GP-PRO/PBIII for Windows
Device/PLC CONNECTION MANUAL
ADDITIONAL MANUAL

Siemens Corporation PLC
S7-200/300/400 MPI

Pro-face
Human Machine Interface

Reading the GP-PRO/PBIII Device/PLC Connection Manual

This document is designed as an addition to the latest GP-PRO/PBIII for Windows Device/PLC Connection manual's Siemens Corporation data.

When connecting a Factory Gateway unit, please substitute the words "Factory Gateway" for this document's "GP/GLC".

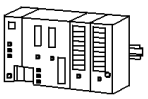
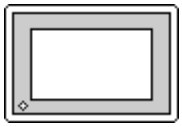
2.16 Siemens

2.16.1 System Structure

The following describes the system structure for connecting the GP to Siemens PLCs.

*Reference The Cable Diagrams mentioned in the following tables are listed in the section titled "**2.16.2 Cable Diagrams**".*

■ SIMATIC S5 Series (using Link I/F <3964/3964R via RK512 Protocol>)

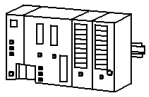
CPU	Link I/F	Cable Diagram	GP
			
90U, 95U, 100U	CP521 S1	RS-232C (Cable Diagram 1)	GP Series
115U	CP524 CP525		
115U (CPU944)	CPU unit Link I/F *1		
135U, 155U	CP524 CP525		
135U, 155U (CPU928B)	CPU unit Link I/F *1		

**1 Connect to SI2 Port.*

• Supports both 3964 and 3964R protocols. The GP automatically discriminates between the two. For better error detection, the 3964R is recommended.

• The PLC must be running a communication type ladder program to share data with the Device/PLC.

■ SIMATIC S5 Series (CPU Direct)

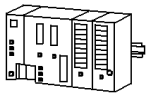
CPU *1	Cables	GP
		
90U, 95U, 100U (CPU100/102/103), 115U (CPU941/942/943/944), 135U/155U (CPU922/928/928B)	Digital's current loop converter *2 GP000-IS11-O	GP Series *3

**1 Connect to the Programming port.*

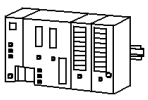
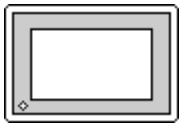
**2 Due to the size of its connector, this cable cannot be used for GP-270, GP-370 , and GP-377R series units.*

**3 Cannot be connected to GP2000, GLC2000 and ST Series units.*

■ SIMATIC S7-200 Series (PPI Connection)

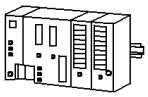
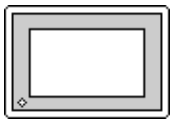
CPU	Cables	GP
		
CPU212, CPU214	RS422 (Cable Diagram 2)	GP Series

■ SIMATIC S7-200 Series (MPI Direct)

CPU	Cables	GP
		
CPU214, CPU215, CPU216, CPU221, CPU222, CPU224, CPU226	RS-422 (Cable Diagram 10)	GP/GLC Series
	RS-422 1:n Communication (Cable Diagram 11)	
	RS-422 n:1 Communication (Cable Diagram 12)	

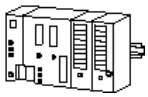
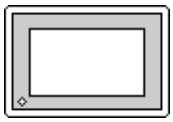
**1 Refer to this section's ◆Connectable GP/GLC units for SIMATIC S7-200/300/400 Series (MPI Direct).*

■ SIMATIC S7-300 Series (MPI Direct)

CPU	Cable Diagram	GP
		
CPU312IFM CPU313 CPU314	RS-422 (Cable Diagram 10)	GP/GLC Series *1
CPU314IFM CPU315 CPU315-2DP CPU316 CPU316-2DP CPU318-2	RS-422 1:n Communication (Cable Diagram 11)	
	RS-422 n:1 Communication (Cable Diagram 12)	

**1 Refer to this section's ◆Connectable GP/GLC units for SIMATIC S7-200/300/400 Series (MPI Direct).*

■ SIMATIC S7-400 Series (MPI Direct)

CPU	Cable Diagram	GP
		
CPU412-1 CPU412-2DP CPU413-1 CPU413-2DP	RS-422 (Cable Diagram 10)	GP/GLC Series *1
CPU414-1 CPU414-2DP CPU414-3DP CPU416-1 CPU416-2DP CPU416-3DP CPU-417-4	RS-422 1:n Communication (Cable Diagram 11)	
	RS-422 n:1 Communication (Cable Diagram 12)	

**1 Refer to this section's ◆Connectable GP/GLC units for SIMATIC S7-200/300/400 Series (MPI Direct).*

◆Connectable GP/GLC units for SIMATIC S7-200/300/400 Series (MPI Direct)

Series Name			Product Name	187500bps *1
GP70 Series		GP-377 Series	GP-377-LG41-24V	Rev. J or higher
			GP-377-SC41-24V	Rev. J or higher
		GP-37W2 Series	GP-37W2B	Rev.L or higher
GP77R Series		GP-377R Series	GP-377RT	—
		GP-477R Series	GP-477RE	—
		GP-577R Series	GP-577RS	—
			GP-577RT	—
GP2000 Series		GP-2300 Series	GP-2300L	Rev. I or higher
			GP-2300S	All Rev.
			GP-2300T	Rev. I or higher
		GP-2301 Series	GP-2301L	Rev. I or higher
			GP-2301S	Rev. I or higher
			GP-2301T	All Rev.
		GP-2400 Series	GP-2400T	Rev. H or higher
		GP-2401 Series	GP-2401T	All Rev.
		GP-2500 Series	GP-2500L	Rev. B or higher
			GP-2500S	Rev. A or higher
			GP-2500T (Only GP2500-TC41-24V)	Rev. C or higher
		GP-2501 Series	GP-2501S	Rev.A or higher
			GP-2501T	Rev.A or higher
		GP-2600 Series	GP-2600T (Only GP2600-TC41-24V)	Rev. C or higher
		GP-2601 Series	GP-2601T	All Rev.
	GP2000H Series	GP-2301H Series	GP-2301HL	All Rev.
			GP-2301HS	All Rev.
		GP-2401H Series	GP-2401HT	All Rev.
GLC2000 Series		GLC2300 Series	GLC-2300L	Rev. I or higher
			GLC-2300T	Rev. I or higher
		GLC2400 Series	GLC-2400T	Rev.E or higher
		GLC2500 Series	GLC-2500T	All Rev.
		GLC2600 Series	GLC-2600T	Rev.A or higher
ST Series		ST400 Series	ST402	All Rev.

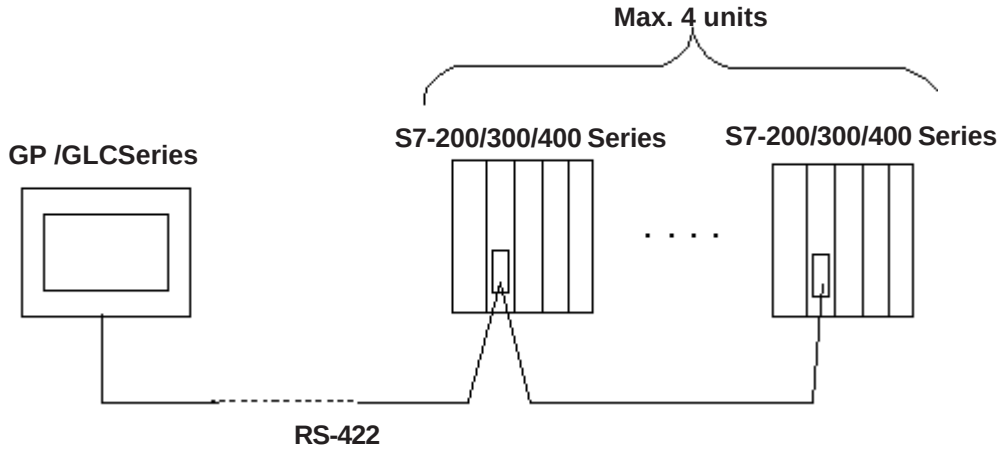
**1 When using a unit that cannot operate at 187500bps, be sure to select another data transfer speed.* Reference *2.16.4 Environment Setting Example*

Important

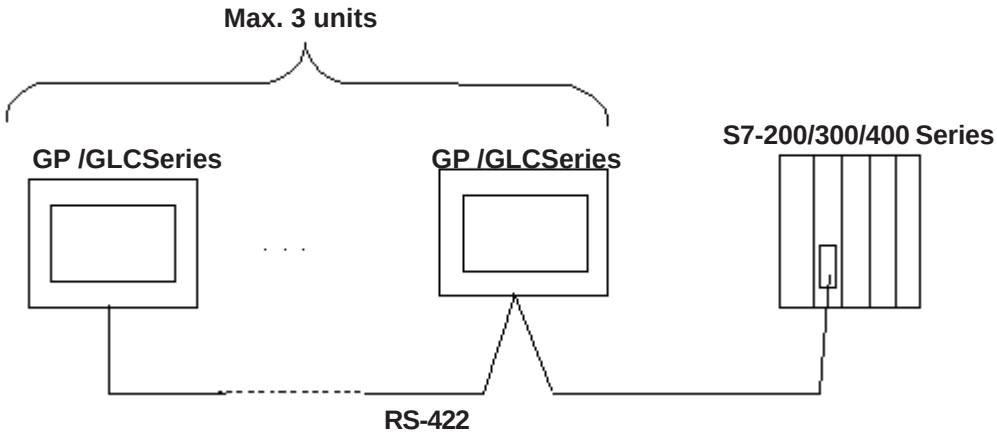
- ***When transferring data using a GLC2000 unit at 187500bps, be sure to either set the Ladder Scan Time to 8 times longer than the Logic Time, or set the Percent Scan at 10%.***
- ***For setting information, refer to your "Pro-Control Editor User Manual".***

◆ **Connection Structure**

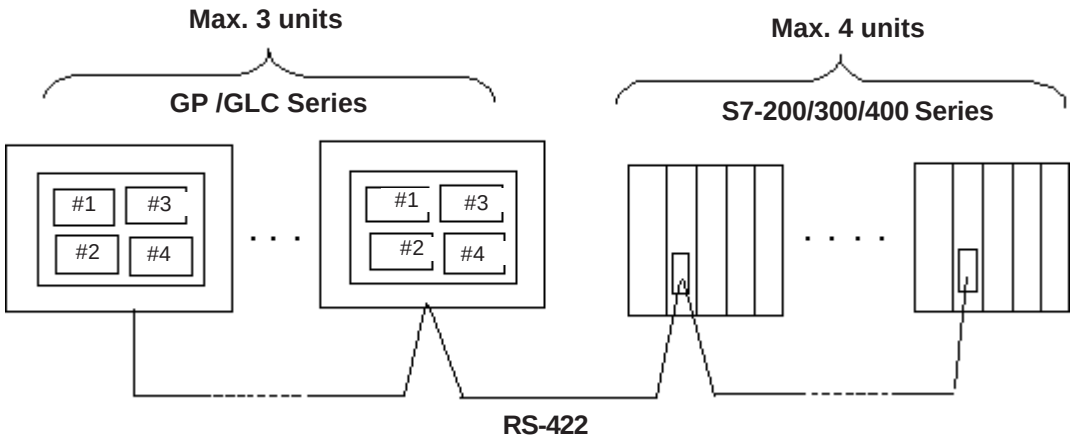
1:n RS-422 2-wire type



n:1 RS-422 2-wire type



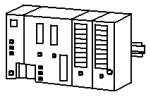
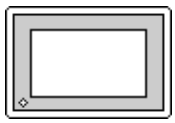
n:m RS-422 2-wire type



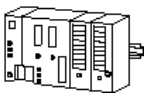
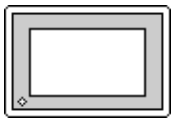
* *The connections 1:n and n:1 can be made on the same line.*

For details about MPI Network, refer to Siemens's Manual.

