# 32 Symbol Registration

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# 32.1 Symbol and Symbol Sheet

## 32.1.1 What is a Symbol?

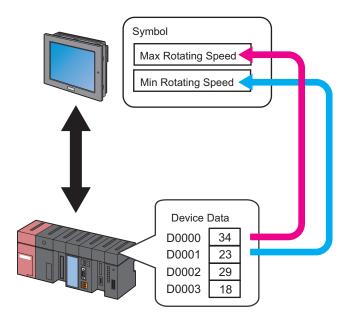
You can collectively register each device data used inside the display unit and Device/PLC, or variable information used in the logic program as "Symbol".

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.

• When defining logic addresses, in 'GP-Pro EX' you would set [Device/PLC] to [#LOGIC], however, in 'Pro-Server EX' you set [Device Name] to [#INTERNAL].

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.

When setting up ACTION or trigger condition, system variables on 'GP-Pro EX' are displayed when you select "#INTERNAL", which is the internal device of a display unit, in [Device Name] and click the list button of [Device Address].

Device Name	Turn OFF the Specified Device Address after	
#INTERNAL	Processing.	
Device Address		
	Local:Sheet2	
Data Type [16Bit(Signed)	Global:#HMI_SYSTEM     Global:#LOGIC_SYSTEM	

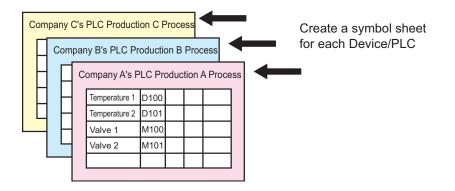
NOTE

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

• In Pro-Server EX, you cannot use 'GP-Pro EX' system variables with names that begin with "[PLC\*]H#\_".

## 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.



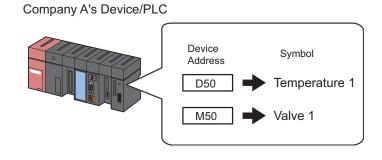
NOTE

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.

💱 Pro-Studio EX 🛛 ?.npx	
File     Edit     Tool     Programming Assist       Start     >>     Start     Node	Setting Help Symbol Node Type C Pro-Server EX © GP3000 Series
Delete Node	Node Name
	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.

A						
饕 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	Group Ungroup				neet Name	Sher
Insert	Insert Delete					10.000
Сору	Cut	Paste			Symbo	ol
 Symbol Sheet						
Add		Delete		F		
Check Duplic Global C	cation/List U onstant Setti		ses			
	1 (198.168.0 #INTERNA 0 Series P1 (192.168 #INTERNA PLC1:Shee	L:Sheet1 .0.100) L:Sheet2	PUT			

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 le Edit Tool Programming Assist Sett	ng Help					
对 Start ≫ 🟹 Node ≫	녿 Symbol ⋗ 葇	≷ Feature ン 📔	🚹 Sa	ave 渊 🆄 Ti	ransfer	Monit Stat
Symbol Group Ungroup	Node Name AGP1 Sheet Name Sheet3			Name PLC1 a global symbol shee	ət.	
Insert Delete Copy Cut Paste	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Symbol Sheet Add Delete					1	
Check Duplication/List Used Addresses					1	
Global Constant Setting Screen				 	1  1  1	
					1	
GP1 (192.168.0.100)     GP1 (192.168.0.100)     GP     HINTERNAL:Sheet2     GP     PLC1:Sheet3 A Series CPU [					1	
WinGP LT3000 					1	
> Global Symbol					1	
					1	

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

-	Pro-St	udio I	X ?	.пря							
File	e Edit	Tool	Pro	igrammi	ng Assist	Settin	ig He	lp			
P	2	Start	<b>»</b>		Node	<b>&gt;&gt;</b>	Þ	Symbol	<b>»</b>	*	Feature
	Symbol						٨	lode Name	AGF	7	
	0	àroup		1	Jngroup		6	heet Name	She	et3	
	I	nsert			Delete		ľ	neeritani			
	Сор	y	0	Cut	Paste			Symb	ol		Data Ty
	Symbol :	Sheet					Ter	mperature1			
		Add			Delete						
				· · · · ·							
	Check	Duplic	ation/	'List Us	ed Address	ses					
						_					
	Glo	bal Co	onstan	it Settin	g Screen						

