

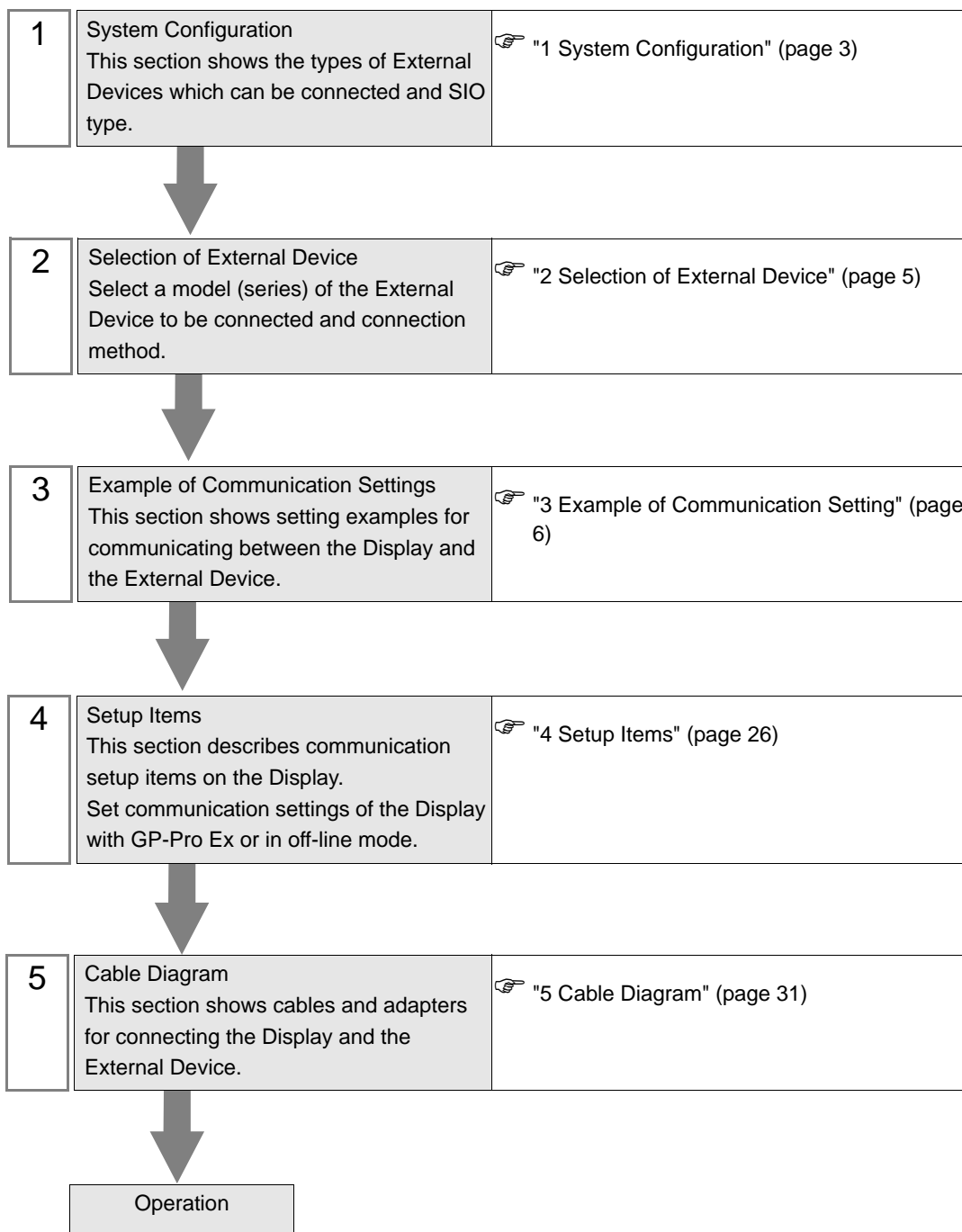
DH-485 Driver

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Introduction

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

In this manual, the connection procedure will be described by following the below sections:



