Fuji Electric Co.,Ltd.

# Temperature Controller MODBUS SIO Driver

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#### Introduction

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

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



# 1 System Configuration

The following table lists system configurations for connecting Fuji Electric Co.,Ltd. External Devices and the Display.

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
DVU	PXH□□□□□-□□■□□ <sup>*1</sup>	PC Loader Port on CPU Unit	RS-232C	"Setting Example 1" (page 8)	" Cable Diagram 1" (page 29)
		Port on CPU Unit	RS-422/485 (2 wire)	"Setting Example 2" (page 10)	" Cable Diagram 2" (page 31)
PXG	PXG4 $\Box$	PC Loader Port on CPU Unit	RS-232C	"Setting Example 3" (page 12)	" Cable Diagram 1" (page 29)
		Port on CPU Unit	RS-422/485 (2 wire)	"Setting Example 4" (page 14)	" Cable Diagram 3" (page 42)
PXR (AutoFIX)	PXR3000-000-0 <sup>*3</sup> PXR4000-0000 <sup>*3</sup> PXR5000-0000 <sup>*3</sup> PXR7000-0000 <sup>*3</sup> PXR90000-000 <sup>*3</sup>	Port on CPU Unit	RS-422/485 (2 wire)	"Setting Example 5" (page 16)	" Cable Diagram 3" (page 42)
PXR (NoAuto- FIX)	PXR4□□□-□□■□□* <sup>3*4*6</sup>	Port on CPU Unit	RS-422/485 (2 wire)	"Setting Example 6" (page 18)	" Cable Diagram 3" (page 42)
PUM	PUMADDD-DDDD PUMBDDD-DDDD PUMEDDD-DD PUMVDDD-DDD PUMNDDD-DDDD PUMNDDD-DDDD PUMTDDD-DDDD	PC Loader Port on CPU Unit	RS-232C	"Setting Example 7" (page 20)	" Cable Diagram 1" (page 29)
		Port on CPU Unit	RS-422/485 (2 wire)	"Setting Example 8" (page 22)	" Cable Diagram 4" (page 53)

\*1 The CPU type can be connected with RS-422/485 (2 wire) when the ■ section includes the following code: R (RS-485)

- \*2 The CPU type can be connected with RS-422/485 (2 wire) when the section includes the following codes: M (RS-485)
  - V (RS-485 + Digital input (No.1))

K (RS-485 + RSV1)

- J (RS-485 + CT1)
- F (RS-485 + Digital input (No.1) + RSV1)
- U (RS-485 + Digital input (No.1, 2, 3))
- \*3 The CPU type can be connected with RS-422/485 (2 wire) when the section includes the following codes: M (RS-485 Modbus interface)
   V (RS-485 Modbus interface + Digital input 1 point)
- \*4 PXR4 Socket type cannot be connected because it lacks a serial port option.
- \*5 CPU Unit released in July 2001 or later
- \*6 CPU Unit released in June 2001 or earlier

### Connection Configuration

• 1:1 Connection



• 1:n Connection



#### IPC COM Port

When connecting IPC with an External Device, the COM port used depends on the series and SIO type. Please refer to the IPC manual for details.

#### Usable port

Series	Usable Port			
Conco	RS-232C	RS-422/485(4 wire)	RS-422/485(2 wire)	
PS-2000B	COM1 <sup>*1</sup> , COM2, COM3 <sup>*1</sup> , COM4	-	-	
PS-3450A, PS-3451A, PS3000-BA, PS3001-BD	COM1, COM2 <sup>*1*2</sup>	COM2 <sup>*1*2</sup>	COM2 <sup>*1*2</sup>	
PS-3650A (T41 model), PS-3651A (T41 model)	COM1 <sup>*1</sup>	-	-	
PS-3650A (T42 model), PS-3651A (T42 model)	COM1 <sup>*1*2</sup> , COM2	COM1*1*2	COM1*1*2	
PS-3700A (Pentium®4-M) PS-3710A	COM1 <sup>*1</sup> , COM2 <sup>*1</sup> , COM3 <sup>*2</sup> , COM4	COM3 <sup>*2</sup>	COM3 <sup>*2</sup>	
PS-3711A	COM1 <sup>*1</sup> , COM2 <sup>*2</sup>	COM2 <sup>*2</sup>	COM2 <sup>*2</sup>	
PS4000 <sup>*3</sup>	COM1, COM2	-	-	
PL3000	COM1 <sup>*1*2</sup> , COM2 <sup>*1</sup> , COM3, COM4	COM1*1*2	COM1 <sup>*1*2</sup>	

\*1 The RI/5V can be switched. Use the IPC's switch to change if necessary.

\*2 Set up the SIO type with the DIP Switch. Please set up as follows according to SIO type to be used.

\*3 When making communication between an External Device and COM port on the Expansion slot, only RS-232C is supported. However, ER (DTR/CTS) control cannot be executed because of the specification of COM port.
For connection with External Device, use user-created cables and disable Pin Nos. 1.4, 6 and 9.

For connection with External Device, use user-created cables and disable Pin Nos. 1, 4, 6 and 9. Please refer to the IPC manual for details of pin layout.

DIP Switch setting: RS-232C

DIP Switch	Setting	Description	
1	OFF <sup>*1</sup>	Reserved (always OFF)	
2	OFF	SIO type: RS-232C	
3	OFF	510 type. R5-252C	
4	OFF	Output mode of SD (TXD) data: Always output	
5	OFF	Terminal resistance (220 $\Omega$ ) insertion to SD (TXD): None	
6	OFF	Terminal resistance (220 $\Omega$ ) insertion to RD (RXD): None	
7	OFF	Short-circuit of SDA (TXA) and RDA (RXA): Not available	
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Not available	
9	OFF	- RS (RTS) Auto control mode: Disabled	
10	OFF		

\*1 When using PS-3450A, PS-3451A, PS3000-BA and PS3001-BD, turn ON the set value.