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

🕨 Symbol 🌺 🥃	Feature ン [	Sa Sa	ive ≫ [	Tr	ansfer	V	Moni Stat
Node Name AGP1	10 Kr.	Device	Name PLC	92325	23	<u>198</u>	8
Sheet Name Sheet3		🗌 🗖 Seti	t as a global	symbol s	heet.		
Symbol	Data Type	Consec	Device A	ddress	No. of Dat		Comment
2,11001	3753	utive				.u.	commone
Temperature1		Data T					
<u>. R</u>		Data T Deselect 16Bit(Sit	ype	32Bit(	ianed)	Bit	
<u>. R</u>		Data T Deselect 16Bit(Sit	уре	32Bit(1	ianed)		Common
<u>. R</u>		Data T Deselect 16Bit(Sit	ype gned) psigned)	32Bit(1 22Bit(1 32Bit(1	Signed) Jnsigned)	Bit	

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	襆 Feature 渊 [	- Sa	ve 🔉 🏠 Tr	ansfer	Monitor Status
Node Name AGP	1	Device	Name PLC1		1000
Sheet Name Shee	13	🗌 🗖 Setit	as a global symbol :	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		(	Input Address	
	_			D	i0
				Back	Clr
				A B C	7 8 9
	-			DEF	4 5 6
[	-				1 2 3
					Ent
	_			F	

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.

**6** Repeat the above steps (Step 1 to 5) to register the symbol "Valve 1" in the same way.

g Help					_ 🗆 >
≽ Symbol ≫	≷ Feature ≫ [	📔 Sa	ave 渊 🆄 T	ransfer	Monito Statu
Node Name AGP1		Device	Name PLC1		
Sheet Name Shee	3	Set it as	a global symbol shee	et.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Temperature1	16Bit(Signed)		D0050	1	
Valve1	Bit		M0050	1	
				1	
				1	
				1	
				1	

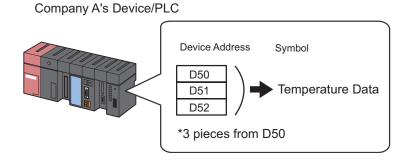
This is the end of the symbol registration to the symbol sheet.

 • You can edit the contents of the registered symbols. Click [Symbol], [Consecutive] or [Device Address] and edit the contents on the "Edit Symbol" screen.
 \* "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	Help Symbol ⋗ 🦂	Feature ⋗ [	- Sa	ave > 🔖 Ti	ransfer	Monitor Status
	Node Name AGP1 Sheet Name Sheet3			Name PLC1 a global symbol shee		
	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
	Temperature1	16Bit(Signed)		D0050	1	<u> </u>
L					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 >> 🦂	🍖 Feature ン 📑	Sa	ave 🔉 🔖 Ti	ransfer	Monitor Status
I	Node Name AGP1 Sheet Name Sheet3			Name PLC1 a global symbol shee	et.	
I	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
	Temperature1	16Bit(Signed)		D0050	1	
	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		Device	Name PLC1		
Sheet Name Sheet3		Set it as	a global symbol shee	et.	
		0			
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Symbol Temperature1	Data Type 16Bit(Signed)		Device Address	No. of Data 1	Comment
				No. of Data 1 1	Comment
Temperature1	16Bit(Signed)	utive	D0050	No. of Data 1 1 1	Comment
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
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.

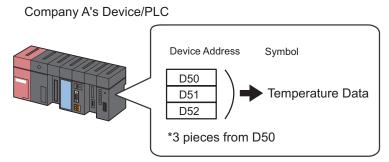
**5** Repeat Step 2 to 4 to set the next symbol.

