CoDeSys Automation Alliance CODESYS3_17 3/2025

CoDeSys V3 Ethernet Driver

1	System Configuration	3
2	External Device Selection	6
3	Communication Settings	8
4	Setup Items	20
5	Supported Devices	26
6	Device Code and Address Code	
7	Error Messages	

IMPORTANT	The below Displays are no longer sold nor maintained by Pro-face. To reduce unplanned downtime due to aged hardware and to maximize your cyber security
	environment we recommend replacing your devices with a new, successor model.
	For details, please visit our homepage for "Recommended Substitution".
	Discontinued from GP-Pro EX 5.00 onwards: GP3000 Series, LT3000 Series,
	ST3000 Series, GP-4100 Series (Monochrome model), PL Series, PS3000/4000
	Series, PE4000 Series.
•	For details on the Displays supported by the driver, please check the "Connectable
	Devices" on our website.

http://www.pro-face.com/trans/en/manual/1064.html

Introduction

This manual describes how to connect the Display and the External Device (target PLC).

In this manual, the connection procedure will be described in the sections identified below:



1 System Configuration

The system configuration for the Display connected to the CoDeSys Automation Alliance External Device is shown below.

Series	CPU	Link I/F	Communication Method	Setting Example
3S-Smart Software Solutions GmbH CODESYS Control Win V3	PC/AT	Ethernet Interface	Ethernet (TCP)	"Setting Example 1" (page 8)
Hitachi Industrial Equipment Systems Co., Ltd. EHV+	1006 1025 1051 1102	Ethernet Interface	Ethernet (TCP)	"Setting Example 1" (page 8)
Hitachi Industrial Equipment Systems Co., Ltd. HX	HX-CP1S08 HX-CP1H16 HX-CP1S08M HX-CP1H16M HXC-CP1H16	Ethernet Interface	Ethernet (TCP)	"Setting Example 2" (page 11)
Lenze Vertrieb GmbH Controller 3200C	3200C	Ethernet Interface	Ethernet (TCP)	"Setting Example 1" (page 8)
Schneider Electric SA	M241 M251	Ethernet Interface	Ethernet (TCP)	"Setting Example 3" (page 14)
Modicon	M262	Ethernet Interface	Ethernet (TCP)	"Setting Example 4" (page 17)

NOTE

• Please refer to the latest list of the External Device to be supported by this driver on the Proface's website.

http://www.pro-face.com/product/soft/gpproex/driver/driver.html

• This driver does not support GP3000 Series, LT3000 Series, GP-4100 Series (Monochrome Model), GP-4*01TM and GP-Rear Module.

Connection Configuration

• 1:1 Connection



• 1:n Connection

Maximum number of connections: 16



• 1:n Connection (Gateway connection)





• n:1 Connection

Maximum number of connections: n*



* The number of Displays you can connect depends on the External Device. Check the specifications of the External Device.

n:m Connection



* The number of Displays you can connect depends on the External Device. Check the specifications of the External Device.

2 External Device Selection

Select the External Device to be connected to the Display.

Welcome to GP-Pro EX	Device/PLC Number of Dev	ices/PLCs 1
		Device/PLC 1
	Manufacturer	CoDeSys Automation Alliance
	Series	CoDeSys V3 Ethernet
	Port	Ethernet (TCP)
		Refer to the manual of this Device/PLC
		Recent Device/PLC
	Use System	Area Device Information
	Back (E	Communication Settings New Logic New Screen Cancel

Setup Items	Setup Description	
Number of Devices/PLCs	 Use an integer from 1 to 2 to enter the number of Devices/PLCs to connect to the display. NOTE When you set up the CoDeSys Automation Alliance CoDeSys V3 Ethernet driver, the number of drivers that can connect simultaneously is as follows. Models that can connect up to 4 drivers: 2 (CoDeSys V3 Ethernet and one other driver) Models that can connect up to 2 drivers: 1 (CoDeSys V3 Ethernet only) 	
Manufacturer	Select the manufacturer of the External Device to be connected. Select "CoDeSys Automation Alliance".	
Series	Select a model (series) of the External Device to be connected and connection method. Select "CoDeSys V3 Ethernet". Check the External Device which can be connected in "CoDeSys V3 Ethernet" in system configuration. I System Configuration" (page 3)	
Port	Select the Display port to be connected to the External Device. Select [Ethernet (TCP)].	

Setup Items	Setup Description
Use System Area	 Check this option to synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the External Device's ladder program to switch the display or display the window on the Display. Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)" This feature can also be set in GP-Pro EX or in the Display's offline mode. Cf. GP-Pro EX Reference Manual "System Settings [Display Unit] - [System Area] Settings Guide" Cf. Maintenance/Troubleshooting Guide "Main Unit - System Area Settings"

3 Communication Settings

Examples of communication settings of the Display and the External Device, recommended by Pro-face, are shown.