DIP Switch	Setting	Description	
1	OFF	Reserved (always OFF)	
2	ON	SIO type: PS-422/485	
3	ON	510 type. R5-422/465	
4	OFF	Output mode of SD (TXD) data: Always output	
5	OFF	Terminal resistance (220 $\Omega$ ) insertion to SD (TXD): None	
6	OFF	Terminal resistance (220 $\Omega$ ) insertion to RD (RXD): None	
7	OFF	Short-circuit of SDA (TXA) and RDA (RXA): Not available	
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Not available	
9	OFF	- RS (RTS) Auto control mode: Disabled	
10	OFF		

DIP Switch setting: RS-422/485 (4 wire)

#### DIP Switch setting: RS-422/485 (2 wire)

DIP Switch	Setting	Description	
1	OFF	Reserved (always OFF)	
2	ON	SIO type: DS 422/485	
3	ON	510 type. K5-422/465	
4	OFF	Output mode of SD (TXD) data: Always output	
5	OFF	Terminal resistance (220 $\Omega$ ) insertion to SD (TXD): None	
6	OFF	Terminal resistance (220 $\Omega$ ) insertion to RD (RXD): None	
7	ON	Short-circuit of SDA (TXA) and RDA (RXA): Available	
8	ON	Short-circuit of SDB (TXB) and RDB (RXB): Available	
9	ON	PS (PTS) Auto control mode: Enchlad	
10	ON	NS (NIS) Auto control mode. Endoled	

# 2 External Device Selection

Select the External Device to be connected to the Display.

Welcome to GP-Pro EX	Device/PLC Number of Devi	ices/PLCs
		Device/PLC 1
	Manufacturer	Fuji Electric Co.,Ltd.
	Series	Temp. Controller MUDBUS SIU
	For	Befer to the manual of this Device/PLC
		Recent Device/PLC
	4	E
	Use System	Area Device Information
		Back (B) Communication Settings New Screen Cancel

Setup Items	Setup Description
Number of Devices/PLCs	Enter an integer from 1 to 4 to define the number of Devices/PLCs to connect to the display.
Manufacturer	Select the manufacturer of the External Device to connect. Select "Fuji Electric Co.,Ltd.".
Series	Select the External Device model (series) and the connection method. Select "Temp. Controller MODBUS SIO". In System configuration, make sure the External Device you are connecting is supported by "Temp. Controller MODBUS SIO". "" "1 System Configuration" (page 3)
Port	Select the Display port to be connected to the External Device.
Use System Area	Not available for this driver.

# 3 Communication Settings

This section provides examples of communication settings recommended by Pro-face for the Display and the External Device.

#### 3.1 Setting Example 1

- GP Pro-EX Settings
- 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 Fuji Electric Co.,Ltd. Series Temp. Controller MODBUS SIO	Port COM1					
Text Data Mode 1 Change						
Communication Settings						
SIO Type						
Speed 38400 V						
Data Length C 7 © 8						
Parity C NONE C EVEN © ODD						
Stop Bit    1						
Flow Control  O NONE O ER(DTR/CTS) O XON/XOFF						
Timeout 3 😴 (sec)						
Retry 2						
Wait To Send 10 🕂 (ms)						
In the case of RS232C, you can select the 9th pin to RI (Input)						
or VLL (5V Power Supply). If you use the Digital's RS232L Isolation Unit, please select it to VCC. Default						
Device-Specific Settings						
Allowable Number Add Device						
of Devices/PLLs 16	Add Indirect					
1 PLC1     Series=PXH Series Station No =1						
	<b>V</b>					

#### 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.

Individual Dev	rice Settings	×
PLC1		
Series	PXH Series	•
If you change the	series, please reconfirm all	address settings.
Station No.	1 🛨	
		Default
	OK ( <u>O</u> )	Cancel

#### External Device Settings

For External Device communication settings, use the SEL key, UP key, DOWN key, Digit selection key, or DISP key located in the operation area on the front of the controller. Refer to your External Device manual for details.

- 1 Press SEL key.
- 2 Press UP key or DOWN key to display [COM].
- **3** Press SEL key.
- 4 Press UP key or DOWN key to display the setting parameter.
- 5 Press SEL key to switch to setting mode.
- 6 Press UP key, DOWN key or Digit selection key to display the setting value.
- 7 Press SEL key.
- $\mathbf{8}$  Press DISP key twice.
- **9** Reboot the External Device.

#### Setting Value

Setting Parameter	Setting Value	Setup Description
SPD2	384	RS-232C communication speed
BIT2	80	RS-232C bit format

#### 3.2 Setting Example 2

- GP Pro-EX Settings
- 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 Fuji E	ectric Co.,Ltd.	Series T	emp. Controller MODBUS SIO	Port COM1
Text Data Mode	1 <u>Change</u>			
Communication Settings				
SIO Type	C RS232C	RS422/485(2wir	e) C RS422/485(4wire)	
Speed	38400	-		
Data Length	O 7	© 8		
Parity	O NONE	C EVEN	• ODD	
Stop Bit	● 1	C 2		
Flow Control	NONE	C ER(DTR/CTS)	C XON/XOFF	
Timeout	3 🕂	(sec)		
Retry	2 📫			
Wait To Send	10 📫	(ms)		
RI / VCC	© RI	C VCC		
In the case of RS or VCC (5V Powe	232C, you can sele r Supplu). If you us	ect the 9th pin to RI (Inp are the Digital's BS232C	ut)	
Isolation Unit, ple	ase select it to VCC		Default	
Device-Specific Settings				
Allowable Number of Devices/PLCs	16	Device		
No. Device Name	Setting	s		Add Indirect Device
👗 1 PLC1	Series	=PXH Series,Station No	x.=1	<b>*</b>

#### 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.

💰 Individual Dev	ice Settings	×
PLC1		
Series	PXH Series	•
If you change the	series, please reconfirm all add	lress settings.
Station No.	1 ≑	
		Default
	OK (0)	Cancel

#### External Device Settings

For External Device communication settings, use the SEL key, UP key, DOWN key, Digit selection key, or DISP key located in the operation area on the front of the controller. Refer to your External Device manual for details.