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	Help					S
	≽ Symbol 🌺 🚄	🍷 Feature ン 📑	Sa Sa	ive 꽏 🆄 Ti	ransfer	Monitor Status
	Node Name AGP1		Device	Name PLC1		
I	Sheet Name Sheet3		Set it as a	a global symbol shee	et.	
I			Consec			
	Symbol	Data Type	utive	Device Address	No. of Data	Comment
	TemperatureData				1	<u> </u>
T					1	
н	l				1	
н					1	
н	ļļ				1	
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	19 <u>0</u> 0		2 <sup>1</sup> 2	-0.745
Sheet Name Sheet3		🗌 🗖 Setit	t as a global sj	ymbol si	heet.		
Symbol	Data Type	Consec utive	Device Add	lress	No. of Da	ita	Comment
TemperatureData		Data T	уре				
	l	Decelee	and the state			14	
		16Bit(Sig		32Bit(9	(igned)	Bit	
		16Bit(Ur	nsigned) <sup>VS</sup>	32Bit(L	Jnsigned)	Float	
		16Bit(HE		32Bit(H	IEX)	Double	9
		16Bit(BC	CD)	32Bit(E	BCD)	String	
	, [			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 🔊	📑 Sa	ve 🔉 🏠 Ti	ransfer		<b>a</b> y	Moni Stat	
Node Name AGP1		Device	Name PLC1		9 <del>0</del>			
Sheet Name Sheel	3	Setit	as a global symbol :	sheet.				
Symbol	Data Type	Consec utive	Device Address	No. of Da	ta	Com	nment	8
TemperatureData	16Bit(Signed)		( <sub>2</sub> 2)	Input Addr	ess		n	
		_		D	• 50	)		_
				Back			С	lr
				A B	С	7	8	્
		_		DE	F	4	5	6
	-			26		2	2	
						D	E	nt
				22		100		_

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

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

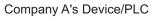
When you register the next symbol, the address following the last address input in Step 4 (in this case, "+D0053") is displayed on the continuous attribute panel that is displayed by clicking the [Consecutive] field.

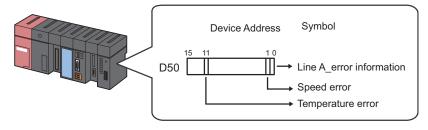
Help Symbol >>	Feature 🔉	. <mark></mark> Sa	ive 💙 🆄 Ti	ansfer	Monito Statu:
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet	3	🗌 🗖 Seti	t as a global symbol :	sheet.	
Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
TemperatureData	16Bit(Signed)		D0050	1	
			Consecutive Release + D0051 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".

g Help Symbol >>	Feature >	Sa	ive 🔉 🖄 Ti	ansfer	- 🗆 🗙 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>
				1	
				1	
				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	
SpeedError				1	
				1	
				1	
				1	
				1	
				1	
			1	11	

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

A panel to specify the continuous attribute appears.

Symbol >>  Node Name AGP1	Feature ➤		ave » 🆄 T Name PLC1	ransfer	Mon Sta
Sheet Name Sheet3	-	700 	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 2 D0050.02	

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

J Help       J Help       Symbol       Symbol						
Node Name AGP1		Device	Name PLC1			
Sheet Name Sheet3	Sheet Name Sheet3 Steet it as a global symbol sheet.					
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 ン 📑	Sa	ive 🔉 🖄 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	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.

## 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.

1 Help Symbol >> ≷ Feature >> 📄 Save >> 🆄 Transfer Monitor Status					
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3	Sheet Name Sheet3				
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 [Insert] button in [Symbol].

📚 Pro-Studio EX 🛛 te	st.npx				
<u>File Edit Tool F</u>	rogramming Assist	<u>S</u> etting <u>H</u> elp			
💋 Start 🔉	Node >	Symbol 2			
Symbol		Node Name			
Group	Ungroup	Sheet Name			
Insert	Insert Delete				
	at Paste	Symbol			
Symbol Sheet		LineAErrorInform			
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 ≫ Reature ≫ 📄 Save ≫ 🏠 Transfer Status					
Node Name AGP1		Device	Name PLC1		
Sheet Name Sheet3	N	Set it as	a global symbol shee	ıt.	
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.

Image: Peakure in the second secon					
Node Name A 21		Device	Name PLC1		
Sheet Name Sheet3	Sheet Name Sheet3				
Symbol		Consec			
Jymbor	Data Type	utive	Device Address	No. of Data	Comment
Jemperature1	Data Type 16Bit(Signed)		Device Address	No. of Data	Comment
-				No. of Data	
Jemperature1	16Bit(Signed)	utive	D.0050	No. of Data	
Temperature1	16Bit(Signed) 16Bit(Signed)	utive +	D0050 D0051	No. of Data 1 1 1 1 1	
Temperature1	16Bit(Signed) 16Bit(Signed)	utive +	D0050 D0051	No. of Data 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Temperature1	16Bit(Signed) 16Bit(Signed)	utive +	D0050 D0051	No. of Data	

2 Click [Delete] button in [Symbol].

🎨 Pro-Studio EX 👘	test.npx	
<u>File 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 Manlej
Сору		Symbol
Symbol Sheet		LineAErrorInfom
Add	Delete	SpeedError
Check Duplication	n/List Used Addresses	
Global Consta	nt Setting Screen	

**3** The "Delete Symbol" screen appears. Click [Yes] button.



The specified row is deleted.