3.1 Setting Example 1

Settings of GP-Pro EX

Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC1	
Summary	Change Device/PLC
Manufacturer CoDeSys Automation Alliance Series CoDeSys V3 Ethernet	Port Ethernet (TCP)
Text Data Mode 2 Change	
Communication Settings	
Port No. 1024 😴 🔽 Auto	
Timeout 10 😴 (sec)	
Retry 0	
Wait To Send 0 🧰 (ms) Default	
Device-Specific Settings	
Allowable Number <u>Add Device</u> of Devices/PLCs 16	
No. Device Name Settings	Add Indirect Device
1 PLC1 Internet Node Name (or) Address=NodeName,Use Tcp/Ip=OFI	F

Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the External Device and click [Settings] III . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

LC Settings	
Node Name (or) Address	NodeName
IP Address	0. 0. 0. 0
Port No.	11740
Use User Manageme	ent
User	
Password	۵
ateway Settings	ateway
	0 0 0 0
Port No.	1217
Tao Data	
ay Dala 7 Hee Tag Data	
	New Edit
Vord Order	
Double Word word order	High word first(H/L) $\qquad \sim$
Data Read Update Rate	
Fixed Update	Rate
Update Rate (ms)	100
nte:	

NOTE

- When using a gateway, select the [Connect via Gateway] check box and set the gateway's IP address and port number.
- While using a display unit other than IPC, PC/AT compatible machine, or SP5000 Series Open Box and the gateway restarts, communication may not be restored. If that happens, restart the display unit.
- Use the programming software for the External Device to check the gateway's node name, node address and IP address.
- Check with a network administrator about IP address. Do not set the duplicate IP address in the same network.
- Set up the External Device's IP address and Port Number in the [Individual Device Settings] dialog box.
- Set up the Display's IP address in offline mode.

Settings of External Device

Use the programming software for the External Device to define its communication settings. Please refer to the manual of the External Device for more details.

- 1 In the programming software, create a project.
- 2 Select [Device] from the [Devices] tree view.
- **3** Click [Scan network] and search for the External Device to use.

• When searching for External Devices, the External Device and host must exist on the same network. Please refer to the manual of the External Device for more details.

4 Select the added External Device, and confirm the [Node Name] or [Node Address].

• When using a gateway, check the gateway's IP address and port number.

3.2 Setting Example 2

Settings of GP-Pro EX

♦ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1	
Summary	Change Device/PLC
Manufacturer CoDeSys Automation Alliance Series CoDeSys V3 Ethemet	Port Ethemet (TCP)
Text Data Mode 2 Change	
Communication Settings	
Port No. 1024 🖃 M Auto	
Timeout 10 (sec)	
Retry 0	
Wait To Send 0 (ms) Default	
Device-Specific Settings	
Allowable Number <u>Add Device</u> of Devices/PLCs 16	Addle Frend
No. Device Name Settings	Device
1 PLC1 International Node Name (or) Address= ,Use Tcp/lp=ON,Node IP A	F

Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the External Device and click [Settings] III . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

LC Settings			
Node Name (or) Address			
IP Address	192, 168,	0. 1	
Port No.	11740	÷	
Use User Managemer	nt		
lleer			
Password			ത
Sateway Settings			
Connect via Gat	eway	0 0	
IP Address	U. U.	0. 0	
Port No.	1217	* *	
ag Data			
🛛 Use Tag Data			
TagData01			~
	Nev	N	Edit
Vord Order			
Double Word word order	High word first(H/	L)	\sim
Data Read Update Rate			
Fixed Update R	ate		
	100	*	
Update Rate (ms)			
Update Rate (ms) ote: ne total number of variables ar	nd array elements	allowed to be a	ccessed in

NOTE

- When using a gateway, select the [Connect via Gateway] check box and set the gateway's IP address and port number.
- While using a display unit other than IPC, PC/AT compatible machine, or SP5000 Series Open Box and the gateway restarts, communication may not be restored. If that happens, restart the display unit.
- Use the programming software for the External Device to check the gateway's node name, node address and IP address.
- Check with a network administrator about IP address. Do not set the duplicate IP address in the same network.
- Set up the External Device's IP address and Port Number in the [Individual Device Settings] dialog box.
- Set up the Display's IP address in offline mode.

Settings of External Device

Use the programming software for the External Device to define its communication settings. Please refer to the manual of the External Device for more details.

- 1 Create a project in the programming software.
- 2 From the [Devices] tree view double-click [Device].
- **3** Click [Scan network] to find the External Device.

```
NOTE
```

• To search for External Devices, the External Device must be on the same network as the host. For information, refer to the manual of the External Device.

- 4 Select the External Device, and click [OK].
- 5 Click [PLC Parameters] and set up the communication port as follows.

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0
Change IP information	Yes

NOTE

• ETH1, ETH2, and ETH3 cannot be set to the same network.

• When changing the IP address, set [Change IP information] to [Yes].

6 From the [Online] menu select [Login], and log in to the External Device.

7 Download the project and restart the External Device.

3.3 Setting Example 3

Settings of GP-Pro EX

♦ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC1	
Summary	Change Device/PLC
Manufacturer CoDeSys Automation Alliance Series CoDeSys V3 Ethernet	Port Ethernet (TCP)
Text Data Mode 2 Change	
Communication Settings	
Port No. 1024 🖃 🗹 Auto	
Timeout 10 🗮 (sec)	
Retry 0	
Wait To Send 🛛 📑 (ms) 🖉 Default	
Device-Specific Settings	
Allowable Number <u>Add Device</u> of Devices/PLCs 16	Add to Freed
No. Device Name Settings	Device
1 PLC1 IN Node Name (or) Address=NodeName,Use Tcp/Ip=OFI	.

Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the External Device and click [Settings] III . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

LC Settings	
Node Name (or) Address	NodeName
IP Address	0. 0. 0. 0
Port No.	11740
Use User Manageme	ent
User	
Password	۵
ateway Settings	ateway
	0 0 0 0
Port No.	1217
Tao Data	
ay Dala 7 Hee Tag Data	
	New Edit
Vord Order	
Double Word word order	High word first(H/L) $\qquad \sim$
Data Read Update Rate	
Fixed Update	Rate
Update Rate (ms)	100
nte:	

NOTE

- When using a gateway, select the [Connect via Gateway] check box and set the gateway's IP address and port number.
- While using a display unit other than IPC, PC/AT compatible machine, or SP5000 Series Open Box and the gateway restarts, communication may not be restored. If that happens, restart the display unit.
- Use the programming software for the External Device to check the gateway's node name, node address and IP address.
- Check with a network administrator about IP address. Do not set the duplicate IP address in the same network.
- In the [Node Name (or) Address] field, set the device name of the External Device. You cannot use the IP address for communication.
- Set up the Display's IP address in offline mode.

Settings of External Device

Use the programming software for the External Device to define its communication settings. Please refer to the manual of the External Device for more details.

- 1 In the programming software, create a project.
- 2 From the [View] menu, select [Navigators]-[Devices tree].
- **3** From the [Devices tree], double-click the [MyController].
- 4 Click [Controller selection].
- 5 Right-click the External Device, and select [Change device name].
- 6 Input the [Device name].

NOTE	• The setting of Device name have to be identical to that of GP-Pro EX.

7 Click [OK].



• When communicating with GP-Pro EX, set the Device name for the External Device. IP addresses cannot be used for communication.

3.4 Setting Example 4

Settings of GP-Pro EX

♦ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC1	
Summary	Change Device/PLC
Manufacturer CoDeSys Automation Alliance Series CoDeSys V3 Ethernet	Port Ethernet (TCP)
Text Data Mode 2 Change	
Communication Settings	
Port No. 1024 🗾 🗹 Auto	
Timeout 10	
Retry 0	
Wait To Send 0 👘 (ms) Default	
Device-Specific Settings	
Allowable Number <u>Add Device</u> of Devices/PLCs 16	Add to Prove
No. Device Name Settings	Device
1 PLC1 IN Node Name (or) Address=NodeName,Use Tcp/Ip=0FI	F

Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the External Device and click [Settings] III . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

LC Settings	
Node Name (or) Address	NodeName
Use I cp/ip	0 0 0 0
Dest No.	11740
POR NO.	11/40 ¥
Use User Manageme	ent
User	
Password	Ô
ateway Settings	
Connect via Ga	ateway
IP Address	0. 0. 0. 0
Port No.	1217
ag Data _	
Use Tag Data	
	New Edit
Next Order	
Vord Urder Double Word word order	Hich word first/H/L)
	righ word list(in E)
ata Read Update Rate	
Fixed Update	Rate
Update Rate (ms)	100 🜩
ote:	
والمحاجز و	and array elements allowed to be accessed in

NOTE

- When using a gateway, select the [Connect via Gateway] check box and set the gateway's IP address and port number.
- While using a display unit other than IPC, PC/AT compatible machine, or SP5000 Series Open Box and the gateway restarts, communication may not be restored. If that happens, restart the display unit.
- Use the programming software for the External Device to check the gateway's node name, node address and IP address.
- Check with a network administrator about IP address. Do not set the duplicate IP address in the same network.
- Set up the External Device's IP address and Port Number in the [Individual Device Settings] dialog box.
- Set up the Display's IP address in offline mode.

Settings of External Device

Use the programming software for the External Device to define its communication settings. Please refer to the manual of the External Device for more details.

- 1 In the programming software, create a project.
- 2 From the [View] menu, select [Navigators]-[Devices tree].
- **3** From the [Devices tree], double-click the [MyController].
- 4 Click [Controller selection].
- 5 Right-click the External Device, and select [Change device name].
- 6 Input the [Device name].

• The setting of Device name have to be identical to that of GP-Pro EX.

7 Click [OK].

4 Setup Items

Set communication settings of the Display with GP-Pro EX or in offline mode of the Display.

