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	Select the type of the symbol to be registered. Clicking the [Data Type] field displays a data type list. The following data types are available. • Bit • 8 bits (Signed decimal, unsigned decimal, hexadecimal, BCD) • 16 bits (Signed decimal, unsigned decimal, hexadecimal, BCD) • 32 bits (Signed decimal, unsigned decimal, hexadecimal, BCD) • Single-precision floating point • Double-precision floating point • Character string • TIME • TIME_OF_DAY • DATE • DATE • DATE_AND_TIME • You can set 8 bits, TIME, TIME_OF_DAY, or DATE when using tags. • When using a tag, when you select a [Device Address], the [Data Type] is automatically set. • When using a tag, you cannot specify the data type. • You cannot register text string tags as a symbol.					
Consecutive	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.         • Sequential specification                    Symbol                 Temperature1                 16Bit(Signed)                 00050                 16Bit(Signed)                 00051                 16Bit(Signed)                 00050                 16Bit(Signed)                 16Bit(Signed)                 00050                 16Bit(Signed)                 00050                 16Bit(Signed)                 00050                 001                 001                 001                 001                 001					

Setting item	Setting content		
Device Address	e 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 "32.6.3 Global Constant Setting" about global constants. NOTE • You can set the number of data up to 2040.		
Comment	You can enter necessary information like the meanings of symbols as comments, if any.		

## 32.6.2 "Edit Symbol" Screen

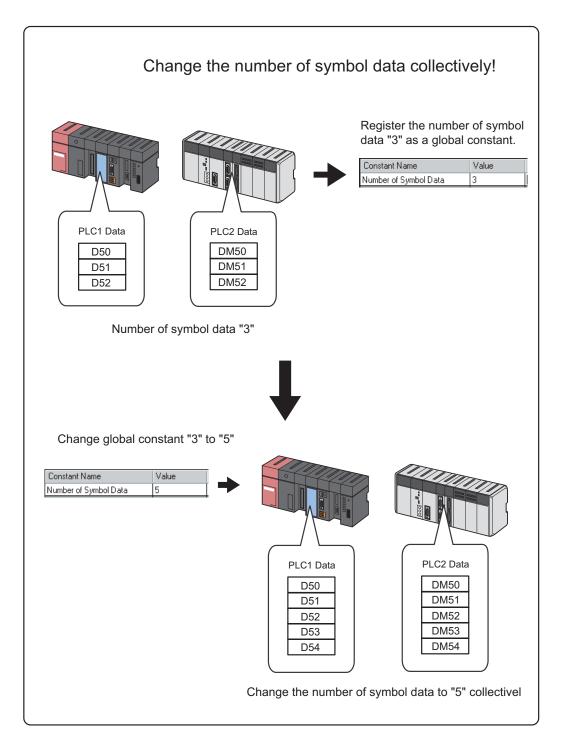


Setting item	Setting content			
Symbol Name	<ul> <li>Enter the symbol name you wish to register.</li> <li>NOTE</li> <li>Must be entered at maximum 32 Unicode characters.</li> <li>Cannot begin with a number.</li> </ul>			
Symbolize Address	Input a symbol name automatically from the device address and 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: If [8 bits],[16 bits] or [32 bits] is selected, specify the attribute: [Signed Decimal], [Unsigned Decimal], [Hexadecimal], [BCD].</li> <li>NOTE</li> <li>You can set 8 bits, TIME, TIME_OF_DAY, or DATE when using tags.</li> <li>When using a tag, when you select a [Device Address], the [Data Type] is automatically set.</li> <li>When using a tag, you cannot specify the data type.</li> <li>You cannot register text string tags as a symbol.</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 1532 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 "32.6.3 Global Constant Setting" about global constants. NOTE • You can set the number up to 2040.			

Setting item	Setting content
<	Displays the symbol setting of the upper row.
>	Displays the symbol setting of the lower row.
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>NOTE</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> <li>"+" appears in the [Consecutive] field on the symbol sheet.</li> </ul>

#### 32.6.3 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 Ossetert			
Cut	Global Constant List			
Paste	Constant Name	Value	Comment	
Insert				
Delete				
The constants defined in this list can be used as the No. of data or arrays in a symbol sheet.			<u>0K</u>	Cancel

Setting item	Setting content	
Constant Name	Enter the name of the constant to be set.	
	Enter a constant.	
Value	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.	

## 32.7 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
8-bit signed symbol	1020
8-bit unsigned symbol	1020
8-bit BCD symbol	1020
8-bit HEX symbol	1020
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

Symbol type	No. of data
Double-precision floating point symbol	255
Character string symbol	255
TIME	510
TIME_OF_DAY	510
DATE	510
DATE_AND_TIME	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.