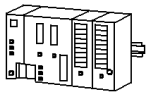
■ SIMATIC S7-300 Series (MPI via adapter)

CPU	Link I/F	GP
		
CPU312IFM, CPU313, CPU314, CPU315, CPU315-2DP	Digital's GP070-MPI-41	GP/GLC Series

■ SIMATIC S7-400 Series (MPI via adapter)

CPU	Link I/F	GP
		
CPU413-2DP	Digital's GP070-MPI-41	GP Series

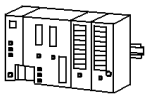
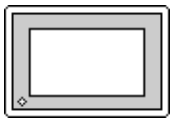
■ SIMATIC S7-300Series (Using Adapter <3964/RK512 >)

CPU	Link I/F	Cable Diagram	GP
			
CPU313, CPU314, CPU315, CPU315-2DP	CP340 *1 CP341	RS-232C (Cable Diagram 3)	GP Series

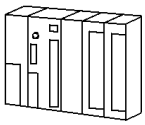
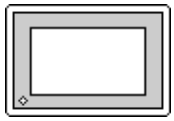
**1 When using the CP340 Link I/F an "Interpreter program" is required on the PLC. This is contained in the GP-PRO/PBIII for Windows CD-ROM 's "CP340" folder. Please see "README" file in this folder in order to install this program.*

This driver cannot be used with the CPU312IFM.

■ SIMATIC S7-400 Series (Using Adapter <3964/RK512 >)

CPU	Link I/F	Cable Diagram	GP
			
CPU413-2DP	CP441-2	RS-422 (Cable Diagram 4)	GP/GLC Series

■ SIMATIC 505 Series

CPU	Cable Diagram	GP
		
545-1101, 545-1102, 545-1103, 545-1104, 545-1105, 545-1106, 555-1101, 555-1102, 555-1103, 555-1104, 555-1105, 555-1106	RS-232C Port 1 Connection (Cable Diagram 5)	GP Series
545-1101, 545-1102, 555-1101, 555-1102	RS-422(4-wire type) Port 2 Connection (Cable Diagram 6)	
545-1104, 545-1105, 545-1106, 555-1103, 555-1104, 555-1105, 555-1106	RS-422(4-wire type) Port 2 Connection (Cable Diagram 7)	
545-1103, 545-1104, 545-1105, 545-1106, 555-1103, 555-1104, 555-1105, 555-1106	RS-232C Port 2 Connection (Cable Diagram 8)	
545-1101, 545-1102, 555-1101, 555-1102	RS-232C Port 2 Connection (Cable Diagram 9)	

2.16.2 Cable Diagrams

The cable diagrams illustrated below and the cable diagrams recommended by Siemens may differ, however, using these cables for your PLC operations will not cause any problems.

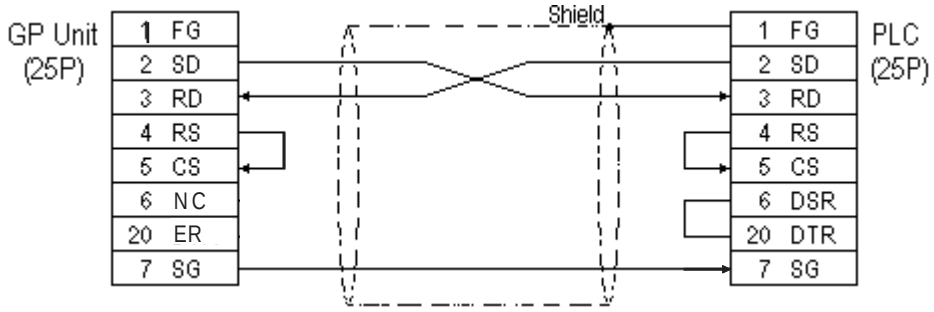
Careful!

Ground your PLC's FG terminal according to your country's applicable standard. For details, refer to the corresponding PLC manual.

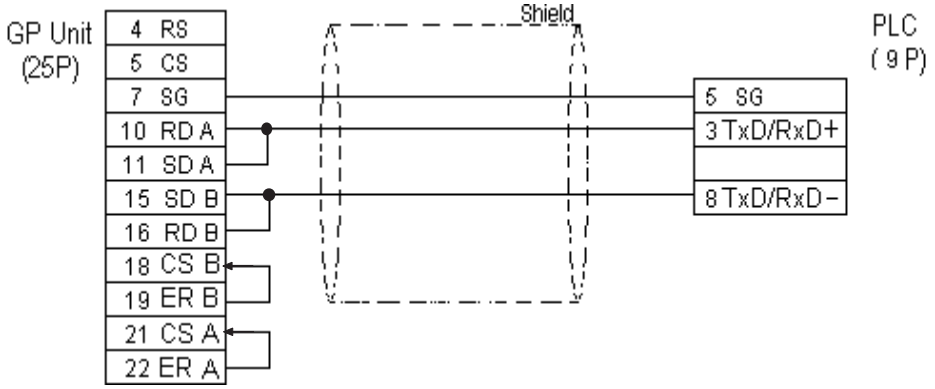
Important

- ***Connect the FG line of the Shield cable to either the GP or PLC, depending on your environment. When using a* Housing *and Grounding the FG line, be sure to use an electrical conductor.***
- ***For the RS-232C connection, use a cable length 15m or less.***
- ***If a communications cable is used, it must be connected to the SG (signal ground).***

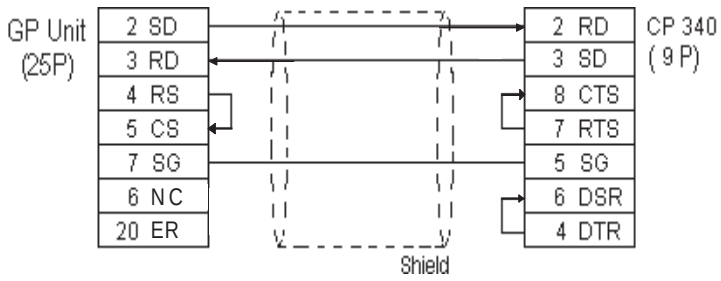
Cable Diagram 1 (RS-232C)



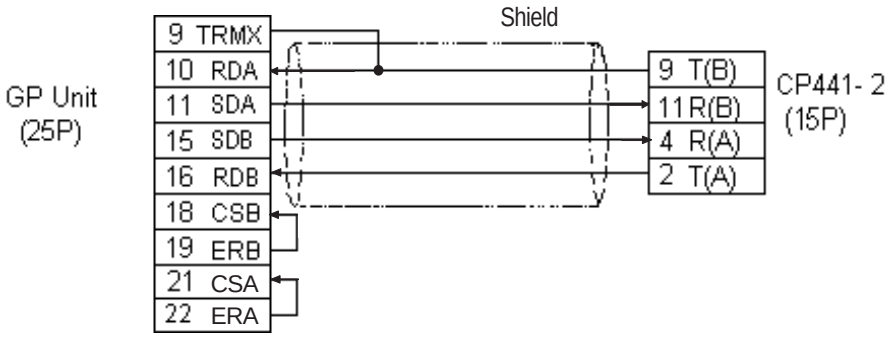
Cable Diagram 2 (RS-422)



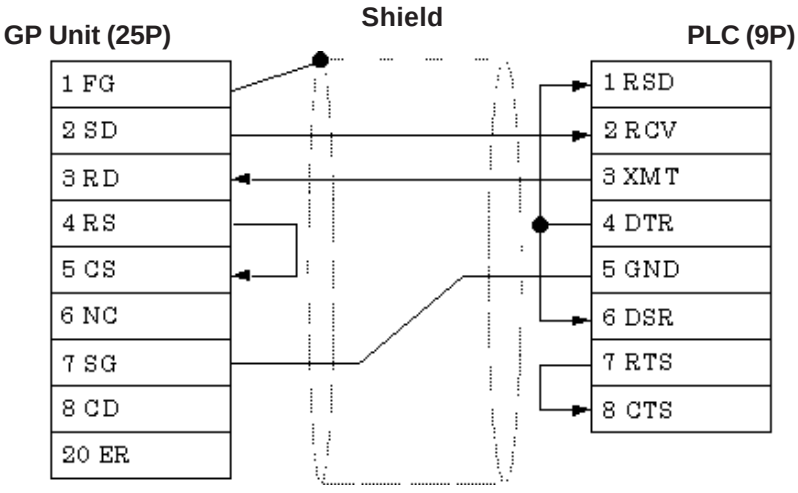
Cable Diagram 3 (RS-232C)



Cable Diagram 4 (RS-422)

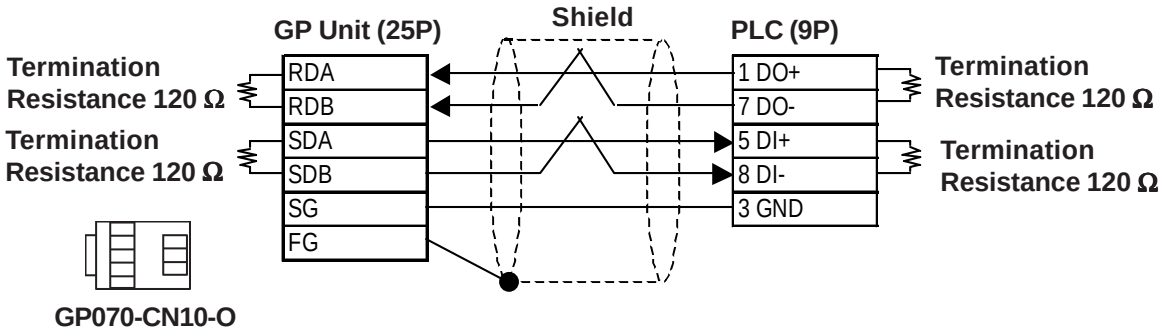


Cable Diagram 5 (RS-232C)