The setting of each parameter must be identical to that of External Device.

```
<sup>(C)</sup> "3 Communication Settings" (page 8)
```

• Set the Display's IP address in off-line mode. Cf. Maintenance/Troubleshooting Guide "Ethernet Settings"

4.1 Setup Items in GP-Pro EX

Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1		
Summary		Change Device/PLC
Manufacturer CoDeS	ys Automation Alliance Series CoDeSys	/3 Ethernet (TCP)
Text Data Mode	2 Change	
Communication Settings		
Port No.	1024 📑 🗹 Auto	
Timeout	10 😤 (sec)	
Retry	0	
Wait To Send	0 📑 (ms) Default	
Device-Specific Settings		
Allowable Number of Devices/PLCs	Add Device 16	
No. Device Name	Settings	Add Indirect Device
👗 1 PLC1	Node Name (or) Address=NodeName,L	Jse Tcp/lp=OFI

Setup Items	Setup Description		
Port No.	Displays the port number of the Display, from 1024 to 65535. The port number is set automatically.		
TimeoutTime (in seconds) that the Display waits for a response from the External Device, find 127.			
RetryNumber of times, from 0 to 255, the Display will re-transmit a command who receive a response from the External Device.			
Wait To Send	Amount of time, from 0 to 255 milliseconds, the Display waits after receiving a communication packet before transmitting the next command.		
NOTE • R	tefer to the GP-Pro EX Reference Manual for information on Indirect Devices.		
Cf.	GP-Pro EX Reference Manual "Changing the Device/PLC at Runtime (Indirect		

Device)"

Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings]

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

1	
PLC Settings	
Node Name (or) Address	NodeName
(
Use Tcp/lp	0 0 0 0
Il Address	11740
POR NO.	11/40 ¥
Use User Managemer	nt
User	
Password	0
Gateway Settings	
Connect via Gate	eway
IP Address	0. 0. 0. 0
Port No.	1217
Tag Data	
🗸 Use Tag Data	
	New Edit
	inon Epit
Nord Order	
Deuble Mendoused and a	High word first(H/L)
Double Word word order	
Double Word word order Data Read Update Rate	
Double Word word order Data Read Update Rate	ate
Double Word word order Data Read Update Rate Fixed Update Rate Update Rate (ms)	ate 100
Double Word word order Data Read Update Rate Fixed Update Rate Update Rate (ms) ote: he total number of variables ar toese Rights" action of the cost	ate 100 d array elements allowed to be accessed in meneted device should be 6000 - test
Double Word word order Data Read Update Rate Fixed Update Rate Update Rate (ms) ote: he total number of variables ar Access Rights" setting of the co	ate 100 \$ id array elements allowed to be accessed in nnected device should be 60,000 or less. Default

	Setup Items	Setup Description		
Node Name (or)Enter the node name or node address of the connected External Device. When yeAddressnode name or node number, settings such as the IP address become unnecessary		Enter the node name or node address of the connected External Device. When you enter the node name or node number, settings such as the IP address become unnecessary.		
Use Tcp/Ip		Select this check box to specify the External Device's IP address and port number.		
	IP Address	Set the External Device's IP address. NOTE • Check with a network administrator about IP address. Do not set the duplicate IP address.		
	Port No.	Enter the External Device's port number.		
Use User Management		Select this check box when the connected External Device performs user management.		
	User	Enter the user name.		
	Password	Enter the password.		

Setup Items		Setup Description	
Connect via Gateway		When using a gateway, select this check box.	
IP Address Set the gatew • Check wit		Set the gateway's IP address. NOTE • Check with a network administrator about IP address. Do not set the duplicate IP address.	
	Port No.	Enter the gateway's port number.	
Use Tag Data		Select this check box. Click [New], and import the tag data to use. ☞ " ■ Importing Tag File" (page 29)	
Double Word word order		Select the data storage order of word units for 32-bit data. When most significant word is first: High word first (H/L) When least significant word is first: Low word first (L/H)	
Variable list registra- tion optimization		 When saving a variable list for the purpose of communication optimization, select this check box. NOTE As there is a limit to the number of variable lists that can be saved, enable only for External Devices that require communication optimization. 	

4.2 Setup Items in Offline Mode

NOTE

Please refer to Maintenance/Troubleshooting Guide for more information on how to enter offline mode or about operation.

Cf. Maintenance/Troubleshooting Guide "Offline Mode"

• The number of the setup items to be displayed for 1 page in the offline mode depends on the Display in use. Please refer to the Reference manual for details.

Communication Settings

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings] in offline mode. Touch the External Device you want to set from the displayed list.

Comm.	Device	1		-	
CoDeSys V3 Ethe	rnet			[TCP]	Page 1/1
	Port No.		Auto 1024		
	Timeout(s) Retry Wait To Send(ms)		10 0 0		
	Exit			Back	2013/04/03 16:57:22

Setup Items	Setup Description
Port No.Displays the port number of the Display, from 1024 to 65535. The port number is set automatically.	
TimeoutTime (in seconds) that the Display waits for a response from the External Device, 127.	
Retry	Number of times, from 0 to 255, the Display will re-transmit a command when it does not receive a response from the External Device.
Wait To Send	Amount of time, from 0 to 255 milliseconds, the Display waits after receiving a communication packet before transmitting the next command.

Device Setting

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings]. Touch the External Device you want to set from the displayed list, and touch [Device].