1 System Configuration

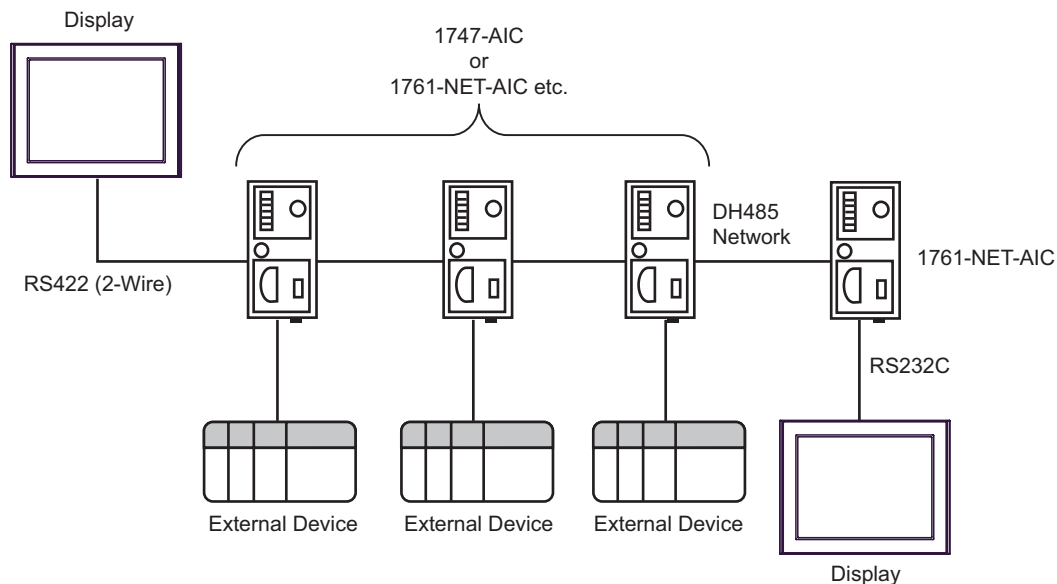
The system configuration in the case when the External Device of Rockwell Automation, Inc. and the Display are connected is shown.

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
SLC500	SLC 5/01 SLC 5/02	DH-485 port	RS232C	Setting Example 1 (page 6)	Cable Diagram 1 (page 31)
			RS422/485 (2wire)	Setting Example 3 (page 10)	Cable Diagram 2 (page 32)
	SLC 5/03 (Channel 1)		RS232C	Setting Example 2 (page 8)	Cable Diagram 1 (page 31)
	RS422/485 (2wire)		Setting Example 4 (page 12)	Cable Diagram 2 (page 32)	
	SLC 5/03 SLC 5/04 SLC 5/05	Channel 0	RS232C	Setting Example 2 (page 8)	Cable Diagram 1 (page 31)
			RS422/485 (2wire)	Setting Example 4 (page 12)	Cable Diagram 2 (page 32)
ControlLogix	Logix5550	CPU Direct	RS232C	Setting Example 5 (page 14)	Cable Diagram 1 (page 31)
			RS422/485 (2wire)	Setting Example 6 (page 16)	Cable Diagram 2 (page 32)
MicroLogix	MicroLogix 1500 (1764-LRP)	Channel 1	RS232C	Setting Example 8 (page 20)	Cable Diagram 1 (page 31)
			RS422/485 (2wire)	Setting Example 10 (page 24)	Cable Diagram 2 (page 32)
	MicroLogix 1000 (1764-LSP, 1764-LRP)	Channel 0	RS232C	Setting Example 7 (page 18)	Cable Diagram 1 (page 31)
			RS422/485 (2wire)	Setting Example 9 (page 22)	Cable Diagram 2 (page 32)
	MicroLogix 1200 MicroLogix 1500 (1764-LSP, 1764-LRP)		RS232C	Setting Example 8 (page 20)	Cable Diagram 1 (page 31)
			RS422/485 (2wire)	Setting Example 10 (page 24)	Cable Diagram 2 (page 32)

■ Connection Configuration

NOTE

- When using more than one driver in a Display, you cannot use the SIMATIC S7 MPI Direct driver of Siemens AG and the MODBUS SLAVE driver of Schneider Electric Industries simultaneously. In addition, you cannot use the DH-485 driver in both COM1 and COM2.



- The maximum length (distance from the first node to the last node) of the DH-485 network is 1219m (4000ft).
- You can connect total 32 units of the Display and the External Device in the DH-485 network at maximum.
- You can communicate from 1 unit of the Display to maximum 16 units of the External Device.

2 Selection of External Device

Select the External Device to be connected to the Display.

The screenshot shows a 'New Project File' dialog box. It has two main sections: 'Device/PLC' and 'Connection Method'. In the 'Device/PLC' section, 'Maker' is set to 'Rockwell Automation, Inc.' and 'Driver' is set to 'DH-485'. There is an unchecked checkbox for 'Use System Area' and a link 'Refer to the manual of this Device/PLC'. In the 'Connection Method' section, 'Port' is set to 'COM1'. At the bottom, there are buttons for 'Back', 'Communication Detail Settings', 'New Screen', and 'Cancel', along with a link 'Go to Device/PLC Manual'.

Setup Items	Setup Description
Maker	Select the maker of the External Device to be connected. Select "Rockwell Automation, Inc.".
Driver	Select a model (series) of the External Device to be connected and connection method. Select "DH-485". Check the External Device which can be connected in "DH-485" in system configuration. ☞ "1 System Configuration" (page 3)
Use System Area	Check this option when you synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the ladder program of the External Device to switch the display or display the window on the Display. Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)" This can be also set with GP-Pro EX or in off-line mode of the Display. Cf. GP-Pro EX Reference Manual "System Area Setting, 5.14.6 Setting Guide of [System Setting Window]" Cf. Maintenance/Troubleshooting "2.14.1 Settings common to all Display models◆System Area Settings"
Port	Select the Display port to be connected to the External Device.