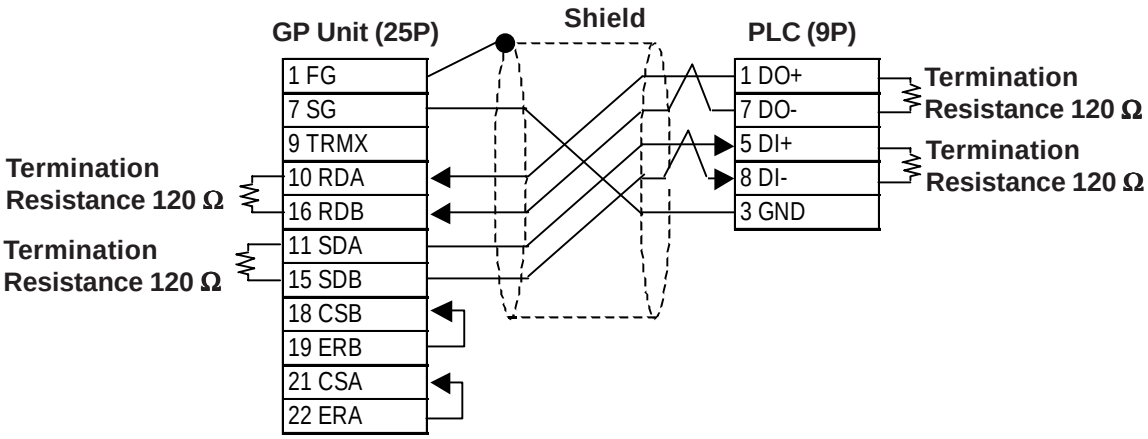


Cable Diagram 6 (RS-422)

• When using Digital's RS-422 connector terminal adapter, GP070-CN10-O

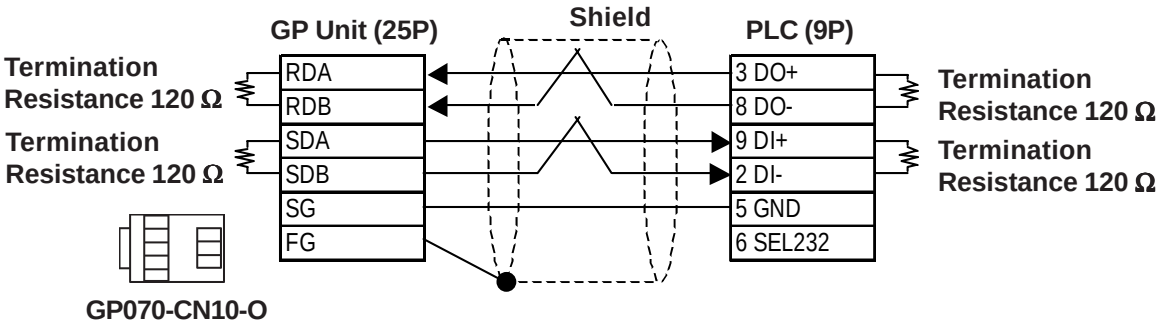


• When making your own cable connections

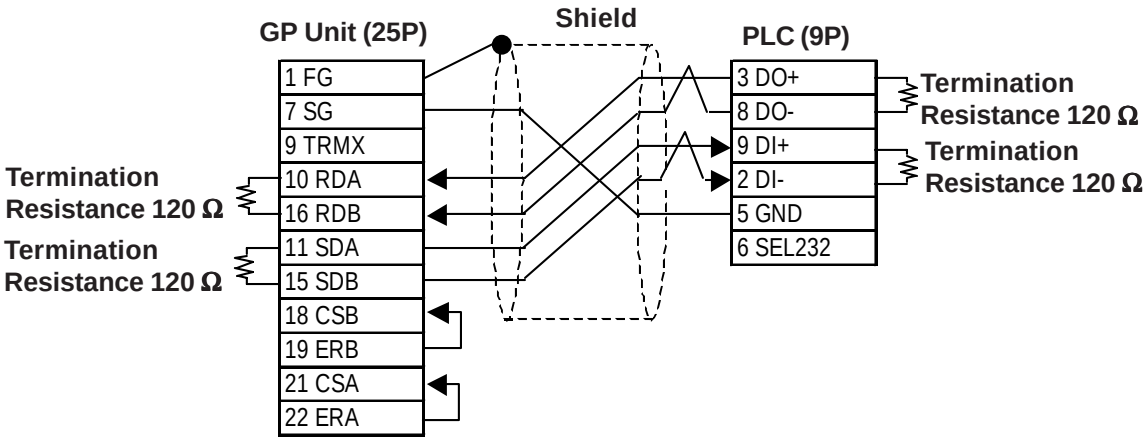


Cable Diagram 7 (RS-422)

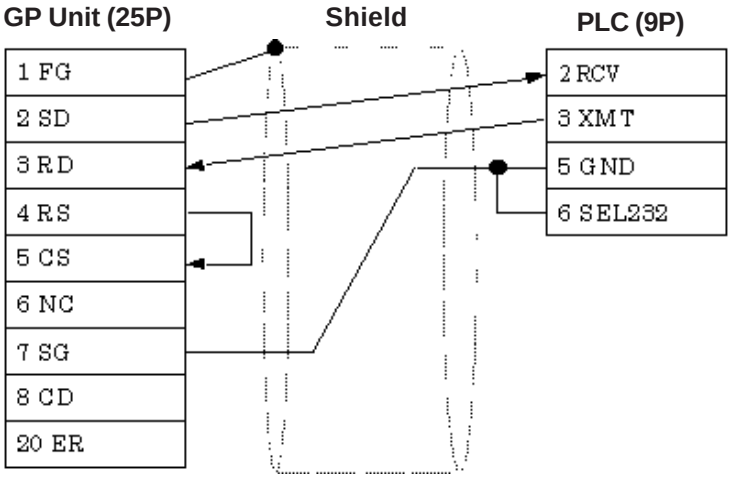
• When using Digital's RS-422 connector terminal adapter, GP070-CN10-O



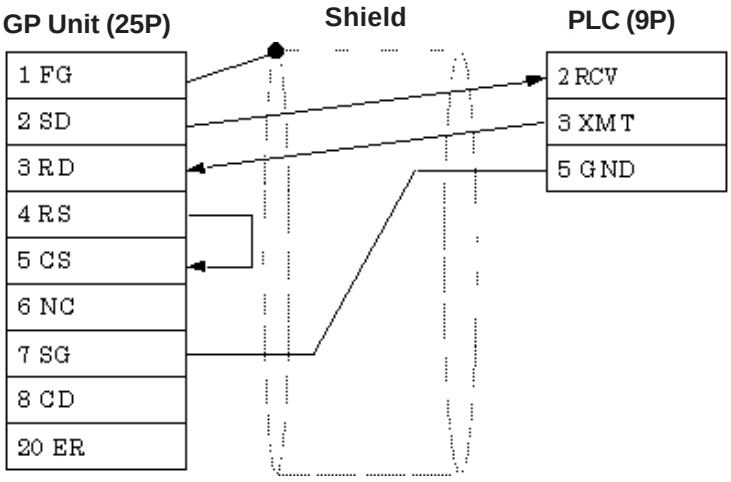
• When making your own cable connections



Cable Diagram 8 (RS-232C)



Cable Diagram 9 (RS-232C)

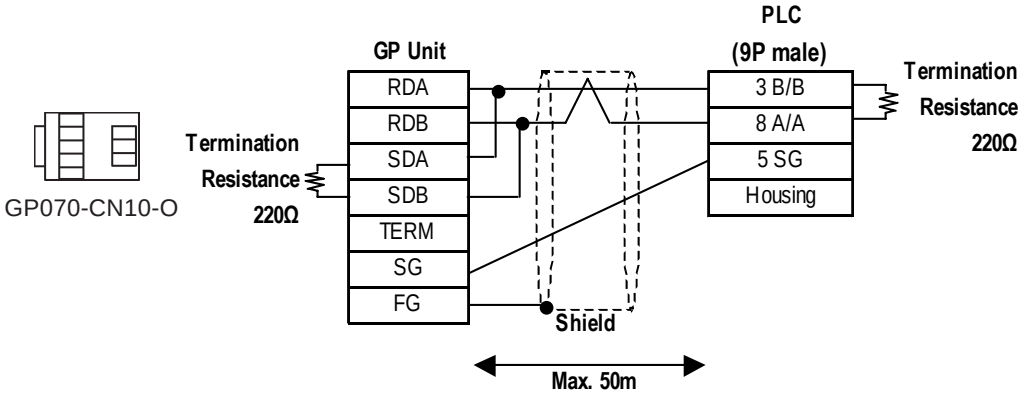


Cable Diagram 10 (RS-422 2-wire type)

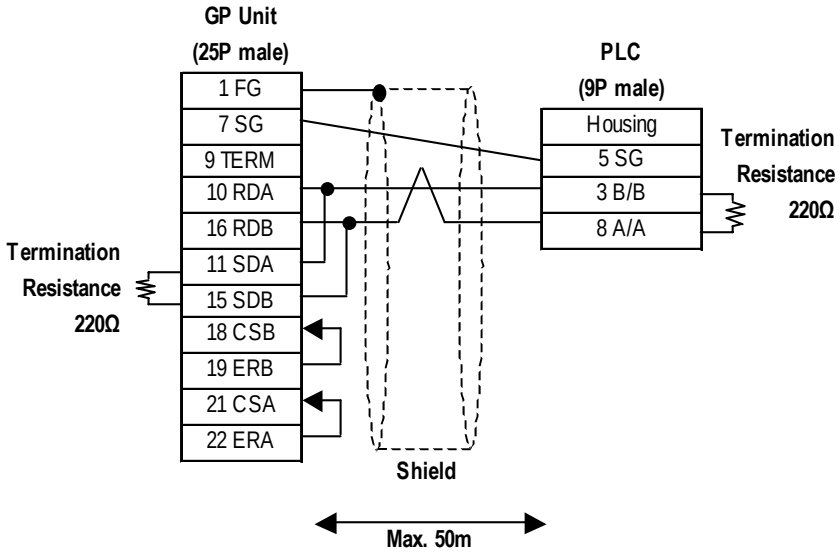
Important

- ***Use a cable length 50m or less for a single segment.***

• When using Digital's RS-422 connector terminal adapter, GP070-CN10-O



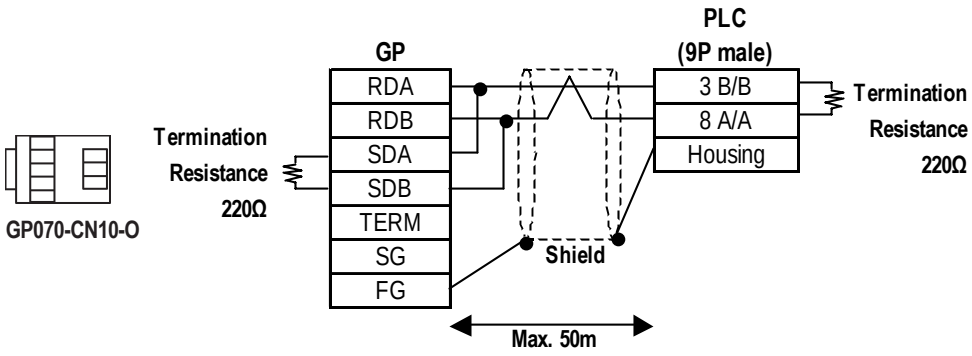
• When making your own cable connections