- 1 Press SEL key.
- 2 Press UP key or DOWN key to display [COM].
- **3** Press SEL key.
- 4 Press UP key or DOWN key to display the setting parameter.
- 5 Press SEL key to switch to setting mode.
- 6 Press UP key, DOWN key or Digit selection key to display the setting value.
- 7 Press SEL key.
- 8 Press DISP key twice.
- **9** Reboot the External Device.

#### Setting Value

Setting Parameter	Setting Value	Setup Description
STN4	1	RS-485 station No.
SPD4	384	RS-485 communication speed
BIT4	80	RS-485 bit format

#### 3.3 Setting Example 3

#### ■ GP Pro-EX Settings

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 Fuji Electric Co.,Ltd. Series Temp. Controller MODBUS SIO	Port COM1
Text Data Mode 1 Change	
Communication Settings	
SID Type	
Speed 9600	
Data Length C 7 © 8	
Parity	
Stop Bit	
Flow Control  O NONE O ER(DTR/CTS) O X0N/X0FF	
Timeout 3 🐳 (sec)	
Retry 2 🕂	
Wait To Send 10 👘 (ms)	
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 Number <u>Add Device</u>	
No. Device Name Settings	Add Indirect
1 PLC1 Series_PXG Series_Station No.=1	4

#### 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.

💰 Individual Dev	vice Settings	×
PLC1		
Series	PXG Series	•
If you change the	e series, please reconfirm all ad	ddress settings.
Station No.	1 📫	
		Default
	OK (0)	Cancel

#### External Device Settings

External Device communication settings are fixed as indicated below.

Setting Items	Setting Value
Communication speed	9600
Data length	8
Stop bit	1
Parity	None

#### 3.4 Setting Example 4

- GP Pro-EX Settings
- 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 Fuji Elec	etric Co.,Ltd.	Series	Temp. Controller MODBUS SIO	Port COM1
Text Data Mode	1 <u>Change</u>			
Communication Settings				
SIO Type	C RS232C	RS422/485(2)	wire) O RS422/485(4wire)	
Speed	9600	•		
Data Length	C 7	© 8		
Parity	C NONE	C EVEN	• ODD	
Stop Bit	€ 1	C 2		
Flow Control	NONE	C ER(DTR/CTS	) 🔿 XON/XOFF	
Timeout	3 🕂 (	sec)		
Retry	2 🔹			
Wait To Send	10 📫 (	ms)		
RI / VCC	© BI	C VCC		
In the case of RS23	32C, you can selec	t the 9th pin to RI (I	input)	
Isolation Unit, pleas	e select it to VCC.	, and brighters (1925)	Default	
Device-Specific Settings				
Allowable Number	Add I	Device		
No. Device Name	Settinas			Add Indirect
🔏 1 PLC1	Series=	PXG Series,Station	No.=1	<b>•</b>

#### 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.

💰 Individual Dev	ice Settings	×
PLC1		
Series	PXG Series	•
If you change the	series, please reconfirm all a	ddress settings.
Station No.	1 📫	
		Default
	OK ( <u>O</u> )	Cancel

#### External Device Settings

For External Device communication settings, use the SEL key, UP key, DOWN key, or USER key, located in the operation area on the front of the controller.

Refer to your External Device manual for details.

- **1** Press and hold SEL key to switch to Monitor Mode.
- **2** Press and hold SEL key to switch to Setup Mode.
- **3** Press UP key or DOWN key to display [CoM Ch 9].
- 4 Press and hold SEL key.
- **5** Press UP key or DOWN key to display setting parameter.
- 6 Press SEL key.
- 7 Press UP key or DOWN key to display setting value.
- 8 Press SEL key.
- 9 Press USER key.
- 10 Reboot the External Device.

#### ♦ Setting Value

Setting Parameter	Setting Value	Setup Description
STno	1	ST No. setting
СоМ	96od	RS-485 Baud rate/Parity settings
SCC	rW	RS-485 Communication permissions

#### 3.5 Setting Example 5

■ GP Pro-EX Settings

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 Fuji El	ectric Co.,Ltd.	Series	Temp. Controller MODBUS SIO	Port COM1
Text Data Mode	1 <u>Change</u>			
Communication Settings				
SIO Type	C RS232C	RS422/485(2w)	ire) C RS422/485(4wire)	
Speed	9600	•		
Data Length	O 7	© 8		
Parity	O NONE	C EVEN	• ODD	
Stop Bit	● 1	C 2		
Flow Control	NONE	C ER(DTR/CTS)	C XON/XOFF	
Timeout	3 +	(sec)		
Retry	2 📫			
Wait To Send	10 📫	(ms)		
RI / VCC	© BI	C VCC		
In the case of RS or VCC (5V Powe	232C, you can sele r Supple). If you us	ect the 9th pin to RI (In se the Digital's BS232I	iput)	
Isolation Unit, ple	ase select it to VCC		Default	
Device-Specific Settings				
Allowable Number of Devices/PLCs	16	Device		
No. Device Name	Setting	s		Add Indirect Device
👗 1 PLC1	Series	=PXR Series(AutoFIX),	Station No.=1	4

#### 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.

💰 Individual Dev	ce Settings 🛛 🗙
PLC1	
Series	PXR Series(AutoFIX)
lf you change t	e series, please reconfirm all address settings.
Station No.	1
	Default
	OK ( <u>0</u> ) Cancel

#### External Device Settings

For External Device communication settings, use the SEL key, UP key, or DOWN key located in the operation area on the front of the controller.