3 Example of Communication Setting

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

When you connect to the DH485 network, use GP-Pro EX and the ladder software to set as below.

3.1 Setting Example 1

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☐ 7 ☒ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

Flow Control ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

DH485 Protocol

Source ID

Maximum ID

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Default

Device-Specific Settings

Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=SLC500 Series, Destination ID=1

◆ Device Setting

To display the setting screen, click ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the DH485 configuration dialog box from the ladder software and set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setup Description
Baud	19200
Node Address	1

3.2 Setting Example 2

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker Series Port [Change Device/PLC](#)

Text Data Mode [Change](#)

Communication Settings

SIO Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☐ 7 ☒ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

Flow Control ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

DH485 Protocol

Source ID

Maximum ID

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Default

Device-Specific Settings

Allowable No. of Device/PLCs 16 Unit(s)

No. Device Name Settings

Series=SLC500 Series, Destination ID=1

◆ Device Setting

To display the setting screen, click ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the DH485 configuration dialog box from the ladder software and set in the [Chan.1-System] tab as below. Please refer to the manual of the External Device for more details.

Setup Items	Setup Description
Driver	DH485
Baud	19200
Max.Node Address	31
Token Hold Factor	1
Node Address	1

NOTE

- There are also such cases that above settings are performed in the [Chan.0-System] tab depending on the connecting port.

3.3 Setting Example 3

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker: Series: Port: [Change Device/PLC](#)

Text Data Mode: [Change](#)

Communication Settings

SIO Type: ☐ RS232C ☒ RS422/485(2wire) ☐ RS422/485(4wire)

Speed:

Data Length: ☐ 7 ☒ 8

Parity: ☐ NONE ☒ EVEN ☐ ODD

Stop Bit: ☒ 1 ☐ 2

Flow Control: ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout: (sec)

Retry:

Wait To Send: (ms)

DH485 Protocol

Source ID:

Maximum ID:

RI / VCC: ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


Default

Device-Specific Settings

Allowable No. of Device/PLCs: 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=SLC500 Series, Destination ID=1

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the DH485 Configuration dialog box from the ladder software and set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setup Description
Baud	19200
Node Address	1

3.4 Setting Example 4

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker Series Port [Change Device/PLC](#)

Text Data Mode [Change](#)

Communication Settings

SIO Type ☐ RS232C ☒ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☐ 7 ☒ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

Flow Control ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

DH485 Protocol

Source ID

Maximum ID

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


Default

Device-Specific Settings

Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=SLC500 Series, Destination ID=1

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the DH485 configuration dialog box from the ladder software and set in the [Chan.1-System] tab as below. Please refer to the manual of the External Device for more details.

Setup Items	Setup Description
Driver	DH485
Baud	19200
Max.Node Address	31
Token Hold Factor	1
Node Address	1

NOTE

- There are also such cases that above settings are performed in the [Chan.0-System] tab depending on the connecting port.

3.5 Setting Example 5

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker Series Port [Change Device/PLC](#)

Text Data Mode [Change](#)

Communication Settings

SIO Type ☒ RS232C ☐ RS422/485[2wire] ☐ RS422/485[4wire]

Speed

Data Length ☐ 7 ☒ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

Flow Control ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

DH485 Protocol

Source ID

Maximum ID

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


Default

Device-Specific Settings

Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=ControlLogix Series, Destination ID=1

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the controller properties dialog box from the ladder software and set in the [Serial Port] tab, then in the [System Protocol] tab as below. Please refer to the manual of the External Device for more details.

◆ [Serial Port] tab

Setup Items	Setup Description
Mode	System
Control	No Handshake
Baud Rate	19200

◆ [System Protocol] tab

Setup Items	Setup Description
Protocol	DH485
Max Station Address	31
Token Hold Factor	1
Station Address	1

3.6 Setting Example 6

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SIQ Type ☐ RS232C ☒ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☐ 7 ☒ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

Flow Control ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

DH485 Protocol

Source ID

Maximum ID

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


Default

Device-Specific Settings

Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=ControlLogix Series, Destination ID=1

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the Controller Properties dialog box from the ladder software and set in the [Serial Port] tab, then in the [System Protocol] tab as below. Please refer to the manual of the External Device for more details.

