Schneider Electric Industries

MODBUS SLAVE Driver

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Introduction

This manual describes how to connect the Display and the External Device.

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

1	System Configuration This section shows the types of External Devices which can be connected and SIO type.	"1 System Configuration" (page 3)
2	Selection of External Device Select a model (series) of the External Device to be connected and connection method.	"2 Selection of External Device" (page 7)
	•	
3	Example of Communication Settings This section shows setting examples for communicating between the Display and the External Device.	"3 Example of Communication Setting" (page 8)
	•	
4	Setup Items This section describes communication setup items on the Display. Set communication settings of the Display with GP-Pro EX or in off-line mode.	^{ক্টেল} "4 Setup Items" (page 16)
5	Cable Diagram This section shows cables and adapters for connecting the Display and the External Device.	"5 Cable Diagram" (page 26)
	Operation	

1 System Configuration

The system configuration in the case when the External Device of Shneider Electric Industries and the Display are connected is shown.

Serial

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
	US s MODBUS Master Type	Serial Port	RS422/485 (2wire)	"3.1 Setting Example 1" (page 8)	" Cable Diagram 1" (page 26)
MODBUS Series			RS232C	"3.2 Setting Example 2" (page 10)	" Cable Diagram 2" (page 31)
			RS422/485 (4wire)	"3.3 Setting Example 3" (page 12)	" Cable Diagram 3" (page 32)

■ Ethernet (TCP)

Series	CPU	Link I/F	SIO Type	Setting Example
MODBUS Series	MODBUS Master Type	Ethernet Port	Ethernet (TCP)	"3.4 Setting Example 4" (page 14)

Connection Configuration

• When using more than one driver in a Display, you cannot use the DH-485 driver of Rockwell Automation, Inc and the SIMANTIC S7 MPI Direct of Siemens AG simultaneously. In addition, you cannot use MODBUS SLAVE Driver in both COM1 and COM2.

Serial

[Connection example 1:1]



[Connection example n:1]



You can connect maximum 16 units of Display (Slave).

• Ethernet (TCP)



You can connect maximum 16 units of Display (Slave).

[Connection example 1:m]



You can connect maximum 16 units of External Device (Master).

[Connection example n:m]



You can connect maximum 16 units of External Device (Master). Note that there is no communication between the Displays (Slaves).

2 Selection of External Device

Select the External Device to be connected to the Display.

💰 New Project File		×
GP-Pro 🛃	Device/PLC Maker Schneider Electric Industries	
	Driver MODBUS SLAVE	•
	Use System Area	Refer to the manual of this Device/PLC
	Connection Method	
	Port COM1	
		Go to Device/PLC Manual
Back	(B) Communication Settings New Log	ic New Screen Cancel

Setup Items	Setup Description		
Maker	Select the maker of the External Device to be connected. Select "Schneider Electric Industries".		
Driver	Select a model (series) of the External Device to be connected and connection method. Select "MODBUS SLAVE". Check the External Device which can be connected in "MODBUS SLAVE" in system configuration.		
	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.		
	access method)"		
Use System Area	This can be also set with GP-Pro EX or in off-line mode of the Display.		
	Cf. GP-Pro EX Reference Manual "5.14.6 Setting Guide of [System Setting Window]■Setting Guide of [Main Unit Settings] ■System Area Setting"		
	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.		

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3 Example of Communication Setting

Examples of communication settings of the Display and the External Device, recommended by Digital Electronics Corp., are shown.

