

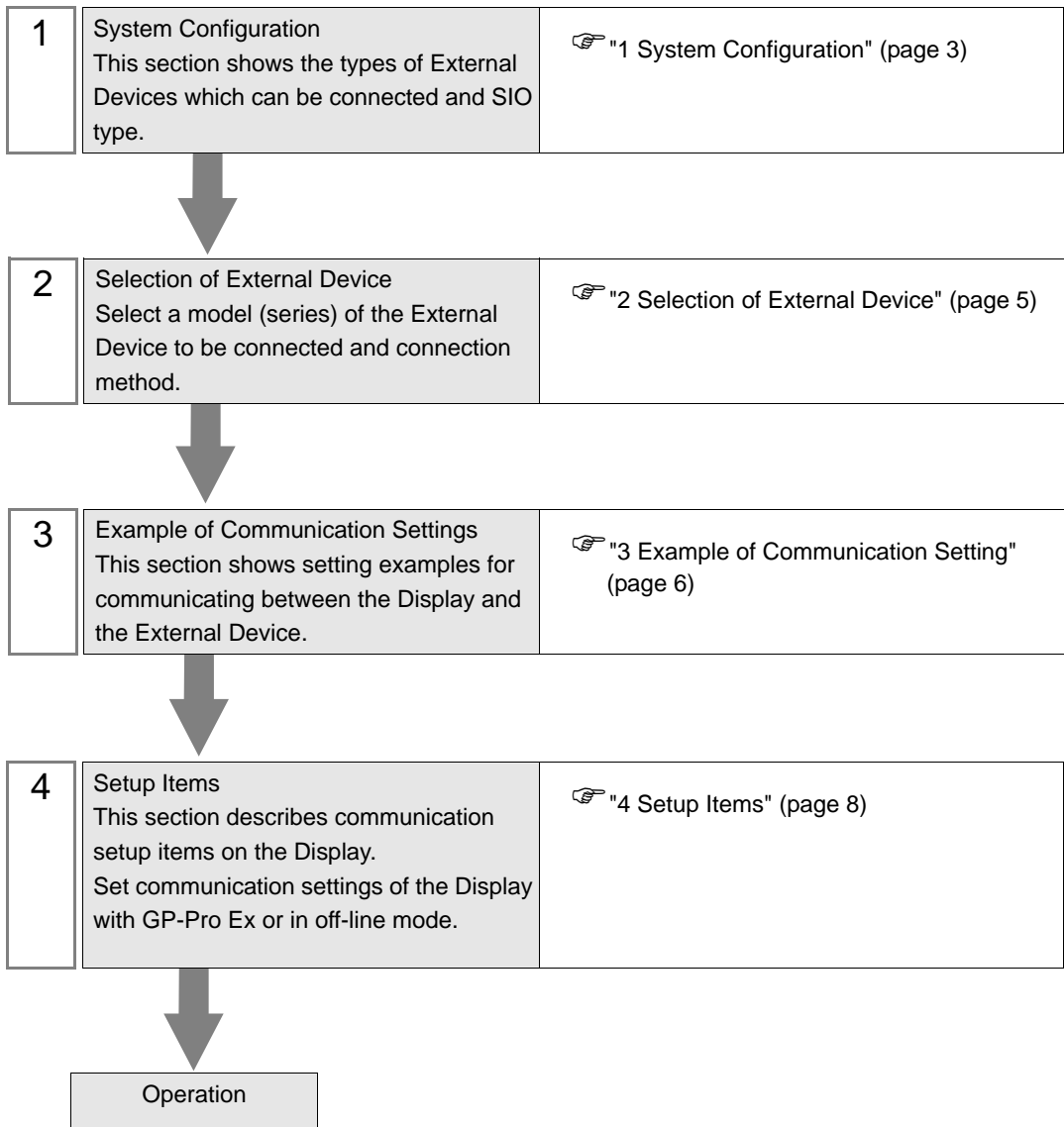
# KOSTAC/DL Series MODBUS TCP Driver

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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

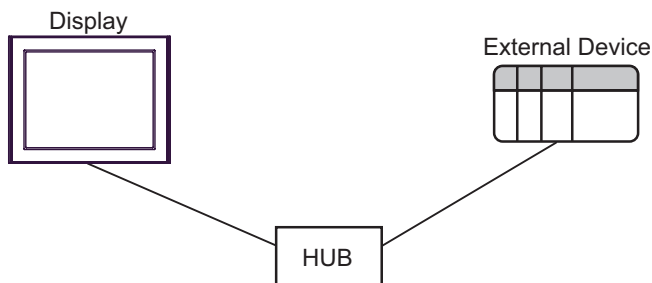
The system configuration in the case when the External Device of KOYO ELECTRONICS CO., LTD. and the Display are connected is shown.