Comm.	Device			
CoDeSus V3 Ethe	rnet		[TCP]	Page 1/1
Devic	e/PLC Name PL	01	[101]	- dge 1/1
	Node Address TCP Connection IP Address(Tcp) Tcp Port UserManagement Gateway Gateway IP Gateway Port Double Word word Update Rate(ms)	Disab D	ole Enable 0 0 11740 V ole Enable 0 0 1217 V of first(H/L) 0 V 0 V	▲] ▲]
	Exit		Back	2023/07/05 13:11:47

Setup Items	Setup Description
Device/PLC Name	Select the External Device to set up. The device name is the name of the External Device defined in GP-Pro EX. The initial value is [PLC1].
Node Address	Displays the node name or node address of the connected External Device.
TCP Connection	Select [Enable] to specify the External Device's IP address and port number. When you select [Disable], the [IP Address (Tcp)] and [Tcp Port] properties are disabled.
	Set the External Device's IP Address.
IP Address(Tcp)	NOTE
	• Check with a network administrator about IP address. Do not set the duplicate IP address.
Tcp Port	Enter the External Device's port number.
UserManagement	Select [Enable] when the connected External Device performs user management. Use the user name and password set in GP-Pro EX.
	☞ " ◆ Device Setting" (page 21)
Gateway	When using a gateway, select [Enable]. When you select [Disable], the [Gateway IP] and [Gateway Port] properties are disabled.
	Set the gateway's IP address.
Gateway IP	NOTE
	Check with a network administrator about IP address. Do not set the duplicate IP address.
Gateway Port	Enter the gateway's port number.

Setup Items	Setup Description
Double Word word order	Display the data storage order of word units for 32-bit data. When most significant word is first: High word first (H/L) When least significant word is first: Low word first (L/H)
Var. list optimization	 When saving a variable list for the purpose of communication optimization, select [Enable]. NOTE As there is a limit to the number of variable lists that can be saved, enable only for External Devices that require communication optimization.

5 Supported Devices

Range of supported device addresses is shown in the table below. Please note that the actual supported range of devices varies on the External Device in use. Please check the actual range in the manual for your connected equipment.

You can import tag data from the project created by your programming software.

This address can be specified as system data area.

Device		Bit Address	Word Address	32 bit	Notes
	Single	<tagname></tagname>	-		
	1D Array	<tagname>[xl] - <tagname>[xh]</tagname></tagname>			
BOOL	2D Array	<tagmname>[xl,yl] - <tagname>[xh,yh]</tagname></tagmname>		-	*1
	3D Array	<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>			
	Single	<tagname>.00 - <tagname>.07</tagname></tagname>	<tagname></tagname>		
BYTE	1D Array	<tagname>[xl].00 - <tagname>[xh].07</tagname></tagname>	<tagname>[xl] - <tagname>[xh]</tagname></tagname>		*1*2
USINT	2D Array	<tagname>[xl,yl].00 - <tagname>[xh,yh].07</tagname></tagname>	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>		
	3D Array	<tagname>[xl,yl,zl].00 - <tagname>[xh,yh,zh].07</tagname></tagname>	<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		
	Single	<tagname>.00 - <tagname>.15</tagname></tagname>	<tagname></tagname>		
	1D Array	<tagname>[xl].00 - <tagname>[xh].15</tagname></tagname>	<tagname>[xl] - <tagname>[xh]</tagname></tagname>	[H/L]	*1*2*3
WORD	2D Array	<tagname>[xl,yl].00 - <tagname>[xh,yh].15</tagname></tagname>	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>	[L/H]	
	3D Array	<tagname>[xl,yl,zl].00 - <tagname>[xh,yh,zh].15</tagname></tagname>	<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		
	Single	<tagname>.00 - <tagname>.31</tagname></tagname>	<tagname></tagname>		
	1D Array	<tagname>[xl].00 - <tagname>[xh].31</tagname></tagname>	<tagname>[xl] - <tagname>[xh]</tagname></tagname>		*1*2
DWORD	2D Array	<tagname>[xl,yl].00 - <tagname>[xh,yh].31</tagname></tagname>	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>		
	3D Array	<tagname>[xl,yl,zl].00 - <tagname>[xh,yh,zh].31</tagname></tagname>	<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		

Device		Bit Address	Word Address	32 bit	Notes
	Single		<tagname></tagname>		
REAL TIME TOD	1D Array		<tagname>[xl] - <tagname>[xh]</tagname></tagname>	[H/L]	
	2D Array	-	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>	[L / H]	*1*2
DAY	3D Array		<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		
	Single		<tagname></tagname>		
DATE_AND	1D Array		<tagname>[xl] - <tagname>[xh]</tagname></tagname>		
_TIME DT	2D Array	-	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>	-	*1*4
	3D Array		<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		
	Single		<tagname></tagname>		
	1D Array		<tagname>[xl] - <tagname>[xh]</tagname></tagname>		
STRING	2D Array	-	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>	-	*1
	3D Array		<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		
	Single	<tagname>.00 - <tagname>.63</tagname></tagname>	<tagname></tagname>		
	1D Array	<tagname>[xl].00 - <tagname>[xh].63</tagname></tagname>	<tagname>[xl] - <tagname>[xh]</tagname></tagname>		*5
ULINT	2D Array	<tagname>[xl,yl].00 - <tagname>[xh,yh].63</tagname></tagname>	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>		
	3D Array	<tagname>[xl,yl,zl].00 - <tagname>[xh,yh,zh].63</tagname></tagname>	<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		
	Single		<tagname></tagname>		
	1D Array		<tagname>[xl] - <tagname>[xh]</tagname></tagname>		
LREAL	2D Array	-	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>	-	*5
	3D Array		<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		
	Single		<tagname></tagname>		
	1D Array		<tagname>[xl] - <tagname>[xh]</tagname></tagname>		
LTIME	2D Array	-	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>	-	*5
	3D Array		<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		