3.1 Setting Example 1

- Setting of GP-Pro EX
- Communication Settings

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

Devic	e/PLC1		
Sum	mary		Change Device/PLC
	Maker Schneider E	lectric Industries	Driver MODBUS SLAVE Port COM1
	Text Data Mode	1 <u>Change</u>	
Com	munication Settings		
	SIO Type	C RS232C	RS422/485(2wire) RS422/485(4wire)
	Speed	19200	v
	Data Length	O 7	• 8
	Parity	O NONE	EVEN ODD
	Stop Bit	€ 1	C 2
	Flow Control	NONE	C ER(DTR/GTS) C XON/XOFF
	Wait To Send	β 🚊 ((ms) 🔽 Default Value
	Equipment Address		
	Slave Equipment (Address 1	
	BL/VCC	© BI	
	In the case of RS2	32C, you can seled	et the 9th pin to RI (Input)
	or VCC (5V Power Isolation Unit, pleas	Supply). If you use e select it to VCC.	e the Digital's RS232C
Dev	Allowable No. of Dev	ice/PLCs_1 Unit(s	a) [m#]
	No. Device Na	me	Settings
	👗 1 PLC1		IEC61131 Syntax=OFF,Double Word word order=Low word first(L/H)

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].

💰 Individual Device Settin	IES	×
PLC1		
Address Mode Please reconfirm all of address have changed the setting.	O-based (Default)	
Variables Double Word word order	Low word first(L/H)	
	Default	
	OK (<u>0)</u> Cancel	

Settings of External Device

The communication settings depend on the External Device (Master) to be used. Please refer to the manual of the External Device for more details.

Procedure

1. Set the communication settings of the External Device (Master) as follows.

Setup Items	Setup Description
Transmission Speed	19200
Data Length	8
With/Without Parity	ON
Parity Bit	EVEN
Stop Bit	1
Flow Control	NONE
Wait To Send	3 or more
Address Mode	Modicon

NOTE

• Keep a gap of 3.5 characters or more between packets.

- 3.2 Setting Example 2
 - Setting of GP-Pro EX
 - ♦ Communication Settings

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

Devid	e/PLC 1			
Sum	mary		Change Devic	e/PLC
	Maker Schneider E	lectric Industries	Driver MODBUS SLAVE Port COM1	
	Text Data Mode	1 <u>Change</u>		
Corr	munication Settings			
	SIO Type	 RS232C 	O RS422/485(2wire) O RS422/485(4wire)	
	Speed	19200	×	
	Data Length	C 7	• 8	
	Parity	O NONE	EVEN ODD	
	Stop Bit	● 1	O 2	
	Flow Control	NONE	C ER(DTR/CTS) C XON/XOFF	
	Wait To Send	β 🚍 ((ms) 🔽 Default Value	
	Equipment Address			
	Slave Equipment A	Address 1		
Ē	BL/VCC		C VCC	
	In the case of RS2 or VCC (5V Power Isolation Unit, please	32C, you can selec Supply). If you use	ect the 9th pin to RI (Input) se the Digital's RS232C	
L	rsolation onit, pleas		. Default	
Dev	ice-Specific Settings			
	Allowable No. of Dev No. Device Na	ice/PLUs 1 Unit(s me	sj uig Settings	
	🔏 1 PLC1		IEC61131 Syntax=OFF,Double Word word order=Low word first(L	./H)

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].

💰 Individual Device Setti	ngs	×
PLC1		
Address Mode Please reconfirm all of address have changed the setting.	D-based (Default)	
Variables Double Word word order	Low word first(L/H)	
	Default	
	OK (<u>0)</u> Cancel	

Settings of External Device

The communication settings depend on the External Device (Master) to be used. Please refer to the manual of the External Device for more details.

Procedure

1. Set the communication settings of the External Device (Master) as follows.

Setup Items	Setup Description
Transmission Speed	19200
Data Length	8
With/Without Parity	ON
Parity Bit	EVEN
Stop Bit	1
Flow Control	NONE
Wait To Send	3 or more
Address Mode	Modicon

NOTE

• Keep a gap of 3.5 characters or more between packets.