Help       Symbol       Symbol         Feature         Save         Transfer         Monitor						
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	
Temperature1	16Bit(Signed)		D0050	1		
Temperature3	16Bit(Signed)	+	D0051	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 [Add] button in [Symbol Sheet].

黎 Pro-Studio E	X test.np>	<	
<u>F</u> ile <u>E</u> dit <u>T</u> o	ol <u>P</u> rogra	mming Assist	<u>S</u> etting <u>H</u> elp
💋 Start	<b>»</b>	Node 🔉	Symbol >
Symbol			Node Name
Group		Ungroup	Sheet Name
Insert		Delete	oncorright
Сору	Cut	Paste	Symbol
			LineAErrorInfom
Add	SpeedError		
Check Duplic			
Global Co	onstant Settin	ng Screen	

2 The "Add Symbol Sheet" screen appears. 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		•
Device Name PLC1		•
Sheet Name Sheet4		
	ОК	Cancel

## 4 Click [OK] button.

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						_ 🗆 🗙
File Edit Tool Programming Assist Settin	g Help					
Start >> 🔪 Node >>	≽ Symbol ≫ 🚄	≷ Feature ン 🛛	📑 Sa	ive ≫ 🆄 Ti	ransfer	Monitor Status
Symbol	Node Name AGP1		Device	Name PLC1		
Group Ungroup	Sheet Name Sheet4		Set it as	a global symbol shee	et.	
Insert Delete						
Copy Cut Paste	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
Symbol Sheet					1	<b></b>
Add Delete					1	
					1	
Check Duplication/List Used Addresses					1	
			<u> </u>		1	
Global Constant Setting Screen			<u> </u>		1	
FI▼ Pro-Server EX			<u> </u>		1	
🖻 🚚 PC1 (198.168.0.1)					1	II
INTERNAL:Sheet1					1	
					1	II
GP1 (192.168.0.100)					1	III
PLC1-Sheet3 A Series CPLU					1	III
PLC1:Sheet4 A Series CPU [	)				1	
- • WinuP					1	
LT3000     GP Series		·			1	
Global Symbol					1	
					1	· II
			- <u> </u>		1	·
			<u> </u>		1	· · · ·
	•					<u> </u>

## 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 P	rogramming As:	ist Setting	Help
Start 🔉		ode » 🗍	Symbol >
Symbol			Node Name AGF
Group	Ungrou	φ	Sheet Name She
Insert	Delet		onocritanoj
Сору	Cut P	aste	Symbol
Symbol Sheet -			
Add	Delet	•	L
Check Duplicatio	n/List Used Add	lresses	
Global Const	ant Setting Scre	en	
E - ▼ Pro-Server			
E- 📲 PC1 (19	8.168.0.1) TERNAL:Sheel		
GP3000 Se		' II	<u></u>
E ♥ GP3000 Selles E [] AGP1 (192.168.0.100)			
#INTERNAL:Sheet2			i
PLC1:Sheet3 & Series CPLU			
	PLC1:Sheet4 A Serie: CPU [		
→ WinGP	• WindP		
► LT3000			
GP Series			
👘 🕨 🖌 Global Symi	bol		

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

黎 Pro-Studio EX	test.np>	¢			
<u>File Edit T</u> ool <u>P</u> rogramming Assist <u>S</u> etting <u>H</u> elp					
💋 Start 🔉	>	Node ン	Symbol	2	
Symbol			Node Name	•[/	
Group		Ungroup	Sheet Name	R	
Insert	Insert Delete			1	
Сору	Cut	Paste	Symbo	ol	
Symbol Sheet -					
Add	- Free	Delete N	SpeedError	_	
		_			
Check Duplicatio	J	_			
Global Const	ant Settir	ig Screen			