Series	CPU	Link I/F <sup>*1</sup>	SIO Type	Setting Example
Direct Logic05	D0-05AA, D0-05AD, D0-05AR, D0-05DA, D0-05DD, D0-05DD-D, D0-05DR, D0-05DR-D	H0-ECOM100	Ethernet (TCP)	"Setting Example 1" (page 6)
Direct Logic06	D0-06DD1, D0-06DD1-D, D0-06DD2, D0-06DD2-D, D0-06DR, D0-06DR-D, D0-06DA, D0-06AR, D0-06AA	H0-ECOM100		
DL205	D2-240, D2-250-1, D2-260	H2-ECOM100		
DL405	D4-430, D4-440, D4-450	H4-ECOM100		
KOSTAC SU	SU-5E, SU-6B, SU-5M, SU-6M	H4-ECOM100		

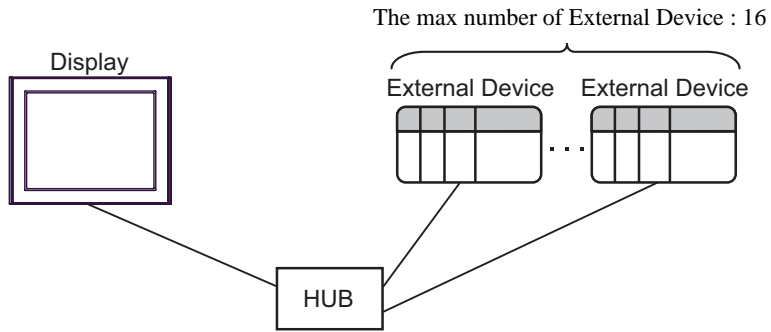
\*1 Link I/F of Firmware version 4.0.1299 or later is required for communication with External Device. Firmware version can be checked with PLC programming tool software (DirectSOFT). Please refer to the manual of External Device for more details.