Devi	ice	Bit Address	Word Address	32 bit	Notes
	Single		<tagname></tagname>		
	1D Array		<tagname>[xl] - <tagname>[xh]</tagname></tagname>		<i>w.c.</i>
WSTRING	2D Array	-	<tagname>[xl,yl] - <tagname>[xh,yh]</tagname></tagname>	-	*6
	3D Array		<tagname>[xl,yl,zl] - <tagname>[xh,yh,zh]</tagname></tagname>		

*1 <TAGNAME>: When referring to structures, the TagName includes the structure name. The maximum number of characters for the Tag Name is 255, which includes delimiters and elements. Example)

BOOL type single symbol	"BOOLSYMBOL"
BOOL type 1D Array	"BOOL1D[10]
WORD type 2D Array	"WORD2D[10,10]
UDINT type 3D Array	"UDINT3D[0,1,2]
STRING in User Defined Structure [STRUCT001]	"STRUCT001.STRINGSYM"

- *2 Set the data storage order of word units for 32-bit data in the Device Setting dialog box.
- *3 Initially, 16 words of items are selected for the system data area. When selecting less than 16 words, set up a tag array with more than 16 words, allocate it to the system data area, and select the items.
- *4 64-bit data type on the Display, 32-bit data type on the External Device.
- *5 64-bit data type on the External Device, 32-bit data type on the Display. (The Display uses just the bottom 4 bytes and the top 4 bytes are ignored.)
 When a bit is specified, normal writing cannot be performed for 31-bit to 63-bit.

When a bit is specified, normal writing cannot be performed for 31-bit to 63-bit.

*6 Tag data can be imported. Do not use it, however, since it is the data type which is not supported by the Display.

IMPORTANT	When connecting with EHV+ Series, arrays cannot be used for the Display.
NOTE	• Sub-Scope is shown on the Display as 'Scope'\$'Sub-Scope'. ('\$' is delimiter)
	• When importing ENUM data types, the member name is converted to ENUM0. The value "0"
	is assigned to ENUM0.
	• Naming rules for the Tag Name, Data type name and Scope name are as follows:
	Special characters are not allowed.
	Consecutive underscore '_' are not allowed.
	• You cannot start names with any of the following text:
	LS, USR, SCR, PRT
	Maximum 255 characters.
	• Imported BIT type variables are converted to BOOL devices. To import BIT type variables,
	you need to output a symbol file from the configuration software for CoDeSys Runtime
	version 3.5 SP6 or later.
	Please refer to the GP-Pro EX Reference Manual on the system data area.
	Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
	• Please refer to the precautions on manual notation for icons in the table.
	"Manual Symbols and Terminology"

Importing Tag File

- ♦ 3S-Smart Software Solutions, Lenze Vertrieb, Hitachi Industrial Equipment Systems EHV+ Series
- **1** Use the programming software to create symbols.
- 2 In the [Devices] tree view, right-click [Application].
- **3** From the menu select [Add Object]-[Symbol configuration].
- 4 Move symbols you want to use on the Display to the [Selected variables] area.
- 5 Build the project and download to the External Device. Symbol data (xml file) is created when downloading.
- 6 In GP-Pro EX, display the [Individual Device Settings] dialog box and select the [Use Tag Data] check box.

🞒 Individual Device Settings	×
PLC1	
PLC Settings	
Node Name (or) Address	1
Use Tcp/Ip IP Address 0. 0. 0. 0 Port No. 11740	
Use User Management	
User Password	
Gateway Settings	
Connect via Gateway	
IP Address 0. 0. 0. 0	
Port No. 1217	
Tag Data ☑ Use Tag Data	
New Edit	
Word Order	
Double Word word order High word first(H/L) ~	
Data Read Update Rate	
Fixed Update Rate	
Update Rate (ms)	
Note: The total number of variables and array elements allowed to be accessed in th "Access Rights" setting of the connected device should be 60,000 or less. Default	ne
OK (O) Cancel	

7 Click [New] to display the [Tag List] window.

g List ; Data Name Tag	Data01			
ata type All>	Second		Usage (All>	Update
Name	Data type			
Import	Export Expand All	Collapse All	Add	Edit Delete
			L	OK Cancel

8 Click [Import].

Tag Import Select File				Browse
Tag Data ty Name	pe Scope Data type			
				_
🔽 Log File 🛛	C:¥Documents and Settings¥Apex¥My Documents¥2(0130416-164156.html	Browse Filter	Unselect All Clear Filter
			ОК	Cancel