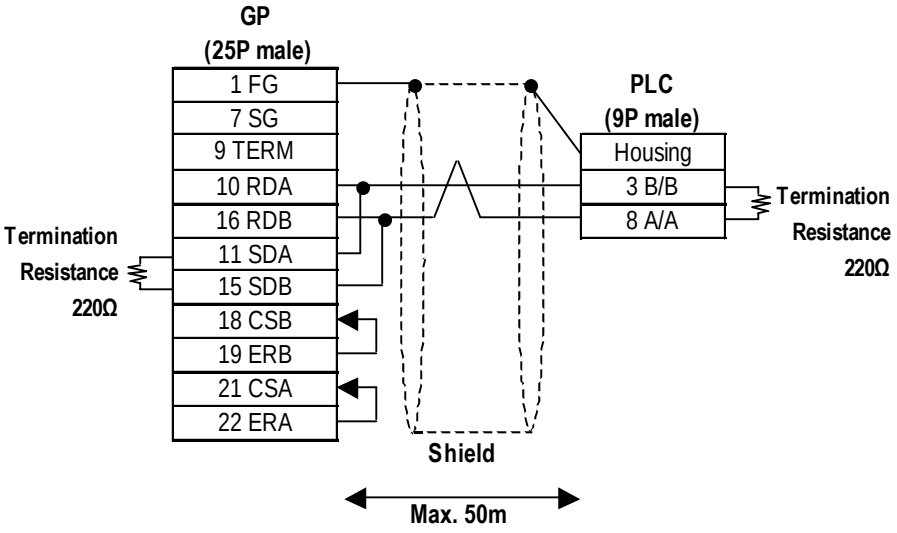
When using the following PLCs (MPI and Profibus port are the same type), the following cable diagram also can be used.

318-2(6ES7 318 2AJ00), 412-1(6ES7 412 1XF03), 412-2DP(6ES7 412 2XG00),414-2DP(6ES7 414 2XG03), 414-3DP(6ES7 414-3XJ00), 416-2DP(6ES7 416 2XK02), 416-3DP(6ES7 416-3XL00), 417-4(6ES7 417-4XL00)

- When using Digital's RS-422 connector terminal adapter, GP070-CN10-O and Siemens's Profibus Connector.



- When making your own cable connections

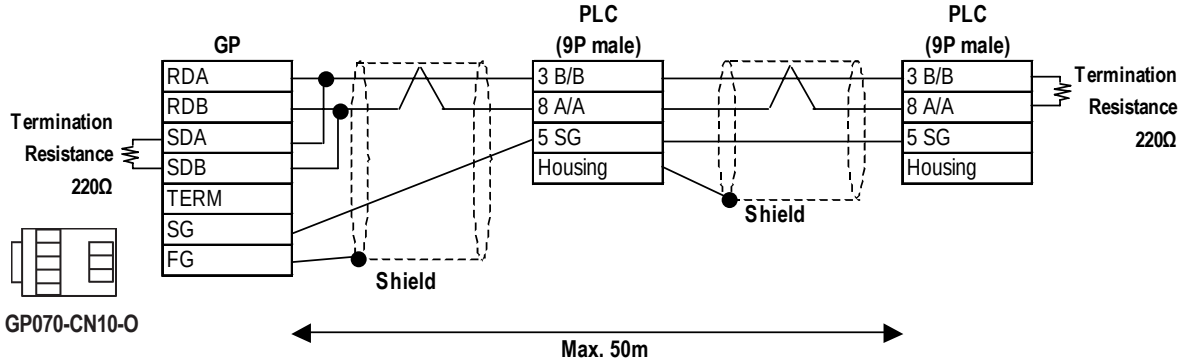


Cable Diagram 11 (RS-422 2-wire type)

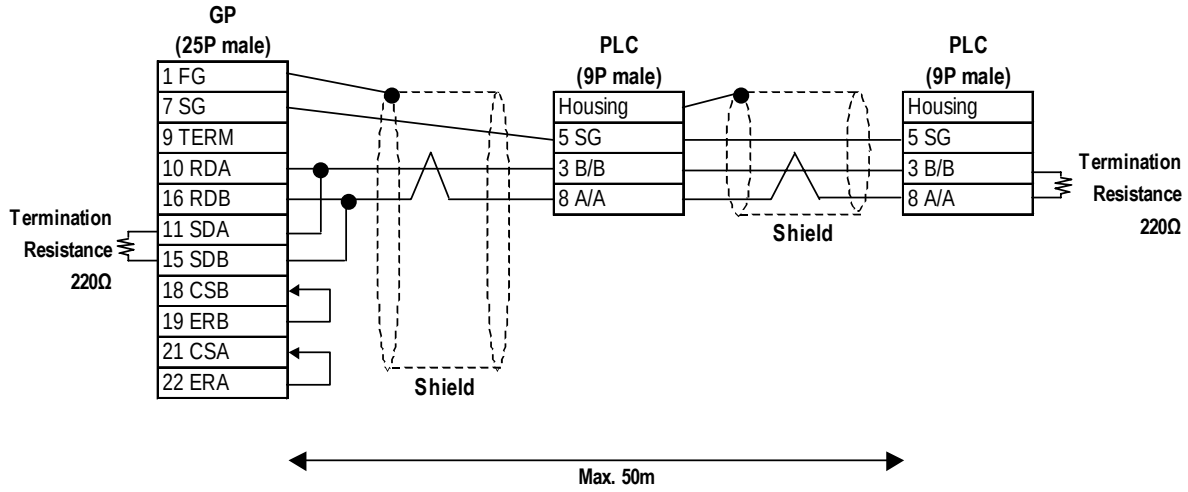
Important

- ***Use a cable length less than 50m for a single segment.***

• When using Digital's RS-422 connector terminal adapter, GP070-CN10-O



• When making your own cable connections



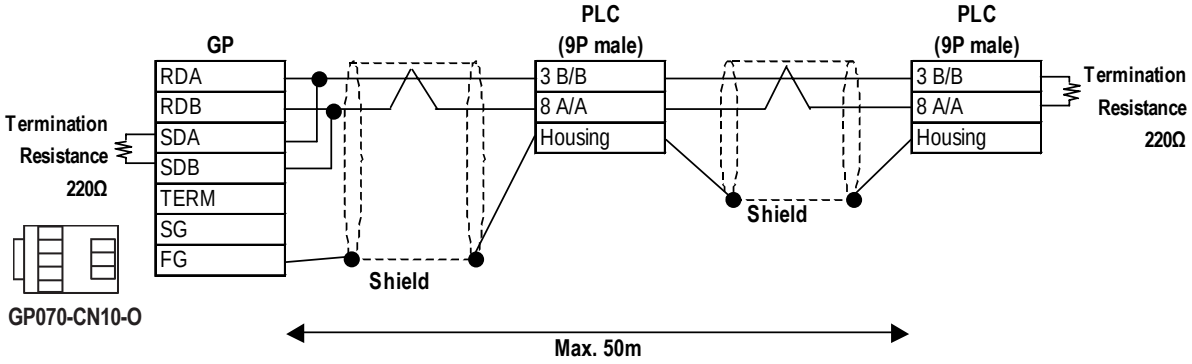
Note:

When making your own cable connections, we recommend to use the terminal between the cables because the PLC side connector is Dsub 9-pin connector.

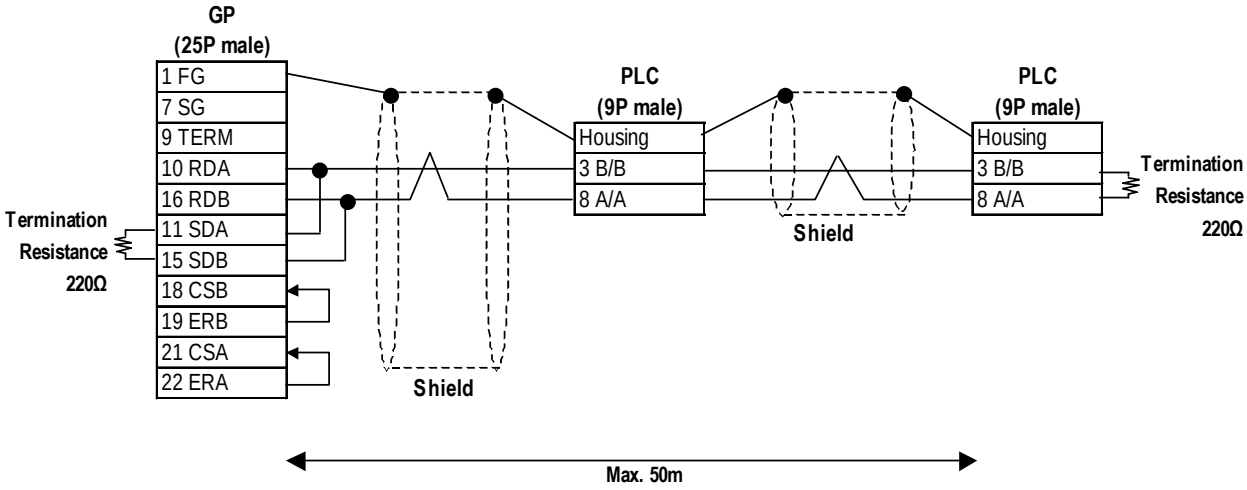
When using the following PLCs (MPI and Profibus port are the same type), the following cable diagram also can be used.

318-2(6ES7 318 2AJ00), 412-1(6ES7 412 1XF03), 412-2DP(6ES7 412 2XG00),414-2DP(6ES7 414 2XG03), 414-3DP(6ES7 414-3XJ00), 416-2DP(6ES7 416 2XK02), 416-3DP(6ES7 416-3XL00), 417-4(6ES7 417-4XL00)

- When using Digital's RS-422 connector terminal adapter, GP070-CN10-O and Siemens's Profibus Connector.