## ■ Connection Configuration

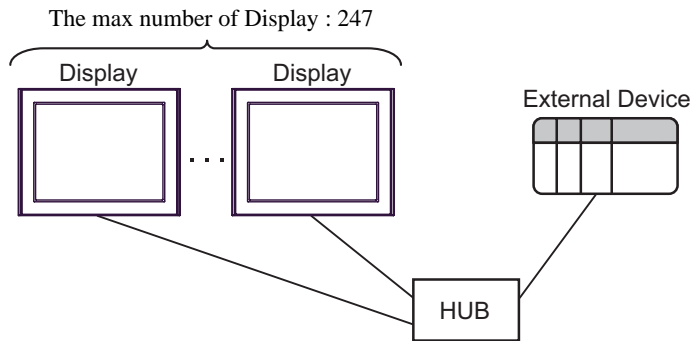
- 1:1 Connection



- 1:n Connection



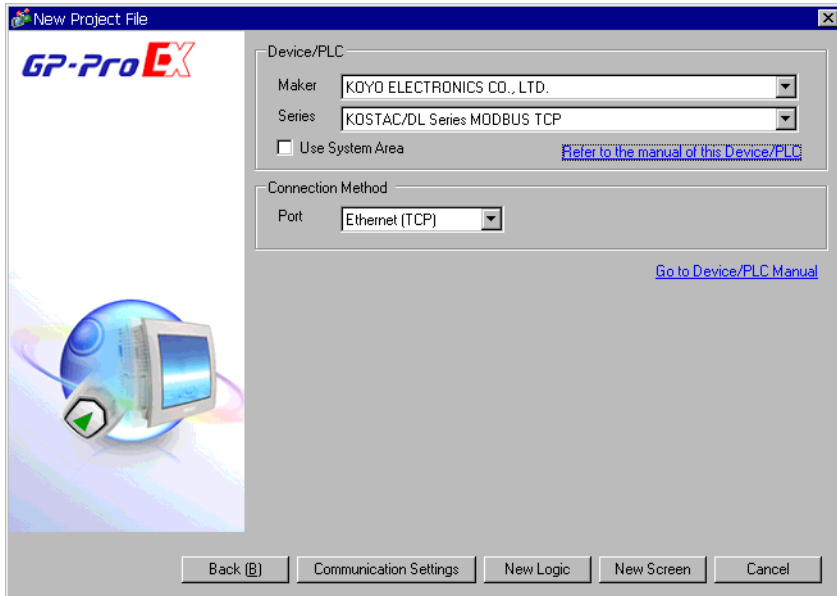
- n:1 Connection

**NOTE**

- A maximum of 247 Displays can be connected to a HUB. However, the greater the number of Displays connected, the more the communication load increases.

## 2 Selection of External Device

Select the External Device to be connected to the Display.



Setup Items	Setup Description
Maker	Select the maker of the External Device to be connected. Select "KOYO ELECTRONICS CO., LTD.".
Series	Select a model (series) of the External Device to be connected and connection method. Select "KOSTAC/DL Series MODBUS TCP". Check the External Device which can be connected in "KOSTAC/DL Series MODBUS TCP" 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 (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 " 5.17.6 Setting Guide of [System Setting Window]■[Main Unit Settings] Settings Guide◆System Area Setting" Cf. Maintenance/Troubleshooting "2.15.1 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

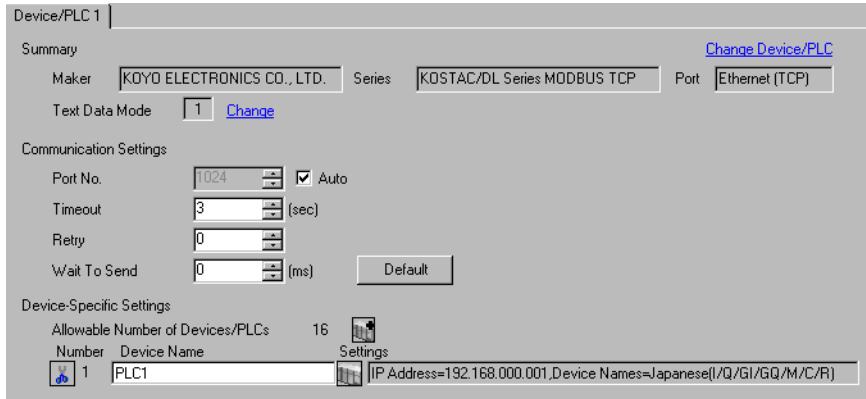
Examples of communication settings of the Display and the External Device, recommended by Pro-face, are shown.

#### 3.1 Setting Example 1


##### ■ Settings of GP-Pro EX

##### ◆ Communication Settings

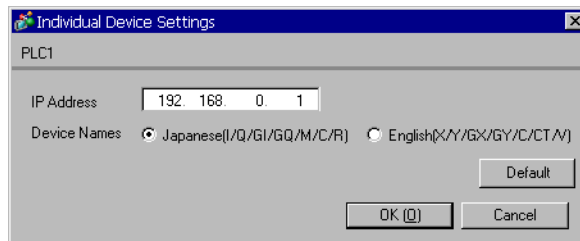
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



##### ◆ Device 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.



## ■ Settings of External Device

Communication setting is configured with the setting tool (NetEdit3).

Please refer to the manual of External Device for more details.

### 1 Start up the setting tool.

In the startup screen, the External Devices on network are all displayed.

#### **NOTE**

- If there is no External Device display, click [Scan Network] to refresh the network status.

### 2 Select an External Device from the list to configure the communication setting.

### 3 Right click the selected External Device and select [General...] from the displayed menu. [General Settings] dialog box is displayed.