9 From [Select File] click [Browse..], and select the symbol data (xml file).

g Da	ata type Scope			
Name		Data type		▲
A	.pp\$GLOBALVAR			
\checkmark	G_BOOL	BOOL		
\checkmark	G_BYTE	BYTE		
\checkmark	G_DATE	DATE		
\checkmark	G_DATEANDTI	DATE_AND_TIME		
\checkmark	G_DINT	DINT		
\checkmark	G_DT	DATE_AND_TIME		
\checkmark	G_DWORD	DWORD		
\checkmark	G_INT	INT		
\checkmark	G_LINT	LINT		
\checkmark	G_LREAL	LREAL		
\checkmark	G_LTIME	LTIME		
\checkmark	G_LWORD	LWORD		
\checkmark	G_REAL	REAL		
	G SINT	SINT		•
.og File	C:¥Documents a	and Settings¥Apex¥My Docume	nts¥20130416-164156.html	Select Unselect Select All Unselect. Browse Filter Clear Filter

10 Select the symbols you want to import, and click [OK].

g List g Data Name TagData01					
)ata type <		•	Usage <all></all>	•	Update
Tag Data type Scope					1
Name	Data type				
App\$GLOBALVAR					
H App\$HMISYS HocoNEIC, CLOD					
App\$IUCUNFIG_GLUB App\$IUCUNFIG_GLUB App\$IUCUNFIG_GLUB					
E App\$FLC_FNG					
	1				
Import Export	Expand All Colla	pse All	Add	Edit	Delete
				ОК	Cancel

- Please refer to "Using Device/PLC Tags" of the GP-Pro EX Reference Manual for the importing tag.
 - If the tag data has been changed using the tool of the External Device, please import the xml file again.

- ♦ Hitachi Industrial Equipment Systems HX Series
- 1 In the programming software, create symbols in PLC_PRG.
- 2 From the [Devices] tree view, right-click [Application].
- **3** From the menu select [Add Object]-[Symbol configuration].
- 4 Select the check box of symbols that will be used on the display unit.
- 5 Build the project and download to the External Device. A symbol data file (xml file) is created at download.
- 6 In GP-Pro EX, from the [Individual Device Settings] dialog box, select the [Use tag data] check box.

Individual Device Settings	
21	
PLC Settings	
Node Name (or) Address	
Use Tcp/lp	
IP Address	0. 0. 0. 0
Port No.	11740
Use User Manageme	nt
User	
Password	۵
Catoway Sottings	
Connect via Ga	teway
IP Address	0. 0. 0. 0
Port No.	1217
Tag Data	
🗸 Use Tag Data	
	New Edit
Word Order	
Double Word word order	High word first(H/L) $\qquad \lor$
Data Read Update Rate	
Fixed Update F	late
Update Rate (ms)	100
lote: he total number of variables a Access Rights" setting of the c	nd array elements allowed to be accessed in onnected device should be 60,000 or less.
	Default

7 Click [New] to display the [Tag List] window.

ata01			
		Usage <all></all>	Update
Data type			
Export Expand All	Collapse All	Add	Edit Delete
erry-seried call			OK Cancel
	eta01 Scope Data type Data type Export Export Expand All	eta01 Scope Data type Data type Data type	eta01 Collapse All Add

8 Click [Import].

Tag Import Select File				Browse
lag Data	ype Scope			1
Name	Data type			
	· · · · · · · · · · · · · · · · · · ·			
			Select Unselect Select All	Unselect All
🔽 Log File	C#Documents and Settings#Apex#My Documents#20	130416-164156.html	Browse Filter	Clear Filter
			ОК	Cancel

9 From [Select File] click [Browse..], and select the symbol data (xml file).

g Da	ata type Scope			
Name		Data type		▲
A	.pp\$GLOBALVAR			
\checkmark	G_BOOL	BOOL		
\checkmark	G_BYTE	BYTE		
\checkmark	G_DATE	DATE		
\checkmark	G_DATEANDTI	DATE_AND_TIME		
\checkmark	G_DINT	DINT		
\checkmark	G_DT	DATE_AND_TIME		
\checkmark	G_DWORD	DWORD		
\checkmark	G_INT	INT		
\checkmark	G_LINT	LINT		
\checkmark	G_LREAL	LREAL		
\checkmark	G_LTIME	LTIME		
\checkmark	G_LWORD	LWORD		
\checkmark	G_REAL	REAL		
	G SINT	SINT		•
.og File	C:¥Documents a	and Settings¥Apex¥My Docume	nts¥20130416-164156.html	Select Unselect Select All Unselect. Browse Filter Clear Filter

10 Select the symbols you want to import, and click [OK].

g List g Data Name TagData01					
)ata type <		•	Usage <all></all>	•	Update
Tag Data type Scope					1
Name	Data type				
App\$GLOBALVAR					
H App\$HMISYS HocoNEIC, CLOD					
App\$IUCUNFIG_GLUB App\$IUCUNFIG_GLUB App\$IUCUNFIG_GLUB					
E App\$FLC_FNG					
	1				
Import Export	Expand All Colla	pse All	Add	Edit	Delete
				ОК	Cancel

- Please refer to "Using Device/PLC Tags" of the GP-Pro EX Reference Manual for the importing tag.
 - If the tag data has been changed using the tool of the External Device, please import the xml file again.