Refer to your External Device manual for details.

- **1** Press and hold SEL key to display the 3rd block parameter.
- 2 Press UP key or DOWN key to display setting parameter.
- 3 Press SEL key.
- 4 Press UP key or DOWN key to display setting value.
- 5 Press SEL key.
- $6\,$  Press and hold SEL key.

#### Setting Value

Setting Parameter	Setting Value	Setup Description
STno	1	Station No.
СоМ	0	Parity setting
PCoL	1	Communication protocol

#### 3.6 Setting Example 6

- GP Pro-EX Settings
- 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 Fuji Ele	tric Co.,Ltd.	Series Temp. Controller M	ODBUS SIO	Port COM1
Text Data Mode	1 <u>Change</u>			
Communication Settings				
SIO Type	C RS232C C RS4	22/485(2wire) 🔿 RS42	22/485(4wire)	
Speed	9600 💌			
Data Length	C 7 © 8			
Parity	C NONE C EVE	N © ODD		
Stop Bit				
Flow Control	NONE     O ER(I	OTR/CTS) C XON/XOF		
Timeout	3 📫 (sec)			
Retry	2 +			
Wait To Send	10 📫 (ms)			
RI / VCC	C RI C VCC	;		
In the case of RS2 or VCC (5V Power Isolation Unit, plea	(2C, you can select the 9th p Supply). If you use the Digit e select it to VCC.	oin to RI (Input) al's RS232C	Default	
Device-Specific Settings				
Allowable Number	Add Device			
No. Device Name	Settinas			Add Indirect
👗 1 PLC1	Series=PXR Serie	s(NaAutoFIX),Station No.=1		•

#### 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.

💣 Individual Devic	e Settings	×
PLC1		
Series	PXR Series(NoAutoFIX)	T
If you change the	e series, please reconfirm all add	ress settings.
Station No.	1	
		Default
	OK ( <u>D</u> )	Cancel

#### External Device Settings

For External Device communication settings, use the SEL key, UP key, or DOWN key located in the operation area on the front of the controller.

Refer to your External Device manual for details.

- **1** Press and hold SEL key to display the 3rd block parameter.
- 2 Press UP key or DOWN key to display setting parameter.
- **3** Press SEL key.
- 4 Press UP key or DOWN key to display setting value.
- 5 Press SEL key.
- $6\,$  Press and hold SEL key.

#### Setting Value

Setting Parameter	Setting Value	Setup Description
STno	1	Station No.
СоМ	0	Parity setting
PCoL	1	Communication protocol

#### 3.7 Setting Example 7

- GP Pro-EX Settings
- 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 Fuji Electric Co.,Ltd. Series Temp. Controller MODBUS SIO	Port COM1
Text Data Mode 1 Change	
Communication Settings	
SIO Type • RS232C	
Speed 19200 💌	
Data Length C 7 💿 8	
Parity    NONE C EVEN C ODD	
Stop Bit 💿 1 💿 2	
Flow Control   NONE C ER(DTR/CTS) C X0N/X0FF	
Timeout 3 👘 (sec)	
Retry 2	
Wait To Send 10 😴 (ms)	
RI / VCC  RI  VCC	
In the case of RS232C, you can select the 9th pin to RI (Input)	
Isolation Unit, please select it to VCC. Default	
Device-Specific Settings	
Allowable Number Add Device	
No Device Name Settings	Add Indirect
1 PLC1 Series=PUM Series,Station No.=1	4

#### 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.

💰 Individual Dev	ice Settings	×
PLC1		
Series	PUM Series	•
If you change the	series, please reconfirm all ac	ddress settings.
Station No.	1 📫	
		Default
	OK ( <u>O</u> )	Cancel

#### External Device Settings

For External Device communication settings, use the Station No. Configuration switch on the front of the controller.

Refer to your External Device manual for details.

1 Set "0" to Station No. Configuration switch.

NOTE	•	The Station Number is generated by adding 1 (one) to the value set by the Station No.
		Configuration switch.

Other communication settings are fixed as below.

Setting Items	Setting Value
Communication speed	19200
Data length	8
Stop bit	1
Parity	None

#### 3.8 Setting Example 8

- GP Pro-EX Settings
- 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 Fuji E	ectric Co.,Ltd.	Series	Temp. Controller MODBUS SIO	Port COM1
Text Data Mode	1 <u>Change</u>			
Communication Settings				
SIO Type	C RS232C	• RS422/485(2)	wire) C RS422/485(4wire)	
Speed	19200	-		
Data Length	C 7	© 8		
Parity	NONE	C EVEN	C ODD	
Stop Bit	© 1	C 2		
Flow Control	NONE	C ER(DTR/CTS	) C XON/XOFF	
Timeout	3 🔹	(sec)		
Retry	2 +			
Wait To Send	10 📫	(ms)		
RI / VCC	© RI	C VCC		
In the case of RS	232C, you can sele	ect the 9th pin to RI (	Input)	
Isolation Unit, ple	ase select it to VCC	ie the Digitalis hozo	Default	1
Device-Specific Settings				
Allowable Number	Add	Device		
OF Devices/PELs	lb Setting			Add Indirect
X 1 PLC1	Series	。 =PLIM Series Station	No =1	
	HOLE   FORT			L.

#### 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.

💣 Individual De	vice Settings	×
PLC1		
Series	PUM Series	•
If you change th	e series, please reconfirm all ado	dress settings.
Station No.	1 📫	
		Default
	OK ( <u>O</u> )	Cancel

#### External Device Settings

For External Device communication settings, use the Station No. Configuration switch on the front of the controller and Parameter Loader software (PUM Loader).

Refer to your External Device manual for details.

1 Set "0" to Station No. Configuration switch.

NOTE	• The Station Number is generated by adding 1 (one) to the value set by the Station No.	
	Configuration switch.	