- When making your own cable connections

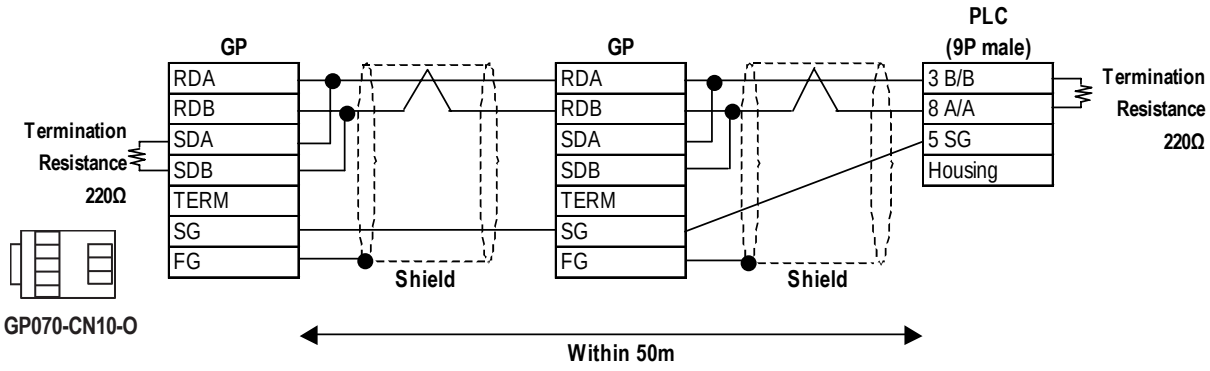


Cable Diagram 12 (RS-422 2-wire type)

Important

- ***Use a cable length less than 50m for a single segment.***

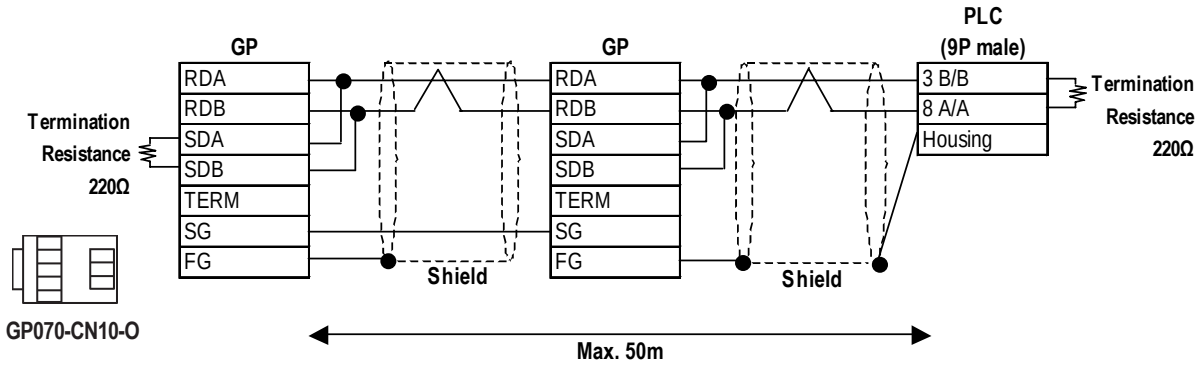
- When using Digital's RS-422 connector terminal adapter, GP070-CN10-O



When using the following PLCs (MPI and Profibus port are the same type), the following cable diagram also can be used.

318-2(6ES7 318 2AJ00), 412-1(6ES7 412 1XF03), 412-2DP(6ES7 412 2XG00),414-2DP(6ES7 414 2XG03), 414-3DP(6ES7 414-3XJ00), 416-2DP(6ES7 416 2XK02), 416-3DP(6ES7 416-3XL00), 417-4(6ES7 417-4XL00)

- When using Digital's RS-422 connector terminal adapter, GP070-CN10-O and Siemens's Profibus Connector.



2.16.3 Supported Devices

The following tables describe the range of devices supported by the GP.

■ SIMATIC S5 Series (using Adapter)

Setup System Area here.

Device	Bit Address	Word Address	Particulars	
Data Register	---	D003000 ~ D255255	Bit F *1*2	H/L
Extended Data Register	---	X003000 ~ X255255	Bit F *1*2	

■ SIMATIC S5 Series (CPU Direct)

Setup System Area here.

Device	Bit Address	Word Address	Particulars	
Input Relay	I0000 ~ I1277	IW000 ~ IW126	÷2 *3	H/L
Output Relay	Q0000 ~ Q1277	QW000 ~ QW126	÷2 *3	
Internal Relay	F0000 ~ F2557	FW000 ~ FW254	÷2 *3	
Timer	---	T000 ~ T255		L/H
Counter	---	C000 ~ C255		
Data Register	---	D002000 ~ D255255	Bit F *1 *4	H/L
Extended Data Register	---	X002000 ~ X255255	Bit F *1 *4 *5	

** 1 The range for the Data Register and the Extended Data Register must also be set up in the PLC. Communication will not occur with the GP when the System Area range is not setup.*

** 2 The Data Register and Extended Data Register is as illustrated below.*

E.g. D003 000

- 000 — Data Word (DW) No. 000~255
- D003 — Data Block (DB) No. 003~255

** 3 The bit device illustration for the PLC side is different.*

E.g.

GP	PLC
Q0007	Q0.7

** 4 The Data Register and Extended Data Register is as illustrated below.*

E.g. D002 000

- 000 — Data Word (DW) No. 000~255
- D002 — Data Block (DB) No. 002~255

** 5 The Extended Data Register is possible only with S5 135U/155U.*

For information about Bit Write process differences, see the end of this section.

■ SIMATIC S7-200 Series (PPI Connection)

Setup System Area here.

Device	Bit Address	Word Address	Particulars	
Input	I00 ~ I77	IW0 ~ IW6	÷2 *1	H/L
Output	Q00 ~ Q77	QW0 ~ QW6	÷2 *1	
Internal Memory	M000 ~ M317	MW00 ~ MW30	÷2 *1	
Special Memory	SM000 ~ SM857	SMW00 ~ SMW84	÷2 *1	
Timer Bit	T000 ~ T127	---		
Counter Bit	C00 ~ C63	---		
Variable Memory	---	VW0000 ~ VW4094	÷2	
Timer Word	---	TW000 ~ TW127		
Counter Word	---	CW000 ~ CW127		

**1 The bit position is the last digit entered. There is no '.' delimeter - e.g. I3.7 is equivalent to 137 in GP-PRO/PBIII.*

■ SIMATIC S7-200 Series (MPI Direct)

Setup System Area here.

Device	Bit Address	Word Address	Particulars	
Input	I0000.0 ~ I0015.7	IW0000 ~ IW0014	÷2	H/L
Output	Q0000.0 ~ Q0015.7	QW0000 ~ QW0014	÷2	
Internal	M0000.0 ~ M0031.7	MW0000 ~ MW0030	÷2	
Timer	---	T0000 ~ T0255	*1	
Counter	---	C0000 ~ C0255	*1	
Variable Memory	---	VW0000 ~ VW5118	÷2 Bit 7	

**1 Cannot be written in. When performing data write, a Host communication Error (02:FB) will occur.* Reference 2.16.5 Error Codes

Important

- ***Pro-Server cannot read/write.***
- ***When connecting multiple GP units, be sure to set each unit's system area top address so that it does not overlap the system area of another GP.***

■ SIMATIC S7-300/400 Series (MPI Direct/MPI via adapter)

Setup System Area here.

Device	Bit Address	Word Address	Particulars	
Input	E00000.0 ~ E00127.7	EW00000 ~ EW00126	*1 ÷2	H/L
Output	A00000.0 ~ A00127.7	AW00000 ~ AW00126	*1 ÷2	
Internal Memory	M00000.0 ~ M00255.7	MW00000 ~ MW00254	*1 ÷2	
Timer		T00000 ~ T00127	*2 *3	
Counter		Z00000 ~ Z00063	*2 *3	
Data Block		DB1W00000 ~ DB60W65532	*3 *4 ÷2 Bit 7	
Data Block	DB1.DBX0.0 ~ DB65535.DBX65533.7	DB1.DBW0 ~ DB65535.DBW65532	*5 *6 ÷2	

**1 When using a GP70 Series unit (except for GP-377 Series units), only devices of the PLC registered as #1 in the Target Node (PLC) area can be used. All other GP/GLC units can use PLC device #1 to #4, set up in the Target Node (PLC) area. For Target Node setting, refer to 2.16.4 Environment Setup.*

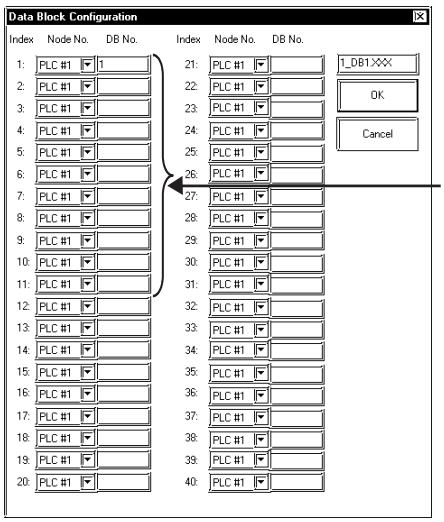
**2. Data write cannot be performed. If data write is attempted, a Host Communication error (02:FB) will occur.* Reference 2.16.5 Error Codes

**3. Only the PLC device registered as #1 in the Target Node (PLC) area can be used. For Target Node setting, refer to 2.16.4 Environment Setup.*

**4 The addressing format for entering on GP-PRO/PB III is different from the convention used in the S7-300/400 - e.g. DB63W00020 is equivalent to DB63.DBW20.*

**5 When Data Blocks other than DB61 in a 1:1 Connection or using a 1:n connection designating data blocks for multiple PLCs, use this address. However, the maximum number of data blocks is 40. GP70 Series units (except for GP-377 Series units) cannot use this devices.*

**6 When using the Data Block Device, be sure to perform the settings via GP-PRO/PBIII for Windows' [GP Setup] - [Mode Settings] - [MPI Network] - [Data Block Configuration] menu.*