- 3.3 Setting Example 3
 - Setting of GP-Pro EX
 - ♦ Communication Settings

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

Devid	e/PLC1				
Sum	mary				Change Device/PLC
	Maker Schneider El	ectric Industries	Driver MOD	BUS SLAVE	Port COM1
	Text Data Mode	1 <u>Change</u>			
Corr	munication Settings				
	SIO Type	C RS232C	C RS422/485(2wire)	e) 📀 RS422/485(4wire)	
	Speed	19200	•		
	Data Length	C 7	• 8		
	Parity	C NONE	EVEN	C ODD	
	Stop Bit	€ 1	O 2		
	Flow Control	NONE	C ER(DTR/CTS)	C XON/XOFF	
	Wait To Send	β 📑 (ms) 🔽 Default Va	alue	
	Equipment Address				
	Slave Equipment A	Address 1			
	RI / VCC	© RI	O VCC		
	In the case of RS23	32C, you can selec	t the 9th pin to RI (Inpu	it)	
	Isolation Unit, pleas	e select it to VCC.	the Digital's H5232C	Default	
Dev	ice-Specific Settings				
2.51	Allowable No. of Devi	ice/PLCs 1 Unit(s)) 📑		
	No. Device Nar	ne	Settings		1 1 10 10 115
	PLU1		LECTION ST	Syntax=UFF,Double Word word on	der=Low word first(L/H)

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].

💰 Individual Device Settir	ngs	×
PLC1		
Address Mode Please reconfirm all of address have changed the setting.	O-based (Default)	
Variables Double Word word order	Low word first(L/H)	
	Default]
	OK (<u>O)</u> Cancel	

Settings of External Device

The communication settings depend on the External Device (Master) to be used. Please refer to the manual of the External Device for more details.

Procedure

1. Set the communication settings of the External Device (Master) as follows.

Setup Items	Setup Description
Transmission Speed	19200
Data Length	8
With/Without Parity	ON
Parity Bit	EVEN
Stop Bit	1
Flow Control	NONE
Wait To Send	3 or more
Address Mode	Modicon

NOTE

• Keep a gap of 3.5 characters or more between packets.

3.4 Setting Example 4

- Setting 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			<u>C</u>	hange Device/PLC
Maker Schneider Electric Industries	Driver	MODBUS SLAVE	Port	Ethernet (TCP)
Text Data Mode 1 <u>Change</u>				
Communication Settings				
Port No. 502 💼				
Wait To Send 🛛 📑 (ms)				
Unit ID 255 📑				
		Default		
Device-Specific Settings	_			
Allowable No. of Device/PLCs 1 Unit(s)	đ			
No. Device Name	Settings	S1121 Suptau-OEE Double Word word or	dor-L or	u word first(L/H)
		or or or syntax-or , bouble word word or	ICI-LU	wword ms(L/H)

♦ Device Setting

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

💣 Individual Device Setti	ings	×
PLC1		
Address Mode Please reconfirm all of address have changed the setting.	O-based (Default)	
Variables Double Word word order	Low word first(L/H)	
	Default	
	OK (<u>O</u>) Cancel	

Settings of External Device

The communication settings depend on the External Device (Master) to be used. Please refer to the manual of the External Device for more details.

♦ Procedure

1. Set the communication settings of the External Device (Master) as follows.

Setup Items	Setup Description
Wait To Send	0
Source port number	Any number
Destination port number	502
Address Mode	Modicon

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 8)

4.1 Serial Connection

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	Change Device/PLC
Maker Schneider Electric Industries	Driver MODBUS SLAVE Port COM1
Text Data Mode 1 Change	
Communication Settings	
SIO Type 💿 RS232C	O RS422/485(2wire) O RS422/485(4wire)
Speed 19200	•
Data Length 🔿 7	• 8
Parity 🔿 NONE	EVEN ODD
Stop Bit 💿 1	O 2
Flow Control 💿 NONE	C ER(DTR/CTS) C XON/XOFF
Wait To Send 🛛 🚊	(ms) 🔽 Default Value
Equipment Address	
Slave Equipment Address 1	
RI/VCC © RI	© VCC
In the case of RS232C, you can sele	ect the 9th pin to RI (Input)
Isolation Unit, please select it to VCC	Default
Device-Specific Settings	
Allowable No. of Device/PLCs 1 Unit	(s)
No. Device Name	Settings
	In the syntax - or r, bouble word word order=Low word first(L/H)

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	Display the communication control method to prevent overflow of transmission and reception data.		