◆ [Serial Port] tab

Setup Items	Setup Description
Mode	System
Control	No Handshake
Baud Rate	19200

◆ [System Protocol] tab

Setup Items	Setup Description
Protocol	DH485
Max Station Address	31
Token Hold Factor	1
Station Address	1

3.7 Setting Example 7

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker: Rockwell Automation, Inc. Series: DH-485 Port: COM1

Text Data Mode: 1 [Change](#)

Communication Settings

☒ RS232C
 ☐ RS422/485(2wire)
 ☐ RS422/485(4wire)

Speed: 19200

Data Length: ☐ 7 ☒ 8

Parity: ☐ NONE ☒ EVEN ☐ ODD

Stop Bit: ☒ 1 ☐ 2

Flow Control: ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout: 3 (sec)

Retry: 2

Wait To Send: 0 (ms)

DH485 Protocol

Source ID: 0

Maximum ID: 31

☒ RI / VCC
 ☐ RI
 ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


Default

Device-Specific Settings

Allowable No. of Device/PLCs: 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=MicroLogix Series, Destination ID=1

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the DF1/485 configuration dialog box from the ladder software and set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setup Description
Primary Protocol	DH485
Baud	19200
Node Address	1

3.8 Setting Example 8

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SIO Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☐ 7 ☒ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

Flow Control ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

DH485 Protocol

Source ID

Maximum ID

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


Default

Device-Specific Settings

Allowable No. of Device/PLCs: 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=MicroLogix Series, Destination ID=1

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the channel configuration dialog box from the ladder software and set in the [Chan.0] tab as below. Please refer to the manual of the External Device for more details.

Setup Items	Setup Description
Driver	DH485
Baud	19200
Max.Node Address	31
Token Hold Factor	1
Node Address	1

NOTE

- There are also such cases that above settings are performed in the [Chan.1] tab depending on the connecting port.

3.9 Setting Example 9

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker Series Port [Change Device/PLC](#)

Text Data Mode [Change](#)

Communication Settings

SIQ Type ☐ RS232C ☒ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☐ 7 ☒ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

Flow Control ☐ NONE ☒ RT/CTS ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

DH485 Protocol

Source ID

Maximum ID

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


Default

Device-Specific Settings

Allowable No. of Device/PLCs: 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Series=MicroLogix Series, Destination ID=1

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the DF1/485 configuration dialog box from the ladder software and set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setup Description
Primary Protocol	DH485
Baud	19200
Node Address	1

3.10 Setting Example 10

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SIO Type ☐ RS232C ☒ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☐ 7 ☒ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

Flow Control ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

DH485 Protocol

Source ID

Maximum ID

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Device-Specific Settings

Allowable No. of Device/PLCs 16 Unit(s)

No. Device Name Settings

◆ Device Setting

To display the setting screen, click ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



■ Setting of External Device

Open the channel configuration dialog box from the ladder software and set in the [Chan.0] tab as below. Please refer to the manual of the External Device for more details.

Setup Items	Setup Description
Driver	DH485
Baud	19200
Max. Node Address	31
Token Hold Factor	1
Node Address	1

NOTE

- There are also such cases that above settings are performed in the [Chan.1] tab depending on the connecting port.

4 Setup Items

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

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

☞ "3 Example of Communication Setting" (page 6)

4.1 Setup Items in GP-Pro EX

■ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker: Rockwell Automation, Inc. Series: DH-485 Port: COM1 [Change Device/PLC](#)

Text Data Mode: 1 [Change](#)

Communication Settings

SIO Type: ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed: 19200

Data Length: ☒ 7 ☐ 8

Parity: ☒ NONE ☐ EVEN ☐ ODD

Stop Bit: ☒ 1 ☐ 2

Flow Control: ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF

Timeout: 3 (sec)

Retry: 2

Wait To Send: 0 (ms)

DH485 Protocol

Source ID: 0

Maximum ID: 31

RI / VCC: ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Default


Device-Specific Settings


Allowable No. of Device/PLCs: 16 Unit(s)

No. 1 Device Name: PLC1 Settings: Series=SLC500 Series.Destination ID=1

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.
Source ID	Use an integer from 0 to 31 to enter the unit ID of the Display.
Maximum ID	Use an integer from 0 to 31 to enter the maximum number of unit ID of the Display.
RI/VCC	Switches RI/VCC of the 9th pin when you select RS232C for SIO type.

■ Device Setting

To display the setting screen, click  ([Setting]) of the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When [Allowable No. of Device/PLCs] is multiple, you can click  from [Device-Specific Settings] of [Device/PLC Settings] to add the External Device which is available to set.



Setup Items	Setup Description
Series	Select any of "SLC500 Series", "ControlLogix Series" and "MicroLogix Series" for the driver series name.
Destination ID	Use an integer from 0 to 31 to enter the unit ID of the External Device.

4.2 Setup Items in Off-Line Mode

NOTE

- Please refer to Maintenance/Troubleshooting for more information on how to enter off-line mode or about operation.

Cf. Maintenance/Troubleshooting "2.2 Offline Mode"

■ Communication Settings






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

(Page 1/2)

Comm.	Device	Option		
DH-485			[COM1]	Page 1/2
<div> <div>SIO Type</div> <div>Speed</div> <div>Data Length</div> <div>Parity</div> <div>Stop Bit</div> <div>Flow Control</div> <div>Timeout(s)</div> <div>Retry</div> <div>Wait to Send(ms)</div> </div> <div> <div>RS232C</div> <div>19200</div> <div>8</div> <div>EVEN</div> <div>1</div> <div>ER(DTR/CTS)</div> <div>3</div> <div>2</div> <div>0</div> </div>				
				➡
Exit		Back		2005/09/02 13:09:56

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.
Timeout (s)	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send (ms)	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.