Important

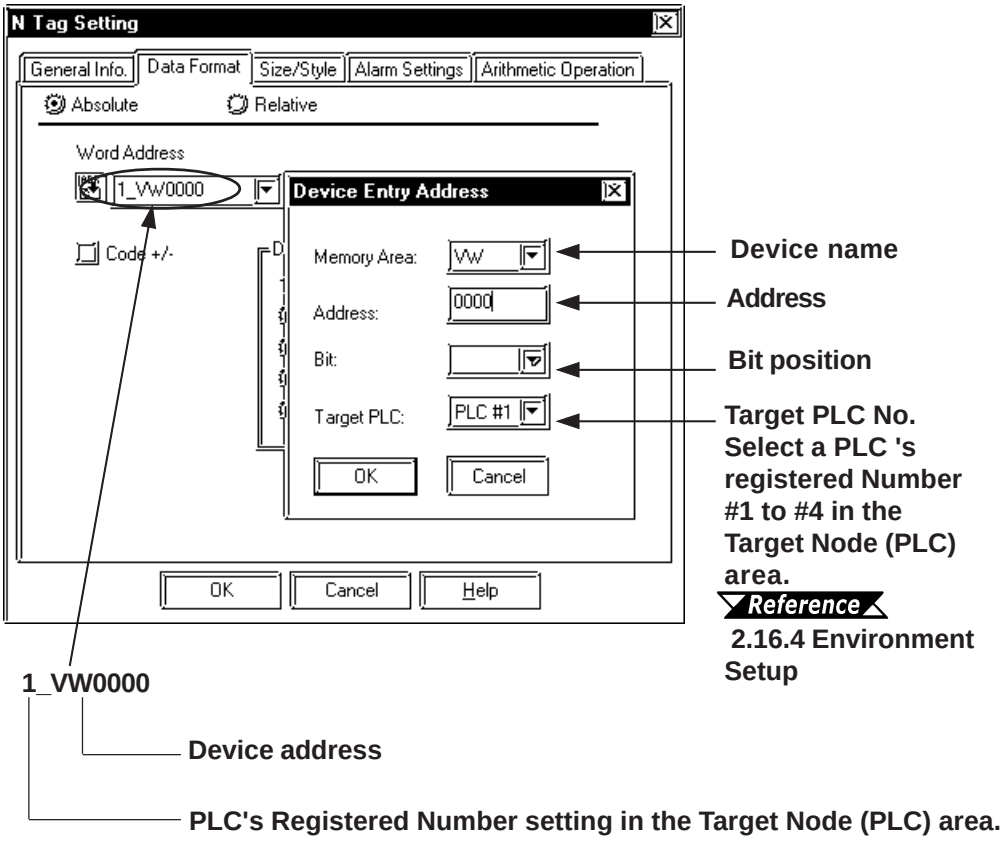
- ***Pro-Server read/write of devices using data blocks DB1.DBW0 to DB65535.DBW65532 is not possible. With other devices, read/write is possible only with the PLC registered as #1 in the Target Node (PLC) area. For Target Node setting, refer to 2.16.4 Environment Setup.***
- ***When designating indirect addresses for E-tags and K-tags, devices using data blocks DB1.DBW0 to DB65535.DBW65532 cannot be used.***
- ***When connecting multiple GP units, be sure to set each unit's system area top address so that it does not overlap the system area of another GP.***

◆ **Setting the GP-PRO/PBIII for Windows**

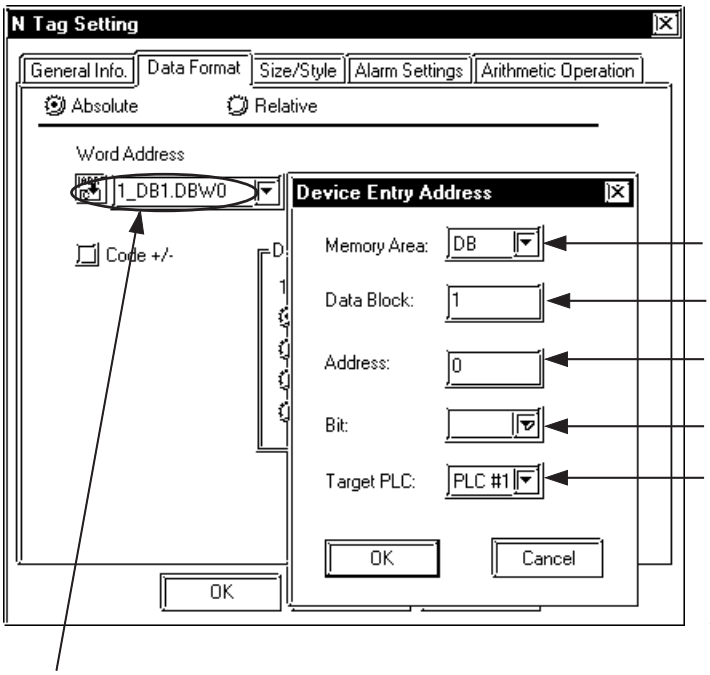
To set any Part or Tag on the GP-PRO/PBIII, specify the registration number of the PLC when entering the address. If not, the last entered device number is assumed. (The default value is 01).

To use a registration number, previously register that number by selecting MPI Network from the Mode Settings tab of the GP Settings window.

- **When setting an N-tag connecting to SIMATIC S7-200 Series units (MPI Direct)**



- **When setting an N-tag connecting to SIMATIC S7-300/400 Series units (MPI Direct/MPI via Adapter)**



Device name

Data Block

Address

Bit position

Target PLC No. Select a PLC 's registered Number #1 to #4 in the Target Node (PLC) area.

Reference

2.16.4 Environment Setup

1_DB1.DBW0

Device address

PLC's Registered Number setting in the Target Node (PLC) area.

■ SIMATIC S7-300/400 (via 3964/RK512)

Setup System Area here.

Device	Bit Address	Word Address	Particulars	
Data Memory	DB1W000000 ~ DB60W002547	DB1W00000 ~ DB60W00254	÷2 *1*2	H/L

Note:

It is possible to enable/disable the Block Check Character (BCC) in PLC to GP communications.
This can be performed via the GP's OFFLINE mode, or, via the GP-PRO/PBIII Editor's Mode Area's "Option" Command.

**1 Some Data Blocks are reserved for the 3964 interpreter program: DB2,DB3,DB5 & DB10.*

**2 The addressing format for entering settings in GP-PRO/PB III is different from the convention used in the S7-300/400 - e.g. DB63W00020 is equivalent to DB63.DBW20.*

■ SIMATIC 505 Series

Setup System Area here.

Device	Bit Address	Word Address	Particulars	
Variable Memory	————	V00001 ~ V26624		L/H
Word Input	————	WX00001 ~ WX08192	*1	
Word Output	————	WY00001 ~ WY08192		
Discrete Input accessed as bit	X0001 ~ X8192	————		
Discrete Output accessed as bit	Y0001 ~ Y8192	————		
Control Relay Accessed as bit	CR00001 ~ CR32768	————		
Loop Gain	————	LKC0001 ~ LKC0064	*2	
Loop Reset	————	LTI0001 ~ LTI0064	*2	
Loop Rate	————	LTD0001 ~ LTD0064	*2	
Loop Alarm High Limit	————	LHA0001 ~ LHA0064	*2	
Loop Low Alarm Limit	————	LLA0001 ~ LLA0064	*2	
Loop Process Variable	————	LPV0001 ~ LPV0064	*2	
Loop PV High Limit	————	LPVH0001 ~ LPVH0064	*2	
Loop PV Low Limit	————	LPVL0001 ~ LPVL0064	*2	
Loop Orange Deviation Limit	————	LODA0001 ~ LODA0064	*2	
Loop Yellow Deviation Alarm Limit	————	LYDA0001 ~ LYDA0064	*2	
Loop Sample Rate	————	LTS0001 ~ LTS0064	*2	
Loop Setpoint	————	LSP0001 ~ LSP0064	*2	
Loop Output	————	LMN0001 ~ LMN0064	*2	
Loop Error	————	LERR0001 ~ LERR0064	*1 *2	
Loop Bias	————	LMX0001 ~ LMX0064	*2	
Loop Alarm High-High Limit	————	LHHA0001 ~ LHHA0064	*2	
Loop Low-Low Alarm Unit	————	LLLA0001 ~ LLLA0064	*2	
Loop Rate of Change Alarm Limit	————	LRCA0001 ~ LRCA0064	*2	
Loop Setpoint High Point	————	LSPH0001 ~ LSPH0064	*2	

(Continued on next page)

■ SIMATIC 505 Series

Device	Bit Address	Word Address	Particulars	
Loop Setpoint Low Limit	————	LSPL0001 ~ LSPL0064	*2	
Loop Alarm Deadband	————	LADB0001 ~ LADB0064	*2	
Loop V-flags	————	LVF0001 ~ LVF0064		L/H
Most Significant Word of Loop C-flags	————	LCFH0001 ~ LCFH0064		
Least Significant Word of Loop C-flags	————	LCFL0001 ~ LCFL0064		
Analog Alarm/Alarm Acknowledge Flags	————	AADB0001 ~ AADB0128	*2	
Most Significant Word of Analog Alarm C-flags	————	ACFH0001 ~ ACFH0128		L/H
Least Significant Word of Analog Alarm C-flags	————	ACFL0001 ~ ACFL0128		
Analog Alarm Error	————	AERR0001 ~ AERR0128	*1*2	
Analog Alarm High Alarm Limit	————	AHA0001 ~ AHA0128	*2	
Analog Alarm High-High Alarm Limit	————	AHHA0001 ~ AHHA0128	*2	
Analog Alarm Low Alarm Limit	————	ALA0001 ~ ALA0128	*2	
Analog Alarm Low-Low Alarm Limit	————	ALLA0001 ~ ALLA0128	*2	
Analog Alarm Loop Orange Deviation Alarm Limit	————	AODA0001 ~ AODA0128	*2	
Analog Alarm Process Variable	————	APV0001 ~ APV0128	*2	
Analog Alarm Rate of Change Alarm Limit	————	ARCA0001 ~ ARCA0128	*2	
Analog Alarm Setpoint	————	ASP0001 ~ ASP0128	*2	
Analog Alarm SP High Limit	————	ASPH0001 ~ ASPH0128	*2	
Analog Alarm SP Low Limit	————	ASPL0001 ~ ASPL0128	*2	
Analog Alarm Sample Rate	————	ATS0001 ~ ATS0128	*2	
Analog Alarm Yellow Deviation Alarm Limit	————	AYDA0001 ~ AYDA0128	*2	
Timer/Counter Preset	————	TCP0001 ~ TCP1024	*3	
Timer/Counter Current	————	TCC0001 ~ TCC1024	*3	
Drum Counter Preset	————	DCP0101 ~ DCP6416	*3*4	
Drum Step Preset	————	DSP0001 ~ DSP0064	*3*5*6	L/H
Drum Step Current	————	DSC0001 ~ DSC0064	*3*5*6	
Status Word	————	STW0001 ~ STW0222	*1	
Drum Count Current	————	DCC0001 ~ DCC0064	*1	

(Continued on next page)

(From previous page)

**1 The GP cannot write data to this device. Use it only for reading.*

**2 This device uses Float. When this type of device is used, only the E-tag and K-tag's "32 bit Float" setting can be used.*

**3 32 bit reading / writing, or reading / writing a K-tag's text string cannot be performed.*

**4 Address entry method:*

Enter 1.01 as "101"

Enter 1.02 as "102"

Enter 1.03 as "103"

...