- **2** Start up the Parameter Loader software.
- **3** Select [Control/Event/Analog Module] in the [Module type selection] dialog box.
- 4 Click [OK].
- 5 Select the any mode in the [Startup mode] dialog box.
- 6 Click [OK].
- 7 Select [Control module]-[Parameter]-[Communication] in the tree view of the main window.
- $\mathbf{8}$  Click the setting item to display the selection dialog box of the setting value.
- 9 Select the setting value.
- 10 Click [OK].
- **11** Transfer the communication settings to External Device.
  - Setting Value

Setting Items	Setting Value
RS-485 Parity setting	None
RS-485 Communication speed	19.2Kbps
RS-485 Communication permission	1
RS-485 Response interval time	1
Enhanced comm. module (PUMC) connection	0

# 4 Setup Items

Set up the Display's communication settings in GP Pro-EX or in the Display's off-line mode.

The setting of each parameter must match that of the External Device.

"3 Communication Settings" (page 8)

#### 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 Fuji Ele	ctric Co.,Ltd. Series Temp. Controller MODBUS SIO	Port COM1
Text Data Mode	1 Change	
Communication Settings		
SIO Type	RS232C     RS422/485(2wire)     RS422/485(4wire)	
Speed	9600	
Data Length	C 7 © 8	
Parity	NONE C EVEN C ODD	
Stop Bit	© 1 C 2	
Flow Control	NONE     C ER(DTR/CTS)     C XON/XOFF	
Timeout	3 • (sec)	
Retry	2 *	
Wait To Send	10 (ms)	
RI / VCC		
In the case of RS2 or VCC (5V Power	32C, you can select the 9th pin to RI (Input) Supply). If you use the Digital's RS232C	
Isolation Unit, pleas	se select it to VCC. Default	
Device-Specific Settings		
Allowable Number of Devices/PLCs	Add Device 16	
No. Device Name	Settings	Add Indirect Device
👗 1 PLC1	Series=PXG Series,Station No.=1	<b>÷</b>

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device.  MPORTANT TIn the communication setting, confirm the serial interface specifications of the Display and set [SIO Type] correctly. If you select an SIO type the serial interface does not support, we cannot guarantee the operation. Please refer to the manual of the Display for more detail on the serial interface specifications.
Speed	Select communication speed between the External Device and the Display.
Data Length	Display data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.

Continues to the next page.

Setup Items	Setup Description
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.
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

NOTE

• Refer to the GP-Pro EX Reference Manual for Indirect Device.

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.



Setup Items	Setup Description	
Series	Select the series of the External Device.	
Station No.	Use an integer from 1 to 255 to enter the Station number of the External Device.	

#### 4.2 Setup Items in Off-line Mode

• Refer to the Maintenance/Troubleshooting manual for information on how to enter off-line mode or about the operation.

- Cf. Maintenance/Troubleshooting Manual "Off-line Mode"
- The number of the setup items to be displayed for 1 page in the off-line 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 Equipment Settings] in off-line mode. Touch the External Device you want to set from the displayed list.

Comm.	Device	Option		
Temp. Controlle	r MODBUS SIO		[COM1]	Page 1/1
	SIO Type Speed Data Length Parity Stop Bit Flow Control Timeout(s) Retry Wait To Send(ms)	RS422/48  9600 8 ● 1  NONE	5(2wire) EVEN 2 3 2 V 10 V A	] ODD ]
	Exit		Back	2008/12/22 15:12:18

Setup Items	Setup Description		
SIO Type	Select the SIO type to communicate with the External Device.  MPORTANT In the communication setting, confirm the serial interface specifications of the Display and set [SIO Type] correctly. If you select an SIO type the serial interface does not support, we cannot guarantee the operation. Please refer to the manual of the Display for more detail on the serial interface specifications.		
Speed	Select the communication speed between the External Device and the Display.		
Data Length	Display data length.		
Parity	Select how to check parity.		
Stop Bit	Select stop bit length.		

Continues to the next page.

Setup Items	Setup Description	
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.	

#### 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].

Comm.	Device	Option		
Temp. Controlle	r MODBUS SIO		[COM1]	Page 1/1
Devic	e/PLC Name PLC	01		-
	Series Station No.	PXR Serie	s(AutoFIX) 1_▼	
	Fuit		Back	2008/12/22
8 V	LNIU	8 N	DUCK	15:12:22

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 [PLC1])	
Series	Display the series of the External Device.	
Station No.	Use an integer from 1 to 255 to enter the Station number of the External Device.	

#### 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		
Temp. Controlle	r MODBUS SIO 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] C VCC can select · VCC(5V we Digital's use select	Page 1/1
	Exit		Back	2008/12/22 18:12:55

Setup Items	Setup Description		
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.		

NOTE

• GP-4100 series do not have the [Option] setting in the off-line mode.

# 5 Cable Diagrams

The following cable diagrams may be different from cable diagrams recommended by Fuji Electric Co.,Ltd. Please be assured there is no operational problem in applying the cable diagrams shown in this manual.

- The FG pin of the External Device body must be D-class grounded. Refer to your External Device manual for more details.
- The SG and FG are connected inside the Display. When connecting the External Device to the SG, design your system to avoid short-circuit loops.
- Connect an isolation unit if the communication is not stable due to noise or other factors.

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000 <sup>*1</sup> (COM1) ST (COM1) LT (COM1) IPC <sup>*2</sup> PC/AT	1A	Loader connecting cable by Fuji Electric Systems Co., Ltd. <sup>*3</sup>	
GP-4105 (COM1)	1B	User-created cable + Loader connecting cable by Fuji Electric Systems Co., Ltd. <sup>*3</sup>	

#### Cable Diagram 1

\*1 All GP4000 models except GP-4100 Series, GP-4\*01TM and GP-4203T

\*3 The loader connecting cable differs, depending on the series.