(Page 2/2)

Comm.	Device	Option		
DH-485			[COM1]	Page 2/2
Source ID <input type="text" value="0"/>   Maximum ID <input type="text" value="31"/>   (Please confirm that the Source ID is not greater than the Maximum ID.)				
				
Exit		Back		2005/09/02 13:09:58

Setup Items	Setup Description
Source ID	Use an integer from 0 to 31 to enter the unit ID of the Display.
Maximum ID	Use an integer from 0 to 31 to enter the maximum number of unit ID of the Display.

■ Device Setting

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

Comm.	Device	Option		
DH-485			[COM1]	Page 1/1
Device/PLC Name <input type="text" value="PLC1"/> 				
Series <input type="text" value="SLC-500 Series"/> Destination ID <input type="text" value="1"/>   (Please confirm that the Destination ID is not greater than the Maximum ID.)				
Exit		Back		2005/09/02 13:10:00

Setup Items	Setup Description
Device/PLC Name	Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1])
Series	Displays the selected series name.

Setup Items	Setup Description
Destination ID	Use an integer from 0 to 31 to enter the unit ID of the External Device.

■ Option

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 [Option].

Comm.	Device	Option		
DH-485		[COM1]	Page 1/1	
<p>RI / VCC <input checked="" type="radio"/> RI <input type="radio"/> VCC</p> <p>In the case of RS232C, you can select the 9th pin to RI(Input) or VCC(5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.</p>				
	Exit		Back	2005/09/02 13:10:02

Setup Items	Setup Description
RI/VCC	Switches RI/VCC of the 9th pin when you select RS232C for SIO type.

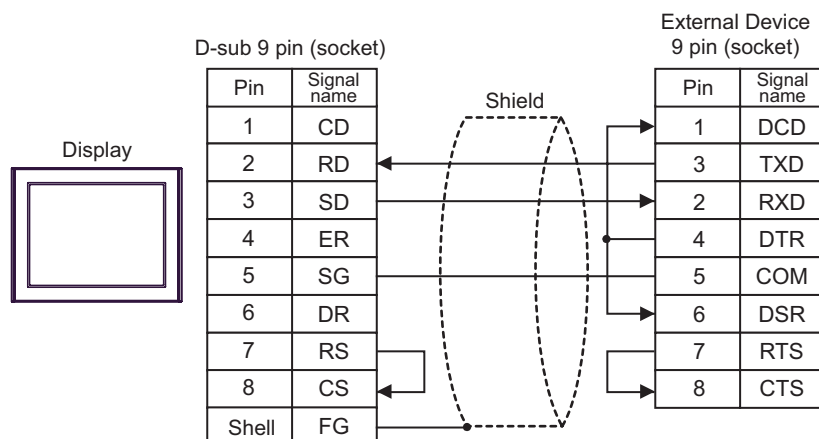
5 Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by Rockwell Automation, Inc. Please be assured there is no operational problem in applying the cable diagram shown in this manual.

- The FG pin of the External Device body must be D-class grounded. Please refer to the manual of the External Device for more details.
- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.
- Connect the isolation unit, when communication is not stabilized under the influence of a noise etc.

Cable Diagram 1

Display (Connection Port)	Cable	Remarks
GP (COM1)	Your own cable	The cable length must be 15m or less.



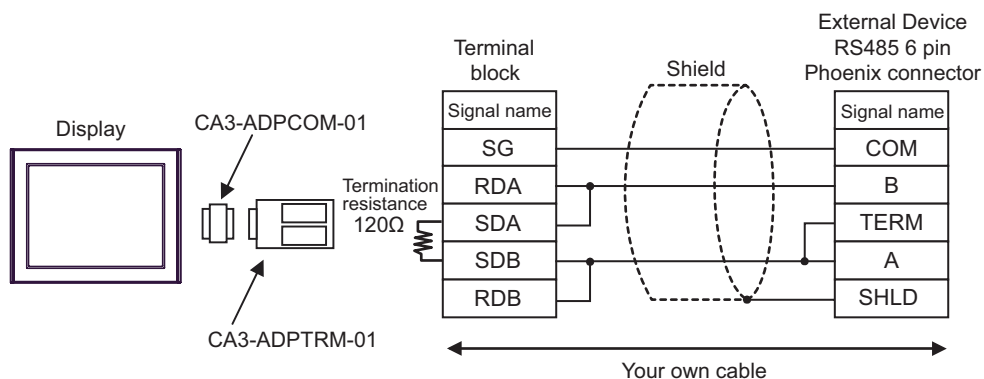
Cable Diagram 2

Display (Connection Port)	Cable		Remarks
GP ^{*1} (COM1) AGP-3302B (COM2)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 15m or less.
	B	Your own cable	
GP ^{*2} (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 15m or less.
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