Setup Items	Setup Description		
Wait To Send	Use an integer from "1 to 255" to enter standby time (ms) for the Display from receiving packets to transmitting next commands. When the check box of the default value is checked, the Wait To Send value automatically changes in the formula below by changing each value for Speed/Data Length/Parity/Stop Bit. Wait To Send (ms) = $\frac{3500 \text{ x} (1 + \text{Data Length} + \text{Stop Bit} + \text{Parity})}{\text{Speed (bps)}}$		
	Value for the parity setting is shown below. No Parity = 0 Parity Even = 1 Parity Odd = 1		
Slave Equipment Address	Use an integer from "1 to 247" to enter the slave address of the External Device.		
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type.		

Device Setting

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

When you connect multiple External Device, click if from [Device-Specific Settings] of [Device/PLC Settings] to add the External Device which is available to set.

💰 Individual Device Settings 🛛 🗙				
PLC1				
Address Mode	0-based (Default)			
Please reconfirm all of address settings that you are using if you have changed the setting.				
Variables				
Double Word word order	Low word first(L/H)			
	Default			
	OK (<u>O)</u> Cancel			

Setup Items	Setup Description	
IEC61131 Syntax	Check this item when you use the IEC61131 grammar for variables.	
Address Mode	If you check the IEC61131 Syntax check box, select the address mode from "0-based" or "1-based".	
Double Word word order	Select the order of storing double word data from "Low word first" or "High word first".	

Settings 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 Equipment Settings] in the off-line mode. Touch the External Device you want to set from the displayed list.

Comm.	Device	Option		
MODBUS SLAVE			[COM1]	Page 1/1
	SIO Type Speed Data Length Parity Stop Bit Flow Control Wait To Send(ms) Slave Address	RS232C 19200 7 NONE 1 NONE	● 8 ● EVEN ● 2 3 ♥ 1 ♥	
	Exit		Back	2006/10/19 09:18:19

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. MPORTANT To make the communication settings correctly, confirm the serial interface specifications of Display unit for [SIO Type]. We cannot guarantee the operation if a communication type that the serial interface does not support is specified. For details concerning the serial interface specifications, refer to the manual for Display unit.
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	Display the communication control method to prevent overflow of transmission and reception data.

Setup Items	Setup Description		
Wait To Send	Use an integer from "1 to 255" to enter standby time (ms) for the Display from receiving packets to transmitting next commands. After changing the values of Speed/Data Length/Parity/Stop Bit, set the Wait To Send value using the following formula. Wait To Send (ms) = $\frac{3500 \text{ x} (1 + \text{Data Length} + \text{Stop Bit} + \text{Parity})}{\text{Speed (bps)}}$ Value for the parity setting is shown below. No Parity = 0		
	Parity Even = 1 Parity Odd = 1		
Slave Address	Use an integer from "1 to 247" to enter the slave address of the External Device.		

Device Setting

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

Device	Option		
		-	
		[COM1]	Page 1/1
e/PLC Name PLC	01		
IEC61131 Syntax Double Word word	OFF order Low wo	nd first	
Exit		Back	2006/10/19 09:18:24
	Device e/PLC Name PLG IEC61131 Syntax Double Word word	Device Option e/PLC Name PLC1 IEC61131 Syntax OFF Double Word word order Low wo	Device Option [COM1] e/PLC Name PLC1 IEC61131 Syntax OFF Double Word word order Low word first

Setup Items	Setup Description
Device/PLC name	Select the External Device to set. Device name is a title of the External Device set with GP- Pro EX. (Initial value [PLC])
IEC61131 Syntax	Displays whether IEC61131 syntax is used or not.
DWord Word Order	Displays the order in which double word data is stored.