Series	Loader connecting cable type
PXH	ZZPPXH1*TK4H4563
PUM	PUMZ*L01

1A)



1B)



#### Cable Diagram 2

Display (Connection Port)		Cable	Notes
GP3000 <sup>*1</sup> (COM1) AGP-3302B (COM2) ST <sup>*2</sup> (COM2) LT (COM1)	2A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	2B	User-created cable	
GP3000 <sup>*3</sup> (COM2)	2C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	2D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	Cable length:
IPC <sup>*4</sup>	2E 2F	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable User-created cable	500m or less
GP-4106 (COM1)	2G	User-created cable	
GP-4107 (COM1) GP-4*03T <sup>*5</sup> (COM2) GP-4203T (COM1)	2H	User-created cable	
GP4000 <sup>*6</sup> (COM2) GP-4201T (COM1)	21	RS-422 Terminal Block Conversion Adapter by Pro-face PFXZCBADTM1 <sup>*7</sup> + User-created cable	
	2B	User-created cable	

\*1 All GP3000 models except AGP-3302B

\*2 All ST models except AST-3211A and AST-3302B

\*3 All GP3000 models except GP-3200 series and AGP-3302B

\*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used. <sup>(G)</sup> "■ IPC COM Port" (page 5)

\*5 Except GP-4203T

\*6 All GP4000 models except GP-4100 Series, GP-4\*01TM, GP-4201T and GP-4\*03T

\*7 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 2A.

IMPORTANT • Implement Type D installment to the shiel	d connected to the FG.
---	------------------------

#### 2A)

• 1:1 Connection



• 1:n Connection



#### 2B)

• 1:1 Connection



• 1:n Connection



#### 2C)

• 1:1 Connection



• 1:n Connection



#### 2D)

• 1:1 Connection



• 1:n Connection



#### 2E)

• 1:1 Connection



• 1:n Connection



#### 2F)

• 1:1 Connection



• 1:n Connection



#### 2G)

• 1:1 Connection



1:n Connection



\*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

DIP Switch No.	Set Value
1	OFF
2	OFF
3	ON
4	ON

#### 2H)

• 1:1 Connection



• 1:n Connection



# IMPORTANT • The 5V output (Pin #6) on the Display is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices.



#### 2I)

• 1:1 Connection



• 1:n Connection



#### Cable Diagram 3

Display (Connection Port)		Cable	Notes
GP3000 <sup>*1</sup> (COM1) AGP-3302B (COM2) ST <sup>*2</sup> (COM2) LT (COM1)	3A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	3B	User-created cable	
GP3000 <sup>*3</sup> (COM2)	3C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	3D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	Cable length:
IPC <sup>*4</sup> COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable		COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	500m or less
3F User-created cable			
GP-4106 (COM1) GP-4107 (COM1) GP-4*03T <sup>*5</sup> (COM2) GP-4203T (COM1)	3G     User-created cable       3H     User-created cable		
GP4000 <sup>*6</sup> (COM2) GP-4201T (COM1)	3I 3R	RS-422 Terminal Block Conversion Adapter by Pro-face PFXZCBADTM1 <sup>*7</sup> + User-created cable	
	JD	User-created cable	

\*1 All GP3000 models except AGP-3302B

\*2 All ST models except AST-3211A and AST-3302B

\*3 All GP3000 models except GP-3200 series and AGP-3302B

\*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used. <sup>(G)</sup> "■ IPC COM Port" (page 5)

\*5 Except GP-4203T

\*6 All GP4000 models except GP-4100 Series, GP-4\*01TM, GP-4201T and GP-4\*03T

\*7 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 3A.

```
IMPORTANT • Terminal number used for communication differs depending on the External Device series.
Terminal numbers corresponding to each series are shown below. SG terminals are
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not available for these series. Apply masking using insulation tape, etc. Implement Type D installment to the shield connected to the FG.

Series	+	-
PXG4	7	8
PXG5/PXG9	1	2
PXR3	15	14
PXR4/PXR7	7	8
PXR5/PXR9	1	2

#### 3A)

• 1:1 Connection



• 1:n Connection



#### 3B)

• 1:1 Connection



• 1:n Connection



#### 3C)

• 1:1 Connection



• 1:n Connection



#### 3D)

• 1:1 Connection



• 1:n Connection



#### 3E)

• 1:1 Connection



• 1:n Connection



#### 3F)

• 1:1 Connection



• 1:n Connection



#### 3G)

• 1:1 Connection



1:n Connection



\*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

DIP Switch No.	Set Value
1	OFF
2	OFF
3	ON
4	ON

#### 3H)

• 1:1 Connection



1:n Connection



#### IMPORTANT

The 5V output (Pin #6) on the Display is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices.