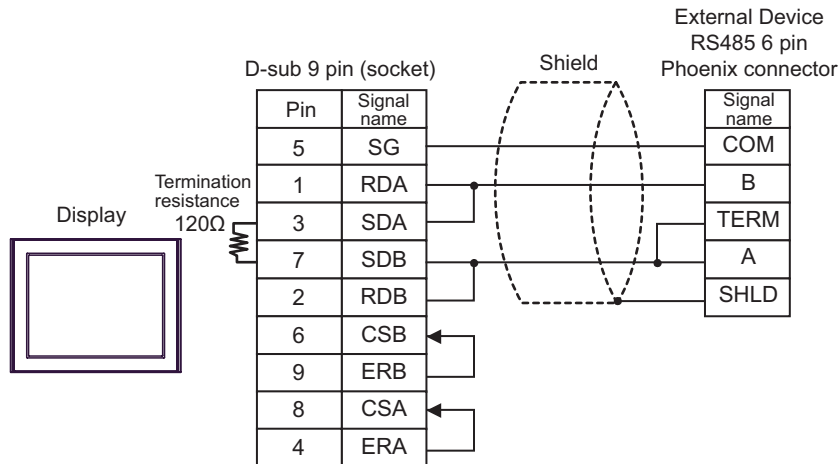
*1 All GP models except AGP-3302B

*2 All GP models except GP-3200 series and AGP-3302B

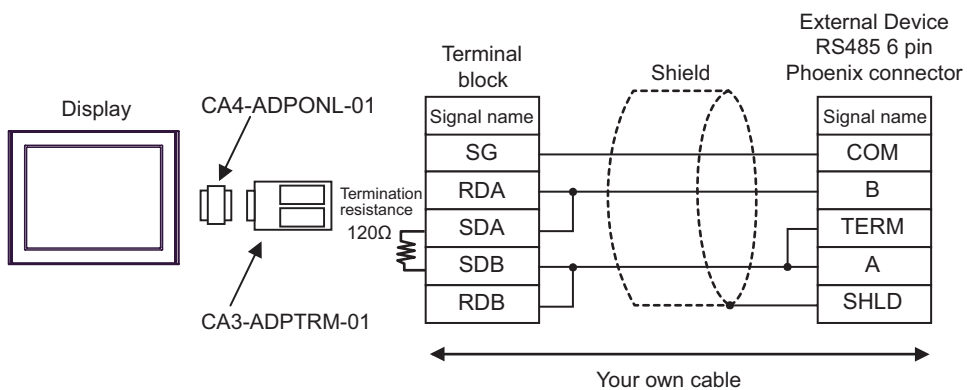
A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and your own cable



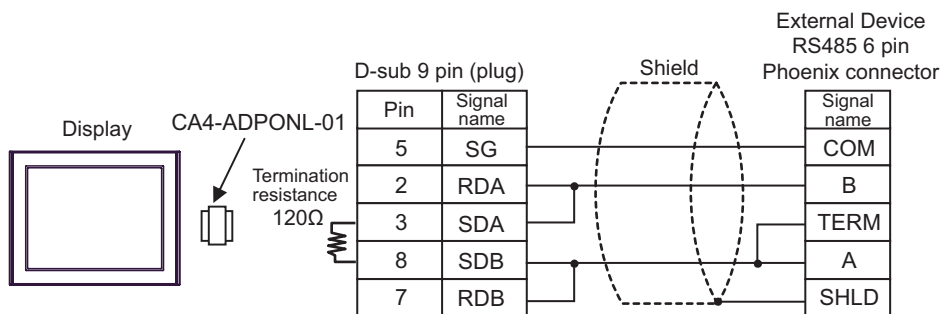
B) When using your own cable



C) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and your own cable




D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable



6 Supported Device

Range of supported device address is shown in the table below. Please note that the actually supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

6.1 SLC500 Series

 This address can be specified as system data area.

Device		Bit Address*1		Word Address		32 bits	Remarks
Input File		I:00.000/00 - I:63.255/15		I:00.000 - I:63.255		<div>L/H</div>	
Output File		O:00.000/00 - O:63.255/15		O:00.000 - O:63.255			
Status File		S:0/0 - S:163/15		S:0 - S:163			
Bit File		B3:0/0 - B3:255/15 B9:0/0 - B255:255/15		B3:0 - B3:255 B9:0 - B255:255			
Timer File	Enable	T4:0/ - T4:255/ T9:0/ - T255:255/	EN	T4:0. - T4:255. T9:0. - T255:255.	---		
	Timing		TT		---		
	Done		DN		---		
	Preset		---		PRE		
	Accumulated		---		ACC		
Counter File	Up Enable	C5:0/ - C5:255/ C9:0/ - C255:255/	CU	C5:0. - C5:255. C9:0. - C255:255.	---		
	Down Enable		CD		---		
	Done		DN		---		
	Overflow		OV		---		
	Underflow		UN		---		
	Updated Acc.		UA		---		
	Preset		---		PRE		
	Accumulated		---		ACC		