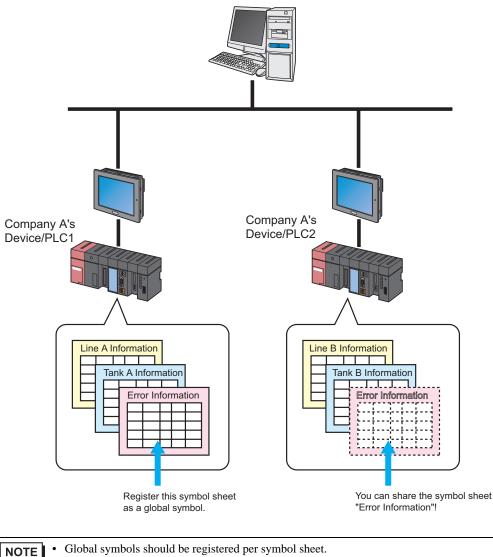
The selected symbol sheet is now deleted.

#### 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.



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.

## 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 🔉 🔖 Tr	ansfer	Monitor Status
Node Name AGP1 Sheet Name Sheet3			Name PLC1 a global symbol shee		
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.

物 Pro-Studio I	Х ?.пря			
File Edit Tool	Programmi	ng Assist	Setting	Help
💋 Start	<b>»</b>	Node	<b>&gt;&gt;</b>	≽ Symbol 🔉
Symbol				Node Name A(
Group	l	Jngroup		Sheet Name Si
Insert		Delete		oncorriginoj
Сору	Cut	Paste		Symbol
Symbol Sheet				Temperature1
Add	1	Delete		Temperature2
L				Temperature3
Check Duplic	Check Duplication/List Used Addresses			
Global Constant Setting Screen				

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					
┝ Symbol 🌺 🧹	≷ Feature ン [	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	
		<u> </u>		1	
				1	
		<u> </u>		1	
				1	
		<u> </u>		1	<u> </u>
		<u> </u>		1	
		<u> </u>		1	
				1	
				1	
				1	
				1	
				1	
•				11	

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

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

Group Ungroup Insert Delete Copy Cut Paste Symbol Sheet Add Delete	🎕 Pro-Studio EX	( ?.прх			
Symbol     Node Nam       Group     Ungroup       Insert     Delete       Copy     Cut       Symbol Sheet     Temperature       Add     Delete	File Edit Tool	Programming Assist	Setting	; Help	
Group     Ungroup       Insert     Delete       Copy     Cut       Paste     Symbol       Symbol     Sheet       Add     Delete	ጆ Start	>> 🔪 Node	<b>&gt;&gt;</b>	≽ Symbol	
Insert     Delete       Copy     Cut       Paste     Symbol Sheet       Add     Delete	Symbol			Node Name	
Copy         Cut         Paste         Symbol           Symbol Sheet         Temperature:         Temperature:         Temperature:           Add         Delete         Temperature:         Temperature:	Group			Sheet Name	
Symbol Sheet Add Delete Temperature Temperature	Insert	Delete			
Add Delete Temperature:		Cut Paste		Symbo	
Add Delete Temperature:	Sumbol Sheet Temperature1				
		Delete		Temperature2	
Check Duplication/List Used Addresses				Temperature3	
	Check Duplica	tion/List Used Address	es		
Global Constant Setting Screen					

NOTE

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

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

	🏷 Pro-Studio EX 🛛 ?.npx			
	File Edit Tool Programming A	ssist Settir	ng Help	
ſ	New Open	ode ン	🌔 Symbol ᆇ	è Fe
	Save Save As V Input History at Save Time	pup	Node Name AGP1	
	Print	te	Sheet Name Sheet3	
	Export Nodes and Symbols Import Nodes and Symbols	Paste	Symbol	
	2.npx	ite	Temperature1	16Bit(\$ 16Bit(\$

The "Open File" screen appears.