### 4 Select [Use the following IP settings] and input as follows.

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0
Gateway	0.0.0.0

### 5 Click [OK].

#### **NOTE**

- When communication between the Display and External Device has not occurred for a set period of time, the External Device will shut down the connection. If communication is made after the shut down, the error message, "TCP connection open error." appears on the Display, but communication will immediately resume. Time out for shutting down the connection can be set at [Slave Timeout] (1410065 seconds max.) of the [ECOM advanced settings] dialog box. The [ECOM advanced settings] dialog box is displayed by clicking [Advanced] on [ECOM Settings] tab.
- When using a gateway, set the IP address as [Gateway].

## 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 the External Device.

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

### NOTE

- Set the Display's IP address in off-line mode.

Cf. Maintenance/Troubleshooting Manual "2.5 Ethernet Settings"

### 4.1 Setup Items in GP-Pro EX



#### ■ Communication Settings

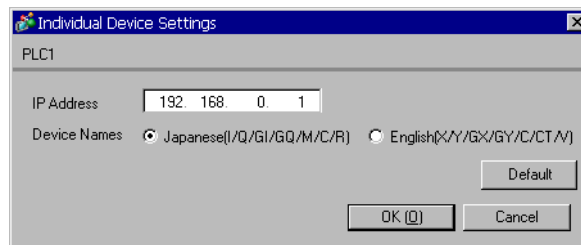
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Setup Items	Setup Description
Port No.	Use an integer from 1024 to 65535 to enter the port No. of the Display. When you check the option of [Auto], the port No. will be automatically set.
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, 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.



Setup Items	Setup Description
IP Address	Set IP address of the External Device. <div style="border: 1px solid black; padding: 2px; display: inline-block;"><b>NOTE</b></div> <ul style="list-style-type: none"> <li>Check with a network administrator about IP address. Do not set the duplicate IP address.</li> </ul>
Device Names	Select whether the device name is described in Japanese (I/Q/GI/GQ/M/C/R) or English (X/Y/GX/GY/C/CT/V).

## 4.2 Setup Items in Off-Line Mode

**NOTE**

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

Cf. Maintenance/Troubleshooting Manual "2.2 Off-line Mode"

### ■ Communication Settings

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

Comm.	Device			
KOSTAC/DL Series MODBUS TCP		[TCP]	Page 1/1	
Timeout(s)		3	▼	▲
Retry		0	▼	▲
Wait To Send(ms)		0	▼	▲
Exit		Back		2007/09/21 22:38:02

Setup Items	Setup Description
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.

## ■ 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			
KOSTAC/DL Series MODBUS TCP		[TCP]	Page 1/1	
Device/PLC Name		PLC1		
IP Address		192 168 0 1		
Device Names		English		
Exit		Back		2007/09/21 22:38:12










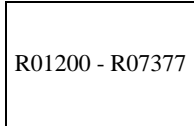
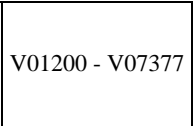






Setup Items	Setup Description
Device/PLC Name	Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1])
IP Address	Set IP address of the External Device. <b>NOTE</b> Check with a network administrator about IP address. Do not set the duplicate IP address.
Device Names	Display whether the device name is described in Japanese (I/Q/GI/GQ/M/C/R) or English (X/Y/GX/GY/C/CT/V).

## 5 Supported Device

Range of supported device address is shown in the table below.

### 5.1 Direct Logic05

 This address can be specified as system data area.

Device	Bit Address		Word Address		32 bits	Remarks
	Japanese	English	Japanese	English		
Input Points	I000 - I377	X000 - X377	R40400 - R40417	V40400 - V40417	<b>L / H</b>	 *1
Output Points	Q000 - Q377	Y000 - Y377	R40500 - R40517	V40500 - V40517		
Control Relays	M000 - M777	C000 - C777	R40600 - R40637	V40600 - V40637		
Special Relays	SP000 - SP777		R41200 - R41237	V41200 - V41237		
Timers	T000 - T177		R41100 - R41107	V41100 - V41107		
Counters	C000 - C177	CT000 - CT177	R41140 - R41147	V41140 - V41147		
Stages	S000 - S377		R41000 - R41017	V41000 - V41017		
Timer Current Values	-		R00000 - R00177	V00000 - V00177		
Counter Current Values	-		R01000 - R01177	V01000 - V01177		
User Data Words	-		 R01200 - R07377	 V01200 - V07377		  *2
User Data Words (Non-Volatile)	-		R07400 - R07577	V07400 - V07577		 
System Parameters	-		R07600 - R07777	V07600 - V07777		 

\*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.