continued to next page


Device		Bit Address*1		Word Address		32 bits	Remarks
Control File	Enable	R6:0/ - R6:255/ R9:0/ - R255:255/	EN	R6:0. - R6:255. R9:0. - R255:255.	---	L/H	
	Enable Unload		EU		---		
	Done		DN		---		
	Empty		EM		---		
	Error		ER		---		
	Unload		UL		---		
	Inhibit Comp.		IN		---		
	Found		FD		---		
	Length		---		LEN		
	Position		---		POS		
Integer File		N7:0/0 - N7:255/15 N9:0/0 - N255:255/15		N7:0 - N7:255 N9:0 - N255:255			
Floating Point File		-----		F8:0 - F8:255 F9:0 - F255:255			*2
String File		-----		ST9:0 - ST255:255			
ASCII File		A9:0/0 - A255:255/15		A9:0 - A255:255			

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Change only the target bit address among the word data once read, and write the word data to the External Device.


Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and writes it to the External Device.

*2 32-bit access only

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)" (page 8)
- Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"

6.2 MicroLogix Series

 This address can be specified as system data area.

Device		Bit Address* ¹		Word Address		32 bits	Remarks
Input File		I:00.000/00 - I:08.255/15		I:00.000 - I:08.255		<div>L/H</div>	
Output File		O:00.000/00 - O:08.255/15		O:00.000 - O:08.255			
Status File		S:0/0 - S:163/15		S:0 - S:163			
Bit File		B3:0/0 - B3:255/15 B9:0/0 - B255:255/15		B3:0 - B3:255 B9:0 - B255:255			
Timer File	Enable	T4:0/ - T4:255/ T9:0/ - T255:255/	EN	T4:0. - T4:255. T9:0. - T255:255.	---		
	Timing		TT		---		
	Done		DN		---		
	Preset		---		PRE		
	Accumulated		---		ACC		
Counter File	Up Enable	C5:0/ - C5:255/ C9:0/ - C255:255/	CU	C5:0. - C5:255. C9:0. - C255:255.	---		
	Down Enable		CD		---		
	Done		DN		---		
	Overflow		OV		---		
	Underflow		UN		---		
	Updated Acc.		UA		---		
	Preset		---		PRE		
	Accumulated		---		ACC		
Control File	Enable	R6:0/ - R6:255/ R9:0. - R255:255/	EN	R6:0. - R6:255. R9:0. - R255:255.	---		
	Enable Unload		EU		---		
	Done		DN		---		
	Empty		EM		---		
	Error		ER		---		
	Unload		UL		---		
	Inhibit Comp.		IN		---		
	Found		FD		---		
	Length		---		LEN		
	Position		---		POS		

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Device	Bit Address ^{*1}	Word Address	32 bits	Remarks
Integer File	N7:0/0 - N7:255/15 N9:0/0 - N255:255/15	N7:0 - N7:255 N9:0 - N255:255	[L/H]	
Floating Point File	-----	F8:0 - F8:255 F9:0 - F255:255		*2
String File	-----	ST9:0 - ST255:255		
Long Word File	L9:0/0 - A255:255/31	L9:0 - L255:255		

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Change only the target bit address among the word data once read, and write the word data to the External Device.


Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and writes it to the External Device.





*2 32-bit access only

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)" (page 8)
- Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"

6.3 ContorlLogix Series

 This address can be specified as system data area.


Device	Bit Address ^{*1}	Word Address	32 bits	Remarks
BOOL	BOOL0:0/0 - BOOL999:999/31	BOOL0:000 - BOOL999:999		*2
INT	INT0:0/0 - INT999:999/15	 INT0:000 - INT999:999		*2
REAL	-----	REAL0:000 - REAL999:999		*2
DINT	DINT0:0/0 - DINT999:999/31	DINT0:000 - DINT999:999		*2
SINT	SINT0:0/0 - SINT999:999/7	SINT0:000 - SINT999:998		 7  2 *2

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Change only the target bit address among the word data once read, and write the word data to the External Device.

Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and writes it to the External Device.

*2 To access those addresses and use them in the program of the External Device, you need to set the External Device first.

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)" (page 8)
- Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"

6.4 Setting Procedure of External Device

The following procedure shows how to assign the device in the RSLogix5000 software and specify the address in GP-Pro EX.

1) Tag setting of External Device

Create the Tag Name in the RSLogix5000 software, and set the Type. Map the created Tag Name to a File Number.

- Tag Name : Set optionally.
- Type : Select the data type among below to set the Element.
Match the device name of GP-Pro EX
BOOT(32bit data type)
INT(word data type)
DINT(dword data type)
SINT(byte data type)
REAL(float data type)

Set the range used in GP-Pro EX for the Element. Maximum Element GP-Pro EX can access is 999.

When you do not define the Element, only one item is available to use.