Option

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

Comm.	Device	Option		
MODBUS SLAVE	RI / VCC In the case the 9th pin Power Suppl RS232C Isol it to VCC.	 RI of RS232C, you to RI(Input) or y). If you use th ation Unit, plea 	[COM1] can select VCC(5V e Digital's se select	Page 1/1
	Exit	-	Back	2006/10/19 09:18:30

Setup Items	Setup Description
RI/VCC	Switches RI/VCC of the 9th pin.

- 4.2 Ethernet (TCP) Connection
 - 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				Change Device/PLC
Maker Schneider Electric Industries	Driver	MODBUS SLAVE	Por	t Ethernet (TCP)
Text Data Mode 1 Change				
Communication Settings				
Port No. 502				
Wait To Send 🛛 📑 (ms)			
Unit ID 255 📫				
		Default		
Device-Specific Settings	_			
Allowable No. of Device/PLCs 1 Unit(s)				
No. Device Name	Settings	61131 Syntax=OFF,Dou	ble Word word order=L	ow word first(L/H)

Setup Items	Setup Description
Port No.	Use an integer "502" or from "1024 to 65535" to enter the port No. of the Display.
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.
Unit ID	Use an integer from "1 to 247" or "255" to enter the slave address.

Device Setting

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

When you connect multiple External Device, click if from [Device-Specific Settings] of [Device/PLC Settings] to add the External Device which is available to set.

💰 Individual Device Sett	ings	×
PLC1		
Address Mode	0-based (Default)	
Please reconfirm all of addres have changed the setting.	is settings that you are using if you	
Variables		
Double Word word order	Low word first(L/H)	
	Default	
	OK (<u>0)</u> Cancel]

Setup Items	Setup Description
IEC61131 Syntax	Check this item when you use the IEC61131 grammar for variables.
Address Mode	If you check the IEC61131 Syntax check box, select the address mode from "0-based" or "1-based".
Double Word word order	Select the order of storing double word data from "Low word first" or "High word first".

Settings 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 Equipment Settings] in the off-line mode. Touch the External Device you want to set from the displayed list.

Comm.	Device		
MODBUS SLAVE		[TCP]	Page 1/1
	Port No.	502 💌	
	Wait To Send(ms)	0 🔻	
	Unit ID	255 💌	
	Eurit a	Deale	2006/10/19
4	EXIT	Rack	09:25:45

Setup Items	Setup Description
Port No.	Use an integer "502" or from "1024 to 65535" to enter the port No. of the Display.
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.
Unit ID	Use an integer from "1 to 247" or "255" to enter the slave address.

Device Setting

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

Comm.	Device		-	
MODBUS SLAVE			[TCP]	Page 1/1
Devic	e/PLC Name PLC	01		
	IEC61131 Syntax	ÛFF		
	Double Word word	order Low wo	ord first	
	Evit		Deale	2006/10/19
	Exit		Rack	09:25:48

Setup Items	Setup Description
Device/PLC name	Select the External Device to set. Device name is a title of the External Device set with GP- Pro EX. (Initial value [PLC])
IEC61131 Syntax	Displays whether IEC61131 syntax is used or not.
DWord Word Order	Displays the order in which double word data is stored.

5 Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by Schneider Electric Industries. Please be assured there is no operational problem in applying the cable diagram shown in this manual.

- The FG pin of the main body of the External Device 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 ^{*1} (COM1) AGP-3302B (COM2)	А	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	В	Your own cable	Cable length:
GP*2 (COM2)	С	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	1,000m or less (Depends on master's capacity)
	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 terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

• 1:1 Connection



- B. When your own cable is used
- 1:1 Connection



Your own cable

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

• 1:1 Connection



- D. When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable
- 1:1 Connection



Cable Diagram 2

Display (Connection Port)		Cable	Remarks
GP (COM1)	Α	Your own cable	Cable length:
PC/AT	В	Your own cable	15m or less

A.When using your own cable (flow control: none)



B.When using your own cable (flow control: DTR/CTS)



Cable Diagram 3

Display (Connection Port)		Cable	Remarks
GP ^{*1} (COM1) AGP-3302B (COM2)	А	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	В	Your own cable	Cable length:
GP ^{*2} (COM2)	С	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	(Depends on master's capacity)
	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 terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
- 1:1 Connection



B.When your own cable is used

• 1:1 Connection



C.When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-

- 01) by Pro-face and your own cable
- 1:1 Connection



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

• 1:1 Connection



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.