Enter 1.16 as "116"

Enter 2.01 as "201"

Enter 2.02 as "202"

...

Enter 64.15 as "6415"

Enter 64.16 as "6416"

**5 Entry range is from 0 to 15 (dec.)*

**6 +1 is added to all data input from the GP to the PLC. -1 is added to all data output from the PLC to the GP.*

GP		*PLC*	
1	*→*	*2*	*("1" entered from the GP is changed to "2" in the PLC.)*
5	*←*	*6*	*("6" sent from the PLC to the GP will become "5".)*

2.16.4 Environment Setup

The following lists Digital's recommended PLC and GP communication settings.

■ SIMATIC S5 Series (using Link I/F)

GP Setup		Link I/F Setup	
Baud Rate	19200 bps	Baud Rate	19200 bps
Data Length	8 bits	Data Bit	8 bits
Stop Bit	1 bit	Stop Bit	1 bit
Parity Bit	Even	Parity Bit	Even
Data Flow Control	ER Control	---	
Communication Format (RS-232C)	RS-232C	---	
Communication Format (RS-422)	4-wire type	---	
Unit No.	0 (fixed)	---	

■ SIMATIC S5 Series (CPU Direct)

GP Setup		PC Link Unit Setup
Baud Rate	9600 bps (fixed)	---
Data Length	8 bits (fixed)	---
Stop Bit	1 bit (fixed)	---
Parity Bit	Even (fixed)	---
Data Flow Control	ER Control (fixed)	---
Communication Format	RS-232C (fixed)	---
Unit No.	0 (fixed)	---

System Data Area Setup

- SYSTEM DATA AREA START DB—used to setup the Data Register's Data Block (DB) Number.
- SYSTEM DATA AREA START DW—used to setup the Data Register's Data Word (DW) Number.

Reference *"2.16.3 Supported Devices"*

If Link I/F is used, the system's number is indicated before the DB (Data Block) on the INITIALIZE area's [SETUP OPERATION SURROUNDINGS] screen. Changing this number, however, is not necessary since this data will be used only for future expansion.

- **The method of writing bits will differ depending on the GP series.**

<GP-*30 series>

When the bit write operation (other than *Reverse*) is performed, the corresponding word address will set the bits to 0 (except the designated bits).

<Except GP-*30 series>

When the bit write operation is performed, the GP reads the PLC's corresponding word address and turns a bit ON, then send back to PLC. Do not write to the word address from the ladder program in the middle of this operation.

- **When running a GP-*30 Series ladder program, be aware of the above points.**

■ SIMATIC S7-200 Series (PPI Connection)

GP Setup		PC Link Unit Setup
Baud Rate	9600 bps	---
Data Bit	8 bits	---
Parity Bit	Even	---
Stop Bit	1 bit	---
Data Flow Control	ER Control	---
Communication Format	RS-422 2-wire type	---
GP No.	1	---
PLC No.	2	2

■ SIMATIC S7-200 Series (MPI Direct)

GP Setup				PLC Setup	
Baud Rate *1			19200 bps	Baud Rate	19200 bps
Data Length			8 bits (fixed)	———	———
Stop Bit			1 bit (fixed)	———	———
Parity Bit			Even (fixed)	———	———
Data Flow Control			ER (fixed)	———	———
Communication Format			RS-422 2-Wire type (fixed)	———	———
Highest Node No. *2 *3			31	Highest Address *3	31
GP is Only Master *4			ON	———	———
Enable Node Control Area *9			OFF	———	———
Local Node (GP) *5			1	———	———
Target Node (PLC)	No. of PLCs *7		1	———	———
	Node Number *8	#1	2	MPI Address *6	2
		#2	Depending on the PLC's MPI Address	MPI Address *6	0 to 126
		#3	Depending on the PLC's MPI Address	MPI Address *6	0 to 126
		#4	Depending on the PLC's MPI Address	MPI Address *6	0 to 126

**1 Baud Rate can be 9600bps, 19200bps or 187500bps depending on the PLC unit's Baud rate. However, certain GP units cannot use the 187500bps speed.* Reference 2.16.1 System Structure SIMATIC S7-200 Series (MPI Direct)
If the 187500bps speed is used with incompatible GP Series units, a Host Communication error (02:F2) will occur.
Reference 2.16.5 Error Codes

**2 15/31/63/126 can be selected. Be sure this setting is the same as the PLC unit's Highest Address setting.*

**3 15/31/63/126 can be selected. On a single network, choose the value that is higher than the maximum value of the GP's Local Node or the PLC's MPI Address. For example, if the maximum value is 16, then select 31.Specify the smallest practical value for the maximum node address. This will shorten the time required for initializing the network.*

**4 When MPI master does not exist on a single network, a GP can be master. When GP is master, set to ON.*

**5 Set the GP's unit number. Setting range is from 0 to 126, and the maximum number of GP units that can be connected is 3. Be sure this number is not used as a PLC's Node No.*

**6 Set the PLC unit's node number. Setting range is from 0 to 126, and the maximum number of PLCs that can be connected is 4. Be sure this number is not used as a GP and another PLC unit's Node No.*

**7 Select the number of PLCs to use for data communication.*

**8 Register the PLC's MPI Address. This setting can only be entered using the GP-PRO/PBIII software. The GP unit's OFFLINE mode cannot be used.*

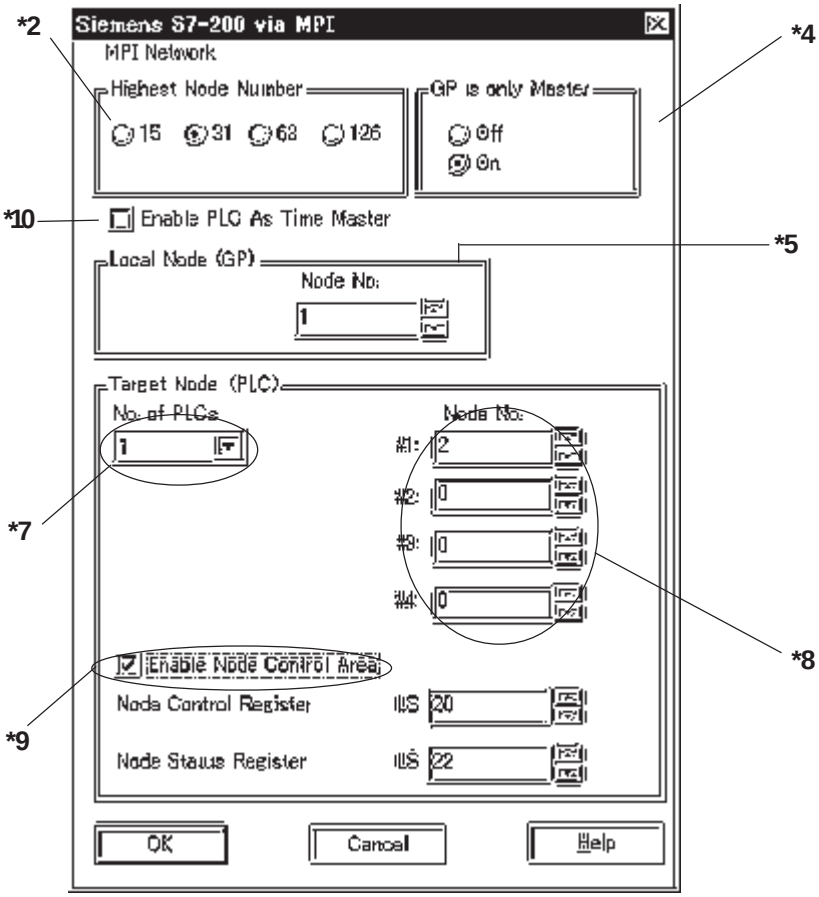
**9 When the checkbox is selected, the Node Control Area is enabled. Setting Range: LS20 to LS8910. The Node Control Register and the Node Status Register cannot use the same address. If they do, an input error will occur.*

For setting details, Reference ■ S7-200/S7-300/S7-400 Series Node Control Area.

**10 Selecting (check mark) this checkbox enables the Time Master settings. When the Time Master is enabled, the Time Interval set via the PLC over-writes the Master PLC's GP time data. Use the PLC's ladder software to perform master PLC settings.Select the [H/W Configuration] -> CPU menu's [Diagnostics Properties] -> Diagnostics/Clock feature. For details, refer to your PLC's Operation Manual.*

(Continued on next page.)

The following diagram is the Siemens S7-200 Series MPI Network setting window. This window is displayed by clicking on the [MPI Network] button in the [GP System Setup]-[Mode Settings] tab. The numbers in the diagram refer to the footnote numbers shown previously.



<SIMATIC S7-200 Series MPI Network Setting Window>

Be sure to perform MPI Network settings prior to performing MPI communication.

■ SIMATIC S7-300/400 Series (MPI Direct / MPI via adapter)

GP Setup				PLC Setup	
Baud Rate *1			19200 bps	Baud Rate *9	————
Data Length			8 bits (fixed)	————	————
Stop Bit			1 bit (fixed)	————	————
Parity Bit (when using adapter)			Odd (fixed)	————	————
Parity Bit (when using direct connection)			Even (fixed)	————	————
Data flow Control			ER (fixed)	————	————
Communication Format (MPI Direct Connection)			RS-422 (2-wire)	————	————
Communication Format (MPI via Adapter)			RS-232C	————	————
Highest Node No. *2 *3			31	Highest Address *3	31
Connection Method *4			via Adapter (fixed)	————	————
Enable NodeControl Area *10			OFF	————	————
Local Node (GP) *5			1	————	————
Target Node (PLC)	No. of PLCs *7		1	————	————
	Node Num *8	#1	2	MPI Address *6	2
		#2	Depending on the PLC MPI Address	MPI Address *6	0 to 126
		#3	Depending on the PLC MPI Address	MPI Address *6	0 to 126
		#4	Depending on the PLC MPI Address	MPI Address *6	0 to 126

*1 Baud Rate speed can be 19200bps or 187500bps depending on the PLC's unit baud rate. However, certain GP units cannot use the 187500bps speed.
Reference 2.16.1 System Structure ◆ Connectable GP/GLC units for SIMATIC S7-200/300/400 Series (MPI Direct).
If 187500bps is used with an incompatible GP Series unit, a Host Communication error (02:F2) will occur. Reference 2.16.5 Error Codes
When using an MPI via Adapter connection, Baud Rate speed can be 19200bps, 38400bps or 115200bps. However, when using another adapter, Baud Rate speed can only be 19200bps.