```
NOTE
```

• In COM on the GP-4107, the SG and FG terminals are isolated.

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#### 3I)

• 1:1 Connection



#### • 1:n Connection



#### Cable Diagram 4

Display (Connection Port)		Cable	Notes
GP3000 <sup>*1</sup> (COM1) AGP-3302B (COM2) ST <sup>*2</sup> (COM2) LT (COM1)	4A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	4B	User-created cable	
GP3000 <sup>*3</sup> (COM2)	4C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	4D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	Cable length:
IPC <sup>*4</sup> 4E COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable 4F User-created cable		500m or less	
GP-4106 (COM1)	P-4106 (COM1) 4G User-created cable		
GP-4107 (COM1) GP-4*03T <sup>*5</sup> (COM2) GP-4203T (COM1)	4H User-created cable		
GP4000 <sup>*6</sup> (COM2) GP-4201T (COM1)	41	RS-422 Terminal Block Conversion Adapter by Pro-face PFXZCBADTM1 <sup>*7</sup> + User-created cable	
	4B	User-created cable	

\*1 All GP3000 models except AGP-3302B

\*2 All ST models except AST-3211A and AST-3302B

\*3 All GP3000 models except GP-3200 series and AGP-3302B

\*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used. <sup>(G)</sup> "■ IPC COM Port" (page 5)

\*5 Except GP-4203T

\*6 All GP4000 models except GP-4100 Series, GP-4\*01TM, GP-4201T and GP-4\*03T

\*7 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 4A.

#### 4A)

• 1:1 Connection



#### 4B)

• 1:1 Connection



1:n Connection



NOTE

Connect External Devices using side connectors.

#### 4C)

• 1:1 Connection



• 1:n Connection



NOTE

Connect External Devices using side connectors.

#### 4D)

• 1:1 Connection



• 1:n Connection



NOTE

Connect External Devices using side connectors.

#### 4E)

• 1:1 Connection



#### 4F)

• 1:1 Connection



• 1:n Connection



NOTE

• Connect External Devices using side connectors.

4G)

• 1:1 Connection



• 1:n Connection



NOTE

• Connect External Devices using side connectors.

\*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

DIP Switch No.	Set Value
1	OFF
2	OFF
3	ON
4	ON

#### 4H)

• 1:1 Connection



• 1:n Connection



IMPORTANT	The 5V output (Pin #6) on the Display is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices.
NOTE	Connect External Devices using side connectors. In COM on the GP-4107, the SG and FG terminals are isolated.

#### 4I)

• 1:1 Connection



# 6 Supported Devices

The following table shows the range of supported device addresses. 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.

Input address of external device in the dialog below.



- 1. Device Set Device.
- 2. Reference The list of available identifiers is displayed. Click the identifier to use and press "Select," and the address is entered.
- 3. Address Set Address. The combination of identifier and address differs depending on the external device.

The following description explains the memory maps for each parameter.

<When using Bit Data>

Relative Address	Coil No. <sup>*1</sup>	Туре	Memory Contents	Read-out Data
0000H	10001	Bit	Alarm1 ON/OFF	0: Alarm1 OFF, 1: Alarm1 ON
0001H	10002		(Reserved)	
0002H	10003		(Reserved)	
0003H	10004		(Reserved)	
0004H	10005	Bit	Alarm2 ON/OFF	0: Alarm2 OFF, 1: Alarm2 ON
0005H	10006		(Reserved)	
:	:	:	:	:

Bit Data (Read Only) : Function [02H]

\*1 Coil No. is the address that is assigned by the Display.

Example: For the parameter "Alarm1 ON/OFF" of Coil No. 10001, the Display's designated address is as follows. Use the first digit of the Coil No. (00001 -, 10001 -) to designate the device.

#### <u>1 0001</u>

— Device (The first digit of the Coil No.)

Example: For the parameter "front surface control SV data" of Register No. 41003, the Display's designated address is as follows. Use the first two digits of the Register No.s (30001 -, 40001 -, 31001 - and 41001 -) to designate the device.

<u>41 003</u> Address (The last three digits of the Coil No.) Device (The first two digits of the Coil No.)

• The External Device's parameter data, when data transfer is performed, will have no decimal places. Thus, in the Display, processing must be performed to correct the data. For example, if a numeric display is used that includes decimal places, the "No. of Decimals" of the "Display" settings must be used. Also, when writing data to a External Device, it is necessary to write decimal values as integers.

Example: Register No. 41025's "Output 1 Lower Limit" External Device Display/Setting Value : 3.00% Display value/setting : 3000

Please refer to your External Device manual for details (with/without a decimal point) about data item setting value ranges.

#### 6.1 PXH series

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Read Only Word Data	-	30257 - 31407	<b>H</b> ID	<mark>ві <b>t31</b> *1*2</mark>
Word Data	40001.00 - 45035.31	40001 - 45035		<u>ві</u> <b>t31</b> *2*3*4

\*1 Write disabled.

\*2 This device is 32 bits in length. Only odd addresses can be assigned.

\*3 When you write to the bit address, the Display reads the entire word, sets the defined bit, then returns the new word value to the External Device. If the ladder program writes data to this word address during the bit write process, the resulting data may be incorrect.

\*4 43153 is an address to order writing in the nonvolatile memory (FIX processing). Writing in the nonvolatile memory is performed by entering 1 (one) to the writing value.

NOTE	• You can only set the Read Area Size for the system area available to use in the External
	Device. Please refer to the GP Pro-EX Reference Manual for Read Area Size.
	Cf. GP Pro-EX Reference Manual "LS Area (Direct Access Method Area)"
	• Refer to the precautions on manual notation for icons in the table.

"Manual Symbols and Terminology"

#### 6.2 PXG series

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Read Only Bit Data	10001 - 10013	-		*1
Read Only Word Data (Internal)	-	30001 - 30062		<u>ві</u> t <b>15</b> *1
Read Only Word Data (Engineering Unit)	-	31001 - 31062	ΉΊЦ	<sub>ві т</sub> 15] *1
Word Data (Internal)	40002.00 - 40628.15	40002 - 40628		<u>ві</u> t <b>15</b> *2
Word Data (Engineering Unit)	41002.00 - 41628.15	41002 - 41628		<u>ві</u> t <b>15</b> *2

\*1 Write disabled.

\*2 When you write to the bit address, the Display reads the entire word, sets the defined bit, then returns the new word value to the External Device. If the ladder program writes data to this word address during the bit write process, the resulting data may be incorrect.