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Coil	000001-008192	000001-008177		÷1B+
Discrete Input	100001-108192	100001-108177		<u>÷1₿+</u> 1 *2
Input Register	300001,00-310000.15	300001-310000		<u>ві</u> т 15) *2
Holding Register	400001,00-410000,15	400001-410000	*1	<u>ві (15</u>)

*1 You can set the data storing order in word unit of 32-bit data in the Device Setting dialog box.

*2 Write disable

IEC61131 Syntax Address Description

The following is a corresponding table for IEC61131 syntax and MODBUS syntax address descriptions.

	MODBUS Syntax			IEC61131 Syntax				
Device Format					0-based		1-based	
	Format	Range	First element	Format	Range	First element	Range	First element
Coil	000001+ i	i = 0 to 8191	000001	%Mi	i = 0 to 8191	%M00000	i = 1 to 8192	%M00001
Discrete Input	100001+ i	i = 0 to 8191	100001	-	-	-	-	-
Input Register (Word)	300001+ i	i = 0 to 9999	300001	-	-	-	-	-
Input Register (Word bit)	300001+ i, j	i = 0 to 9999 j = 0 to 15	300001,0 0	-	-	-	-	-
Holding Register (Word)	400001+ i	i = 0 to 9999	400001	%MWi	i = 0 to 9999	%MW00000	i = 1 to 10000	%MW00001
Holding Register (Word bit)	400001+ i, j	i = 0 to 9999 j = 0 to 15	400001,0 0	%MWi: Xj	i = 0 to 9999 j = 0 to 15	%MW00000 :X00	i = 1 to 10000 j = 0 to 15	%MW00001 :X00

NOTE	 The addresses 100000 and 300000 cannot be accessed using IEC61131 syntax. If you apply IEC61131 syntax to a project which has a discrete input or input register already se the addresses become "-Undefined-". 					
NOTE	Please refer to the GP-Pro EX Reference Manual for system data area.					
	Cf. GP-Pro EXReference Manual "Appendix 1.4 LS Area (only for direct access method)"					
	• Please refer to the precautions on manual notation for icons in the table.					
	"Manual Symbols and Terminology"					

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.

7.1 Modicon Syntax

Device	Device Name	Device Code (HEX)	Address Code
Coil	0	0080	(Word Address - 1)/16
Discrete Input	1	0081	(Word Address - 1)/16
Input Register	3	0001	Word Address - 1
Holding Register	4	0000	Word Address - 1

7.2 IEC61131 Syntax

Address Mode: 0-based

Device	Device Name	Device Code (HEX)	Address Code
Coil	%M	0080	Word Address /16
Holding Register	%MW	0000	Word Address

Address Mode: 1-based

Device	Device Name	Device Code (HEX)	Address Code
Coil	%M	0080	(Word Address - 1)/16
Holding Register	%MW	0000	Word Address - 1

8 Error Messages

Error messages are displayed on the screen of the 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 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.		
	Displays IP address or device address of the External Device where error occurs, or error codes received from the 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
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 manual" for cross-driver error message.

Error Codes Specific to the External Device

Error codes specific to the External Device are shown below.

Error Code	Description
RHxx128	Checksum does not match the packet actually received.
RHxx129	The MODBUS slave driver cannot be shared between COM1 and COM2.
RHxx130	The MODBUS slave driver cannot be used with the driver for COM%d.