(Example) Tag Name: N8, Type: When INT is set, only one word of N8 can be used.

<Example 1>

Tag Name	Type
N7	INT[200]
DINT1	DINT[100]
DATA2	SINT[50]

1st line: Tag Name "N7" is INT data type with Element 200

2nd line: Tag Name "DINT1" is DINT data type with Element 100

3rd line: Tag Name "DATA2" is SINT data type with Element 50

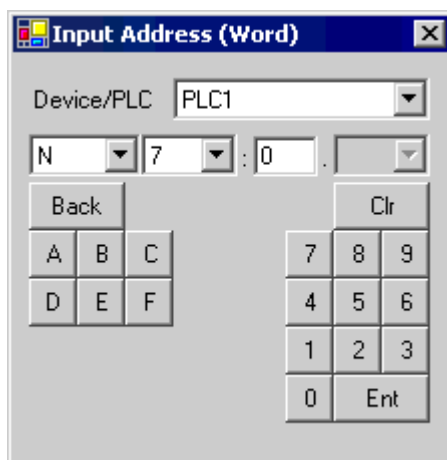
- File Number: Assign the Tag Name created by RSLogix5000 to the optional File Number. You can not assign different Tag Names to the same File Number.

<Example2>

File Number	Tag Name
2	DATA2
1	DINT1
7	N7

2) Address Specification in GP-Pro EX

When you access the External Device from GP-Pro EX, specify Type, File Number and Element.



<Example of address mapping of GP-Pro EX and External Device>

GP-Pro EX Address		External Device File No.1 memory
DINT1:0	↔	DINT 1[0]
DINT1:1	↔	DINT 1[1]
DNT1:2	↔	DINT 1[2]

7 Device Code and Address Code

Use device code and address code when you select "Device Type & Address" for the address type in data displays.

Device	Device Name	Device Code (HEX)	Address Code
Integer File	N	0000	(FileNumber x 0x10000) + Word Address
Floating Point File	F	0001	(FileNumber x 0x10000) + Word Address
String File	ST	0002	(FileNumber x 0x10000) + (Word Address x 0x10)
ASCII File	A	0003	(FileNumber x 0x10000) + Word Address
Long Word File	L	0005	(FileNumber x 0x10000) + Word Address
INT	INT	0010	(FileNumber x 0x10000) + Word Address
REAL	REAL	0011	(FileNumber x 0x10000) + Word Address
DINT	DINT	0012	(FileNumber x 0x10000) + Word Address
SINT	SINT	0013	(FileNumber x 0x10000) + (Address divided by 2)
Input File	I	0080	0x10000 + (Slot Number x 0x100) + Word Address
Output File	O	0081	(SlotNumber x 0x100) + Word Address
Bit File	B	0082	(FileNumber x 0x10000) + Word Address
Status File	S	0083	0x20000 + Word Address
BOOL	BOOL	0090	(FileNumber x 0x10000) + Word Address
Timer File	EN	00E0	(FileNumber x 0x10000) + Word Address
	TT	00E1	(FileNumber x 0x10000) + Word Address
	DN	00E2	(FileNumber x 0x10000) + Word Address
	PRE	0060	(FileNumber x 0x10000) + Word Address
	ACC	0061	(FileNumber x 0x10000) + Word Address

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Device	Device Name	Device Code (HEX)	Address Code
Counter File	CU	00E3	(FileNumber x 0x10000) + Word Address
	CD	00E4	(FileNumber x 0x10000) + Word Address
	DN	00E5	(FileNumber x 0x10000) + Word Address
	OV	00E6	(FileNumber x 0x10000) + Word Address
	UN	00E7	(FileNumber x 0x10000) + Word Address
	UA	00E8	(FileNumber x 0x10000) + Word Address
	PRE	0062	(FileNumber x 0x10000) + Word Address
	ACC	0063	(FileNumber x 0x10000) + Word Address
Control File	EN	00F0	(FileNumber x 0x10000) + Word Address
	EU	00F1	(FileNumber x 0x10000) + Word Address
	DN	00F2	(FileNumber x 0x10000) + Word Address
	EM	00F3	(FileNumber x 0x10000) + Word Address
	ER	00F4	(FileNumber x 0x10000) + Word Address
	UL	00F5	(FileNumber x 0x10000) + Word Address
	IN	00F6	(FileNumber x 0x10000) + Word Address
	FD	00F7	(FileNumber x 0x10000) + Word Address
	LEN	0064	(FileNumber x 0x10000) + Word Address
	POS	0065	(FileNumber x 0x10000) + Word Address

8 Error Messages

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

Item	Description
No.	Error No.
Device Name	Name of the External Device where error occurs. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	<p>Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device.</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;">NOTE</div> <ul style="list-style-type: none"> 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 [02])"

NOTE

- Please refer to the manual of the External Device for more detail of received error codes.
- Please refer to "When an error message is displayed (Error code list)" of "Maintenance/Troubleshooting" for a common error message to the driver.