There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.

\*2 R01200 to R01377 (Japanese) and V01200 to V01377 (English) cannot be used for bit assignment.

#### 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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.

 "Manual Symbols and Terminology"

## 5.2 Direct Logic06

     This address can be specified as system data area.

Device	Bit Address		Word Address		32 bits	Remarks
	Japanese	English	Japanese	English		
Input Points	I000 - I777	X000 - X777	R40400 - R40437	V40400 - V40437	L / H	<span style="border: 1px solid black; padding: 2px;">OCT 8</span> *1
Output Points	Q000 - Q777	Y000 - Y777	R40500 - R40537	V40500 - V40537		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Remote Input	GI0000 - GI3777	GX0000 - GX3777	R40000 - R40177	V40000 - V40177		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> *1
Remote Output	GQ0000 - GQ3777	GY0000 - GY3777	R40200 - R40377	V40200 - V40377		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Control Relays	M0000 - M1777	C0000 - C1777	R40600 - R40677	V40600 - V40677		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Special Relays	SP000 - SP777		R41200 - R41237	V41200 - V41237		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timers	T000 - T377		R41100 - R41117	V41100 - V41117		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counters	C000 - C177	CT000 - CT177	R41140 - R41147	V41140 - V41147		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Stages	S0000 - S1777		R41000 - R41077	V41000 - V41077		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timer Current Values	-		R00000 - R00377	V00000 - V00377		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counter Current Values	-		R01000 - R01177	V01000 - V01177		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
User Data Words	-		R00400 - R00677 R01200 - R07377 R10000 - R17777	V00400 - V00677 V01200 - V07377 V10000 - V17777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span> *2
User Data Words (Non-Volatile)	-		R07400 - R07577	V07400 - V07577		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>
System Parameters*3	-		R00700 - R00777 R07600 - R07777 R36000 - R37777	V00700 - V00777 V07600 - V07777 V36000 - V37777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>

\*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.

There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.

\*2 R01200 to R01377 (Japanese) and V01200 to V01377 (English) cannot be used for bit assignment.


\*3 R07600 to R07777 (Japanese) and V07600 to V07777 (English) cannot be assigned for system data area.
















**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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.

 "Manual Symbols and Terminology"

## 5.3 DL205 D2-240


 This address can be specified as system data area.

Device	Bit Address		Word Address		32 bits	Remarks
	Japanese	English	Japanese	English		
Input Points	I000 - I477	X000 - X477	R40400 - R40423	V40400 - V40423	<b>L / H</b>	 *1
Output Points	Q000 - Q477	Y000 - Y477	R40500 - R40523	V40500 - V40523		
Control Relays	M000 - M377	C000 - C377	R40600 - R40617	V40600 - V40617		
Special Relays	SP000 - SP137 SP540 - SP617		R41200 - R41205 R41226 - R41230	V41200 - V41205 V41226 - V41230		
Timers (Contact)	T000 - T177		R41100 - R41107	V41100 - V41107		
Counters (Contact)	C000 - C177	CT000 - CT177	R41140 - R41147	V41140 - V41147		
Stages	S000 - S777		R41000 - R41037	V41000 - V41037		
Timer Current Values	-		R00000 - R00177	V00000 - V00177		
Counter Current Values	-		R01000 - R01177	V01000 - V01177		
User Data Words	-		R02000 - R03777	V02000 - V03777		 
User Data Words (Non-Volatile)	-		R04000 - R04377	V04000 - V04377		 
System Parameters	-		R07620 - R07637 R07746 - R07777	V07620 - V07637 V07746 - V07777		 

\*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.

There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.

**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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.  
 "Manual Symbols and Terminology"

## 5.4 DL205 D2-250-1

  This address can be specified as system data area.