Save As				? ×
Save in:	🔁 NPXDataBas	e	•	← 🗈 📸 📰 -
	Name	Size	Туре	Modified
	💱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				
wy compater	•			<b></b>
My Network P	File name:	003.npx		▼ Save
Wy NetWOIK F	Save as type:	Network Project File (*.n	рх)	▼ Cancel

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

Save As				? ×
Save in:	NPXD ataB ase		•	🗢 🗈 📸 🎫
	Name	Size	Туре	Modified
	💱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
	💱i003.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
My Network P	Save as type: Net	work Project File (*.np	ж)	Cancel

The selected network project file opens.

5 Click [Symbol] on the status bar.

Service Studio EX 2.npx	
File Edit Tool Programming Assist	
Start >> 🟹 Node	Symbol N  Feature X
Add 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.

*	.прх	
File Edit Tool Pro	gramming Assist Settir	ng Help
💋 Start ン	Node ≫	🌔 Symbol ≫
Symbol	((	Node Name AG
Group	Ungroup	Sheet Name Sh
Insert	Delete	
Сору (	Cut Paste	Symbol
Symbol Sheet		
Add	Delete	
Check Duplication/	List Used Addresses	
Global Constar	t Setting Screen	
GP3000 Serie     GP3000 Serie     GP3000 Serie     GP3000 Serie     GP3000     GPSries     GP Series     Global Symbol	168.0.1) ERNAL:Sheet1 <sup>is</sup> 2168.0.100) <del>ERNAL:Sheet2</del> Sheet3 A Series CPU (	
•		•

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

Pro-Studio EX         004.npx           File         Edit         Tool         Programming Assist         Setting	Help					
Start >> Node >> /	> Symbol					
Symbol	Node Name					
Group Ungroup	Sheet Name					
Insert Delete	onoornam					
Copy Cut Paste	Symb					
Symbol Sheet						
Add Delete	<u> </u>					
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.

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

g	Help					_ 🗆 ×
P	> Symbol >> ≷	🕈 Feature ン 📑	Sav	re 🔉 🆄 Tra	insfer	Monitor Status
I	Node Name AGP1		Device	Name PLC1		
I	Sheet Name Sheet2		Setitasa	global symbol sheet		
I	Symbol	Data Type	Consec utive	Device Address	No. of Data	Comment
L	Temperature1	16Bit(Signed)		D0050	1	
L	Temperature2	16Bit(Signed)		D0051	1	
L	Temperature3	16Bit(Signed)		D0052	1	
L					1	
L					1	
L					1	
н					1	
L					1	
н	<u></u>				1	
L					1	
L					1	
L					1	
L					1	
L					1	
					1	
I					1	
	<u> </u>				1	
	<u> </u>				1	
	<u> </u>				1	
	4	I		I	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.

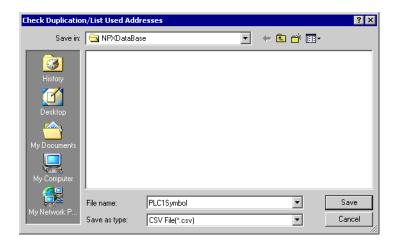
2 Click [Check Duplication/List Used Addresses] button.

Ŷ	Pro-Studio	EX O	04.np	×			
Fi	ile Edit Tool	Pro	gramm	ing Assist	Settin	ng Hel	Þ
	🗾 Start	<b>&gt;&gt;&gt;</b>		Node	<b>&gt;&gt;</b>	1	Symbol 4
Г	Symbol					N	ode Name
	Group		Ungroup		SI SI	neet Name	
	Insert	Delete			loochidhioj		
	Сору	0	Cut Paste				Symbol
	-Symbol Sheet					Ten	nperature1
	Add			Delete		Ten	nperature2
							nperature3
	Check Duplication/List Used Addresses						
	Global Constant Setting Screen						
-							

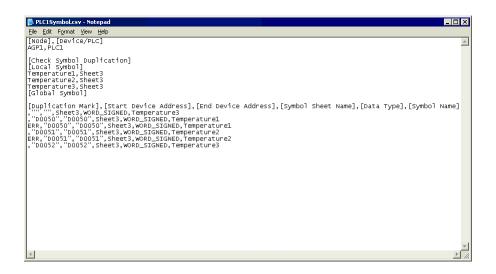
The "Check Duplication/List Used Addresses" screen appears.