#### NOTE

• You can only set the Read Area Size for the system area available to use in the External Device. Please refer to the GP Pro-EX Reference Manual for Read Area Size.

Cf. GP Pro-EX Reference Manual "LS Area (Direct Access Method Area)"Refer to the precautions on manual notation for icons in the table.

"Manual Symbols and Terminology"

#### 6.3 PXR (AutoFIX) / PXR (NoAutoFIX) series

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Bit Data	00001	-		*1
Read Only Bit Data	10001 - 10016	10001		÷16+ <b>1</b> *2
Read Only Word Data (Internal)	-	30001 - 30037		<u>ві</u> t <b>15</b> *2
Read Only Word Data (Engineering Unit)	-	31001 - 31037		віt <b>15</b> ] *2
Word Data (Internal)	40001.00 - 40120.15	40001 - 40120		<u>ві</u> t <b>15</b> *1*3
Word Data (Engineering Unit)	41001.00 - 41120.15	41001 - 41120		<u>ві</u> t <b>15</b> *1*3

IC.

\*1 00001, 40001, and 41001 are addresses to order writing in the nonvolatile memory (FIX processing). Writing in the nonvolatile memory is performed by entering 1 (one) to the writing value.

#### \*2 Write disabled.

NOTE

\*3 When you write to the bit address, the Display reads the entire word, sets the defined bit, then returns the new word value to the External Device. If the ladder program writes data to this word address during the bit write process, the resulting data may be incorrect.

• You can only set the Read Area Size for the system area available to use in the External Device. Please refer to the GP Pro-EX Reference Manual for Read Area Size.

Cf. GP Pro-EX Reference Manual "LS Area (Direct Access Method Area)"

• Refer to the precautions on manual notation for icons in the table.

"Manual Symbols and Terminology"

#### 6.4 PUM series (PUMA / B)

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Read Only Word Data	-	30001 - 34061	TH / D	<u>ві</u> t <b>15</b> 1 *1
Word Data	40001.00 - 45032.15	40001 - 45032		<u>ві</u> т <b>15</b> *2

\*1 Write disabled.

\*2 When you write to the bit address, the Display reads the entire word, sets the defined bit, then returns the new word value to the External Device. If the ladder program writes data to this word address during the bit write process, the resulting data may be incorrect.

NOTE	• You can only set the Read Area Size for the system area available to use in the External
	Device. Please refer to the GP Pro-EX Reference Manual for Read Area Size.
	Cf. GP Pro-EX Reference Manual "LS Area (Direct Access Method Area)"

• Refer to the precautions on manual notation for icons in the table.

"Manual Symbols and Terminology"

#### 6.5 PUM series (PUME)

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Read Only Word Data	-	30064 - 31003	пнль	<u>ві</u> t <b>15</b> ] *1
Word Data	40021.00 - 41016.15	40021 - 41016		<u>ві t</u> 15 *2

\*1 Write disabled.

\*2 When you write to the bit address, the Display reads the entire word, sets the defined bit, then returns the new word value to the External Device. If the ladder program writes data to this word address during the bit write process, the resulting data may be incorrect.

NOTE

• You can only set the Read Area Size for the system area available to use in the External Device. Please refer to the GP Pro-EX Reference Manual for Read Area Size.

Cf. GP Pro-EX Reference Manual "LS Area (Direct Access Method Area)"Refer to the precautions on manual notation for icons in the table.

<sup>©</sup> "Manual Symbols and Terminology"

#### 6.6 PUM series (PUMV / N / T)

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Read Only Word Data	-	30001 - 34061	.rH/I)	<u>ві</u> t <b>15</b> *1
Word Data	40017.00 - 45032.15	40017 - 45032		<u>ві</u> t <b>15</b> *2

\*1 Write disabled.

\*2 When you write to the bit address, the Display reads the entire word, sets the defined bit, then returns the new word value to the External Device. If the ladder program writes data to this word address during the bit write process, the resulting data may be incorrect.

NUTE
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• You can only set the Read Area Size for the system area available to use in the External Device. Please refer to the GP Pro-EX Reference Manual for Read Area Size.

Cf. GP Pro-EX Reference Manual "LS Area (Direct Access Method Area)"Refer to the precautions on manual notation for icons in the table.

<sup>The manual Symbols and Terminology"</sup>

# 7 Device Code and Address Code

Use device codes and address codes when you set "Device Type & Address" for the address type of the data display or other devices.

#### 7.1 PXH series

Device	Device Name	Device Code (HEX)	Address Code
Read Only Word Data	3	0001	Value of (word address -1) divided by 2
Word Data	4	0000	Value of (word address -1) divided by 2

#### 7.2 PXG series

Device	Device Name	Device Code (HEX)	Address Code
Read Only Word Data (Internal)	30	0001	Value of (word address - 1)
Read Only Word Data (Engineering Unit)	31	0003	Value of (word address - 1)
Word Data (Internal)	40	0000	Value of (word address - 1)
Word Data (Engineering Unit)	41	0002	Value of (word address - 1)

#### 7.3 PXR (AutoFIX) / PXR (NoAutoFIX) series

Device	Device Name	Device Code (HEX)	Address Code
Read Only Word Data (Internal)	30	0001	Value of (word address - 1)
Read Only Word Data (Engineering Unit)	31	0003	Value of (word address - 1)
Word Data (Internal)	40	0000	Value of (word address - 1)
Word Data (Engineering Unit)	41	0002	Value of (word address - 1)

#### 7.4 PUM series

Device	Device Name	Device Code (HEX)	Address Code
Read Only Word Data	3	0001	Value of (word address - 1)
Word Data	4	0000	Value of (word address - 1)

# 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 number
Device Name	Name of the External Device where an error has occurred. Device/PLC name is the title of the External Device set with GP Pro-EX. (Initial value [PLC1])
Error Message	Displays messages related to an error that has occurred.
Error Occurrence Area	<ul> <li>Displays the IP address or device address of the External Device where an error has occurred, or error codes received from the External Device.</li> <li>NOTE</li> <li>IP address is displayed as "IP address (Decimal): MAC address (Hex)".</li> <li>Device address is displayed as "Address: Device address".</li> <li>Received error codes are displayed as "Decimal [Hex]".</li> </ul>

#### 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 Manual" for details on the
	error messages common to the driver.

#### Error Codes Unique to External Device

Error Code	Description
0x02	Faulty address for coil or resistor
0x06	Busy condition