Device	Bit Address		Word Address		32 bits	Remarks
	Japanese	English	Japanese	English		
Input Points	I000 - I777	X000 - X777	R40400 - R40437	V40400 - V40437	<b>L / H</b>	<span style="border: 1px solid black; padding: 2px;">OCT 8</span> *1
Output Points	Q000 - Q777	Y000 - Y777	R40500 - R40537	V40500 - V40537		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Control Relays	M0000 - M1777	C0000 - C1777	R40600 - R40677	V40600 - V40677		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Special Relays	SP000 - SP777		R41200 - R41237	V41200 - V41237		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timers (Contact)	T000 - T377		R41100 - R41117	V41100 - V41117		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counters (Contact)	C000 - C177	CT000 - CT177	R41140 - R41147	V41140 - V41147		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Stages	S0000 - S1777		R41000 - R41077	V41000 - V41077		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timer Current Values	-		R00000 - R00377	V00000 - V00377		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counter Current Values	-		R01000 - R01177	V01000 - V01177		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
User Data Words	-		R01400 - R07377 R10000 - R17777	V01400 - V07377 V10000 - V17777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>
System Parameters *2	-		R07400 - R07777 R36000 - R37777	V07400 - V07777 V36000 - V37777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>

\*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.


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














\*2 R07400 to R07777 (Japanese) and V07400 to V07777 (English) cannot be assigned for system data area.

**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 (Direct Access Method)"
  - Please refer to the precautions on manual notation for icons in the table.
-  "Manual Symbols and Terminology"

## 5.5 DL205 D2-260

 This address can be specified as system data area.

Device	Bit Address		Word Address		32 bits	Remarks
	Japanese	English	Japanese	English		
Input Points	I0000 - I1777	X0000 - X1777	R40400 - R40477	V40400 - V40477	<b>L/H</b>	 *1
Output Points	Q0000 - Q1777	Y0000 - Y1777	R40500 - R40577	V40500 - V40577		
Remote Input	GI0000 - GI3777	GX0000 - GX3777	R40000 - R40177	V40000 - V40177		 *1
Remote Output	GQ0000 - GQ3777	GY0000 - GY3777	R40200 - R40377	V40200 - V40377		
Control Relays	M0000 - M3777	C0000 - C3777	R40600 - R40777	V40600 - V40777		
Special Relays	SP000 - SP777		R41200 - R41237	V41200 - V41237		
Timers (Contact)	T000 - T377		R41100 - R41117	V41100 - V41117		
Counters (Contact)	C000 - C377	CT000 - CT377	R41140 - R41157	V41140 - V41157		
Stages	S0000 - S1777		R41000 - R41077	V41000 - V41077		
Timer Current Values	-		R00000 - R00377	V00000 - V00377		
Counter Current Values	-		R01000 - R01377	V01000 - V01377		
User Data Words	-		R00400 - R00777 R01400 - R07377 R10000 - R35777	V00400 - V00777 V01400 - V07377 V10000 - V35777		 
System Parameters *2	-		R07400 - R07777 R36000 - R37777	V07400 - V07777 V36000 - V37777		 

\*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.

There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.

\*2 R07400 to R07777 (Japanese) and V07400 to V07777 (English) cannot be assigned for system data area.

**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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.

 "Manual Symbols and Terminology"




## 5.6 DL405 D4-430

     This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Remarks
Input Points	X000 - X477	V40400 - V40423	<b>L/H</b>	<span style="border: 1px solid black; padding: 2px;">OCT 8</span> *1
Output Points	Y000 - Y477	V40500 - V40523		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Remote Input	GX000 - GX777	V40000 - V40037		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Control Relays	C000 - C737	V40600 - V40635		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Special Relays	SP000 - SP137 SP320 - SP617	V41200 - V41205 V41215 - V41230		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timers (Contact)	T000 - T177	V41100 - V41107		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counters (Contact)	CT000 - CT177	V41140 - V41147		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Stages	S000 - S577	V41000 - V41027		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timer Current Values	-	V00000 - V00177		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counter Current Values	-	V01000 - V01177		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
User Data Words	-	V01400 - V07377		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>
System Parameters	-	V07400 - V07777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>

- \*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.  
There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.