Check Duplication	on/List Used Addr	esses			? ×
Save in:	🔁 NPXD ataBas	e	• +	- 🗈 💣 🎟-	
History					
Desktop					
My Documents					
My Computer					
My Network P	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 [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

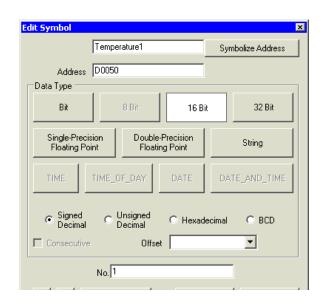
Edit Tool Prog	ramming Assist Sett	ing Help						
🔰 Start ン	Node >	<u> </u>	Symbol ⋗ 🍦	Feature 🔉 [	📑 Sa	ave 🔉 🆄 T	ransfer	Mor Sta
iymbol		Noc	le Name AGP1		Device	Name PLC1		
Group	Ungroup	She	et Name Sheet2		Setitas	a global symbol shee	*	
Insert	Delete	0.1.0	or reality		0011100			
Copy Cu	it Paste		Symbol	Data Type	Consec utive	Device Address	No. of Data	Commer
ymbol Sheet							1	
Add	Delete						1	
							1	
Check Duplication/L	ist Used Addresses						1	
							1	
Global Constant	Setting Screen						1	
- ▼ Pro-Server EX							1 	
🖻 🐺 PC1 (192.1	68.0.1)						1	
	RNAL:Sheet3							<u> </u>
<ul> <li>GP4000/LT40</li> </ul>					-		1	
▼ GP3000 Series ⊡⊡ AGP1 (192							1	
	RNAL:Sheet1						1	
	Sheet2 A Series CPU I						1	<u> </u>
→ WinGP				·	-		1	
► LT 3000 ► GP Series							1	
► Global Symbol							1	
0.000.000							1	
							1	
							1	<u> </u>

Sett	ting 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 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 "32.5 Checking Registered Symbols" for more details.
Global Consta	int 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_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.						
Consecutive	<ul> <li>You cannot register text string tags as a symbol.</li> <li>Displays a continuous attribute panel if symbols have been already set. Select 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         <ul> <li><u>Symbol Data Type Consec Device Address No. of Data Type Interpetature1 16Bit(Signed) 100050 1</u></li> <li>Temperature2 16Bit(Signed) + 100051 1</li> <li>Offset specification         </li> </ul> </li> <li>Offset specification         <ul> <li><u>Symbol Data Type Consec Device Address No. of Data 1</u></li> <li>Offset specification</li> </ul> </li> </ul>						

Setting item	Setting content
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 "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



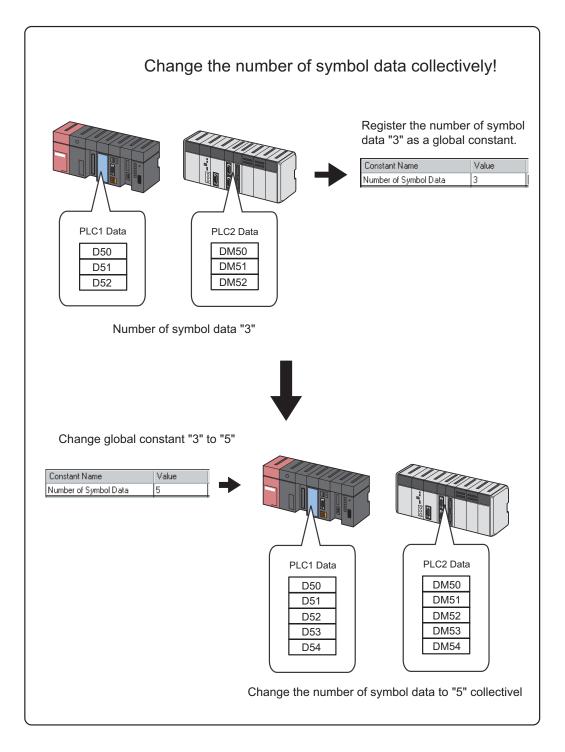
Setting item	Setting content		
Symbol Name	<ul> <li>Enter the symbol name you wish to register.</li> <li>NOTE</li> <li>Must be entered at maximum 32 Unicode characters.</li> <li>Cannot begin with a number.</li> </ul>		
Symbolize Address       Input a symbol name automatically from the device address 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.		

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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				×
Copy 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> </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.

# 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
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.