♦ Schneider Electric SA

- 1 In the configuration tool, create a symbol.
- **2** Build the project. On build, symbol data (xml file) is generated.
- **3** In GP-Pro EX, display the [Individual Device Settings] dialog box and select the [Use Tag Data] check box.

1	
LC Settings	
Node Name (or) Address	
	-
IP Address	0. 0. 0. 0
Port No.	11740
Use User Manageme	nt
User	
Password	۵
ateway Settings	
Connect via Gat	eway
IP Address	0. 0. 0. 0
Port No.	1217
ag Data	
🛛 Use Tag Data	
	New Edit
Vord Order	
Double Word word order	High word first(H/L) $\qquad \qquad \lor$
Data Read Update Rate	
Fixed Update R	ate
Update Rate (ms)	100 🔹
ote:	nd array elemente alleved to be account in
ccess Rights" setting of the co	onnected device should be 60,000 or less.

4 Click [New] to display the [Tag List] window.

Tag List				
Tag Data Name TagData01				
Data type <all></all>		•	Usage <all></all>	▼ Update
		_		
Tag Data type Scope				
Name	Data type			
Import Expo	rt Excand All Colla	ose All	Add	Edit Delete
				OK Cancel
				///

5 Click [Import].

Tag Import Select File Tag Data luca			Erowse	1 ×
Name	Data type			1
			Select Unselect Select All Unselect A	dl
✓ Log File C¥Dog	uments and Settings¥Apex¥Mv Documents	¥20130416-164156 html	Browse Filter Clear Filter	1
10,4000	and to any counger operany becamenta	20100110101100.1011		
			OK Cancel	

6 From [Select File] click [Browse..], and select the symbol data (xml file).

g Da	ata type Scope			
Name		Data type		▲
A	.pp\$GLOBALVAR			
\checkmark	G_BOOL	BOOL		
\checkmark	G_BYTE	BYTE		
\checkmark	G_DATE	DATE		
\checkmark	G_DATEANDTI	DATE_AND_TIME		
\checkmark	G_DINT	DINT		
\checkmark	G_DT	DATE_AND_TIME		
\checkmark	G_DWORD	DWORD		
\checkmark	G_INT	INT		
\checkmark	G_LINT	LINT		
\checkmark	G_LREAL	LREAL		
\checkmark	G_LTIME	LTIME		
\checkmark	G_LWORD	LWORD		
\checkmark	G_REAL	REAL		
	G SINT	SINT		•
.og File	C:¥Documents a	and Settings¥Apex¥My Docume	nts¥20130416-164156.html	Select Unselect Select All Unselect. Browse Filter Clear Filter

7 Select the symbols you want to import, and click [OK].

Pata Name TagData01					
a type <all></all>			▼ Usage <all></all>	<u> </u>	Update
ag Data type Scope					
Name	Data type				
App\$IOCONFIG_GLOB					
App\$PLC_PRG A					
⊞ App\$PUU					
Import Export	Expand All C	ollapse All	Add	Edit	Delete
			_		

- Please refer to "Using Device/PLC Tags" of the GP-Pro EX Reference Manual for the importing tag.
 - If the tag data has been changed using the tool of the External Device, please import the xml file again.

6 Device Code and Address Code

Device code and address code cannot be used.

7 Error Messages

Error messages are displayed on the screen of Display as follows: "No. : Device Name: Error Message (Error Occurrence Area)". Each description is shown below.

Item	Description
No.	Error No.
Device Name	Name of External Device where error occurs. Device name is a title of External Device set with GP-Pro EX. (Initial value [PLC1])
Error Message	Displays messages related to the error which occurs.
	Displays IP address or device address of External Device where error occurs, or error codes received from External Device.
Error Occurrence Area	 NOTE IP address is displayed such as "IP address (Decimal): MAC address (Hex)". Device address is displayed such as "Address: Device address". Received error codes are displayed such as "Decimal [Hex]".

Display Examples of Error Messages

"RHAA035: PLC1: Error has been responded for device write command (Error Code: 2 [02H])"

NOTE
Refer to your External Device manual for details on received error codes.
Refer to "Display-related errors" in "Maintenance/Troubleshooting Guide" for details on the error messages common to the driver.

Error Messages Unique to External Device

Message ID	Error Message	Description
RHxx128	(Node Name): Connection open error (Node: %s)	This message appears when the Display cannot communicate with the External Device, or when communication is interrupted. Check the External Device settings. (This message appears when using the node address or the node name for communication with the External Device.)
RHxx129	(Node Name): %s:Symbol mismatch with Device/PLC. Please update TagData in the project.	This message appears when accessing a symbol that does not exist. Make sure the tag data matches the symbol file.
RHxx130	(Node Name): %s:Out of range value in write request (Address:%s)	This message appears when writing an out of range value. Check the write values.