**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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.  
 "Manual Symbols and Terminology"

## 5.7 DL405 D4-440

     This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Remarks
Input Points	X000 - X477	V40400 - V40423	[ L / H ]	<span style="border: 1px solid black; padding: 2px;">OCT 8</span> *1
Output Points	Y000 - Y477	V40500 - V40523		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Remote Input	GX0000 - GX1777	V40000 - V40077		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> *1
Control Relays	C0000 - C1777	V40600 - V40677		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Special Relays	SP000 - SP137 SP320 - SP717	V41200 - V41205 V41215 - V41234		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timers (Contact)	T000 - T377	V41100 - V41117		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counters (Contact)	CT000 - CT177	V41140 - V41147		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Stages	S0000 - S1777	V41000 - V41077		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timer Current Values	-	V00000 - V00377		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counter Current Values	-	V01000 - V01177		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
User Data Words	-	V01400 - V07377 V10000 - V17777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>
System Parameters *2	-	V00700 - V00737 V07400 - V07777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>

\*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.

There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.


\*2 V07400 to V07777 cannot be assigned for system data area.
















**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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.

 "Manual Symbols and Terminology"

## 5.8 DL405 D4-450

 This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Remarks
Input Points	X0000 - X1777	V40400 - V40477	<b>[L/H]</b>	 *1
Output Points	Y0000 - Y1777	V40500 - V40577		
Remote Input	GX0000 - GX3777	V40000 - V40177		 *1
Remote Output	GY0000 - GY3777	V40200 - V40377		
Control Relays	C0000 - C3777	V40600 - V40777		
Special Relays	SP000 - SP777	V41200 - V41237		
Timers (Contact)	T000 - T377	V41100 - V41117		
Counters (Contact)	CT000 - CT377	V41140 - V41157		
Stages	S0000 - S1777	V41000 - V41077		
Timer Current Values	-	V00000 - V00377		
Counter Current Values	-	V01000 - V01377		
User Data Words	-	V01400 - V07377		
		V10000 - V36777		
System Parameters *2	-	V00400 - V00777		
		V07400 - V07777 V37000 - V37777		

\*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.

There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.

\*2 V07400 to V07777 cannot be assigned for system data area.

**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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.

 "Manual Symbols and Terminology"


## 5.9 SU-5E

     This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Remarks
Input Points	I000 - I477	R40400 - R40423	<b>L/H</b>	<span style="border: 1px solid black; padding: 2px;">OCT 8</span> *1
Output Points	Q000 - Q477	R40500 - R40523		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Remote Input	GI000 - GI777	R40000 - R40037		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Control Relays	M000 - M737	R40600 - R40635		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Special Relays	SP000 - SP137 SP320 - SP617	R41200 - R41205 R41215 - R41230		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timers	T000 - T177	R41100 - R41107		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counters	C000 - C177	R41140 - R41147		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Stages	S000 - S577	R41000 - R41027		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timer Current Values	-	R00000 - R00177		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counter Current Values	-	R01000 - R01177		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Data Register	-	R01400 - R07377		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>
Special Register	-	R07400 - R07777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>

\*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.  
There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.

**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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.  
 "Manual Symbols and Terminology"

## 5.10 SU-6B

  This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Remarks
Input Points	I000 - I477	R40400 - R40423	[ L / H ]	<span style="border: 1px solid black; padding: 2px;">OCT 8</span> *1
Output Points	Q000 - Q477	R40500 - R40523		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Remote Input	GI0000 - GI1777	R40000 - R40077		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> *1
Control Relays	M0000 - M1777	R40600 - R40677		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Special Relays	SP000 - SP137 SP320 - SP717	R41200 - R41205 R41215 - R41234		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timers	T000 - T377	R41100 - R41117		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counters	C000 - C177	R41140 - R41147		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Stages	S0000 - S1777	R41000 - R41077		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Timer Current Values	-	R00000 - R00377		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Counter Current Values	-	R01000 - R01177		<span style="border: 1px solid black; padding: 2px;">OCT 8</span>
Data Register	-	R01400 - R07377 R10000 - R17777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>
Special Register *2	-	R00700 - R00737 R07400 - R07777		<span style="border: 1px solid black; padding: 2px;">OCT 8</span> <span style="border: 1px solid black; padding: 2px;">BIT 15</span>

\*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.

There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.


\*2 R07400 to R07777 cannot be assigned for system data area.
















**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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.

 "Manual Symbols and Terminology"

## 5.11 SU-5M / SU-6M

 This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Remarks
Input Points	I0000 - I1777	R40400 - R40477	<b>[ L / H ]</b>	 *1
Output Points	Q0000 - Q1777	R40500 - R40577		
Remote Input	GI0000 - GI3777	R40000 - R40177		 *1
Remote Output	GQ0000 - GQ3777	R40200 - R40377		
Control Relays	M0000 - M3777	R40600 - R40777		
Special Relays	SP000 - SP777	R41200 - R41237		
Timers	T000 - T377	R41100 - R41117		
Counters	C000 - C377	R41140 - R41157		
Stages	S0000 - S1777	R41000 - R41077		
Timer Current Values	-	R00000 - R00377		
Counter Current Values	-	R01000 - R01377		
Data Register	-	R01400 - R07377		
		R10000 - R36777		
Special Register *2	-	R00400 - R00777		
		R07400 - R07777		
		R37000 - R37777		

- \*1 When a bit is written, the Display reads the corresponding word address of the External Device, activates a bit in the read word address, and returns it to the External Device.  
There is a case that correct data cannot be written if a ladder program processes to write the word address while the Display is reading the data of the External Device and returning it.

- \*2 R07400 to R07777 cannot be assigned for system data area.

**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 (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.

 "Manual Symbols and Terminology"

## 6 Device Code and Address Code

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

### 6.1 Direct Logic05/Direct Logic06/DL205/DL405

Device	Device Name		Device Code (HEX)	Address Code
	Japanese	English		
Input Points	I/R	X/V	0080	Word Address
Output Points	Q/R	Y/V	0081	Word Address
Remote Input	GI/R	GX/V	0082	Word Address
Remote Output	GQ/R	GY/V	0083	Word Address
Control Relays	M/R	C/V	0084	Word Address
Special Relays	SP/R	SP/V	0085	Word Address
Timers (Contact)	T/R	T/V	00E0	Word Address
Counters (Contact)	C/R	CT/V	00E1	Word Address
Stages	S/R	S/V	0004	Word Address
Timer Current Values	R	V	0060	Word Address
Counter Current Values	R	V	0061	Word Address
User Data Words/System Parameters 1 (Address: 400 or more)	R	V	0000	Word Address
User Data Words/System Parameters 2 (Address: 1400 or more)	R	V	0001	Word Address
User Data Words/System Parameters 3 (Address: 7400 or more)	R	V	0002	Word Address
User Data Words/System Parameters 4 (Address: 10000 or more)	R	V	0003	Word Address

## 6.2 KOSTAC SU Series

Device	Device Name	Device Code (HEX)	Address Code
Input Points	I/R	0080	Word Address
Output Points	Q/R	0081	Word Address
Remote Input	GI/R	0082	Word Address
Remote Output	GQ/R	0083	Word Address
Control Relays	M/R	0084	Word Address
Special Relays	SP/R	0085	Word Address
Timers	T/R	00E0	Word Address
Counters	C/R	00E1	Word Address
Stages	S/R	0004	Word Address
Timer Current Values	R	0060	Word Address
Counter Current Values	R	0061	Word Address
Special Register (Address: 400 or more)	R	0000	Word Address
Data Register (Address: 1400 or more)	R	0001	Word Address
Special Register (Address: 7400 or more)	R	0002	Word Address
Special Register/Data Register (Address: 10000 or more)	R	0003	Word Address



## 7 Error Messages

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

Item	Description
No.	Error No.
Device Name	Name of External Device where error occurs. Device name is a title of External Device set with GP-Pro EX. (Initial value [PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	<p>Displays IP address or device address of External Device where error occurs, or error codes received from External Device.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• IP address is displayed such as "IP address (Decimal): MAC address (Hex)".</li> <li>• Device address is displayed such as "Address: Device address".</li> <li>• Received error codes are displayed such as "Decimal [Hex]".</li> </ul>

Display Examples of Error Messages

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

**NOTE**

- Refer to your External Device manual for details on received error codes.
- Refer to "When an error is displayed (Error Code List)" in "Maintenance/Troubleshooting Manual" for details on the error messages common to the driver.

### ■ Error Code Unique for Driver

The table below shows Display's error codes and error codes that are acquired via MODBUS TCP.

Error Code	Description
0x01	ILLEGAL FUNCTION
0x02	ILLEGAL DATA ADDRESS
0x03	ILLEGAL DATA VALUE
0x04	ILLEGAL RESPONSE LENGTH