*2 15/31/63/126 can be selected. Be sure this setting is the same as the PLC unit's Highest Address setting.

*3 15/31/63/126 can be selected. On a single network, choose the value that is higher than the maximum value of the GP's Local Node or the PLC's MPI Address. For example, if the maximum value is 16, then select 31.Specify the smallest practical value for the maximum node address. This will shorten the time required for initializing the network.

*4 Set the Connection Method.

*5 Set the GP's unit number. Setting range is from 0 to 126, and the maximum number of GP units that can be connected is 3. Be sure this number is not used as a PLC's Node No.

**6 Set the PLC unit's node number. Setting range is from 0 to 126, and the maximum number of PLCs that can be connected is 4. Be sure this number is not used as a GP and another PLC unit's Node No.*

**7 Select the number of PLCs to use for data communication. Setting range is from 1 to 4.*

**8 Register the PLC's MPI Address. Depending on the No.of PLC setting, from #2 to #4 can be set. This setting can only be entered using the GP-PRO/PBIII software. The GP unit's OFFLINE mode cannot be used.*

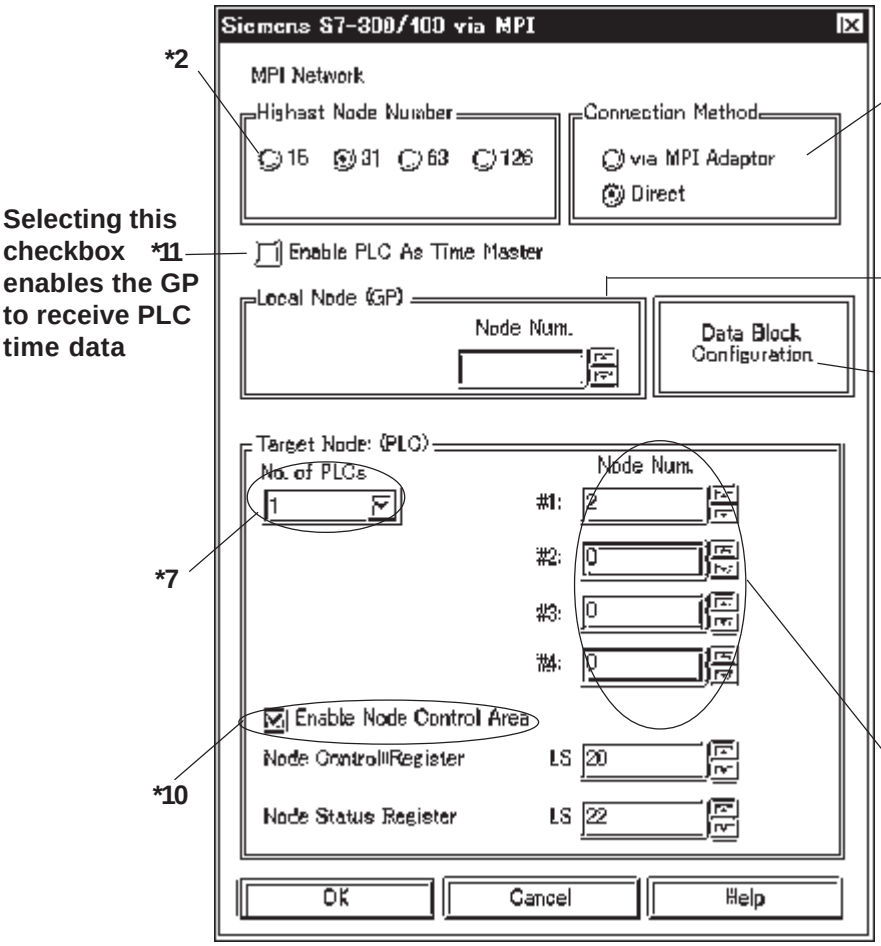
**9 The Baud Rate Setting is not required when using MPI via Adapter connection.*

**10 When the checkbox is selected, the Node Control Area is enabled. Setting Range: LS20 to LS8910. The Node Control Register and the Node Status Register cannot use the same address. If they do, an input error will occur. For setting details, Reference ■ S7-200/S7-300/S7-400 Series Node Control Area.*

**11 Selecting (check mark) this checkbox enables the Time Master settings. (The Time Master feature can only be used when the Connection method is Direct). When the Time Master is enabled, the Time Interval set via the PLC overwrites the Master PLC's GP time data. Use the PLC's ladder software to perform master PLC settings. Select the [H/W Configuration] -> CPU menu's [Diagnostics Properties] -> Diagnostics/Clock feature to perform the settings. For details, refer to your PLC's Operation Manual.*

Note:

The following diagram is Siemens S7-300/400 Series MPI Network setting window. This window is displayed by clicking on the [MPI Network] button in the [GP System Setup]-[Mode Settings] tab. The number in the diagram refers to the footnote number as shown above.



<SIMATIC S7-300/400 Series MPI Network Setting Window>

■ S7-200/S7-300/S7-400 Series Node Control Area

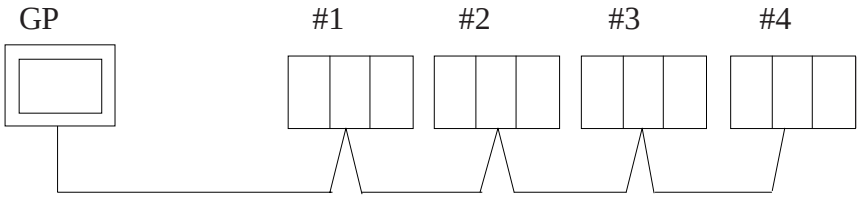
When multiple nodes (PLCs) are connected using an MPI direct connection, the Node Control feature allows you to control the GP unit's access of multiple nodes (PLCs).

<System Design>

In the following example 4 PLCs are connected to a single GP. If the PLC units all operate normally, data transfer is carried out smoothly.

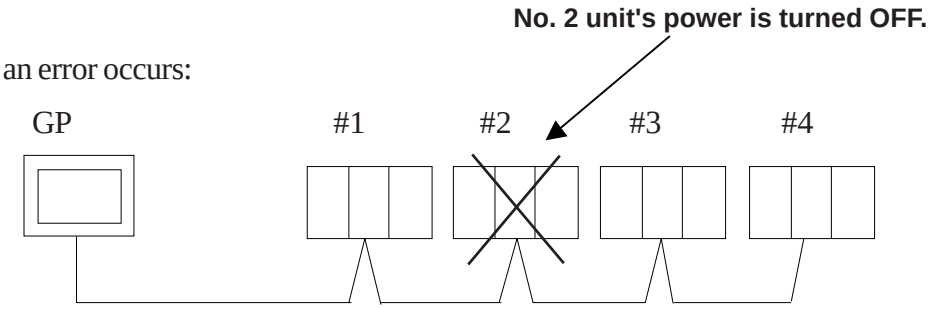
However, if one or more of the PLC units develops an error and is taken out of the network, any read/write tags used on the GP unit's screen will create a communication error. The resulting connection retries will then slow the performance of the network.

When all PLC units are operating normally:



Here readout processing is performed in order - #1 -> #2 -> #3 -> #4 -> #1 -> #2 , etc.

When an error occurs:



When unit #2's power is turned OFF, a communication error will occur. After the error occurs, the GP unit's communication retries will begin.

The processing pattern will then become #1 -> error processing -> #3 -> #4 -> #1 -> error processing, etc.

The error processing is continually trying to read out data, which will delay the overall speed by 1 cycle.

Using the Node Control feature, the Node Control Register's bit is used to control communication while the PLC is online.

When the above type of system is used, D-Script can be used to detect errors and turn the Node Control Area's bit OFF to stop communication with unit #2.

This, in turn, creates a readout pattern of #1 -> #3 -> #4 -> #1 -> #3, and so on that skips Node #2 completely and prevents the overall cycle time from slowing.

◆ Node Control Area Settings

Control of each Node is possible using the following LS bit operation allocated to the Node Control Area.

Reference For the setup procedure, see pg. 2-16-29, *9

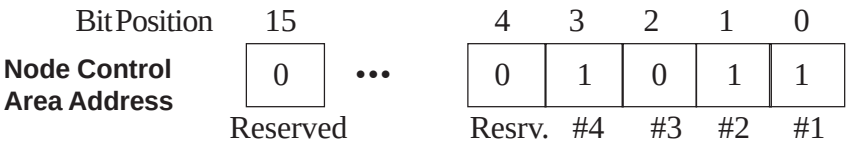
Also, in the Node Status Area the communication error's status can be checked.

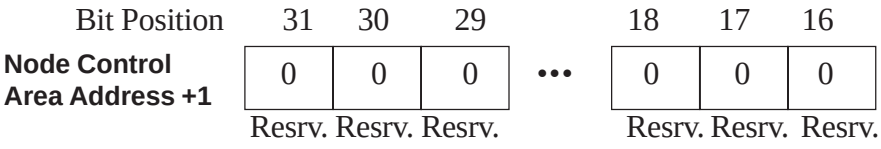
- Node Control Area Bit: 0: No communciation 1: Performing communication
- Node Status Area Bit: 0: No error 1: Error occurred

Node Control Area

Each bit is allocated to each Node. (Position 4 bit and onwards are reserved.)

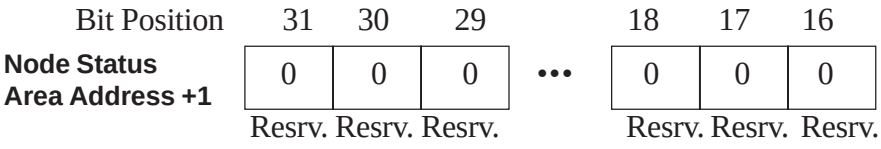
Ex. As shown below, Nodes #1, #2 and #4 are communicating normally with the GP. Node #3 is not communicating.





Node Status Area

Ex. As shown below, Nodes #1 and #4 developed a communication error.



■ SIMATIC S7-300/400 (Using Adapter< 3964/RK512>)

GP Setup		PC Link Unit Setup
Communication-format	RS-232C	---
Baud Rate	19200 bps	---
Data Bit	8 bits	---
Parity Bit	Even	---
Stop Bit	1 bit	---
Data Flow Control	ER Control	---

It is possible to enable/disable the Block Check Character (BCC) in communications between the PLC and the GP. This configuration can be performed via the Editor's [Mode] -> [Option] menu.

■ SIMATIC 505

GP Setup		PLC Settings	
Baud Rate	19200 bps	Baud Rate	19200 bps
Data Length	7 bits	Data Length	7bits (fixed)
Stop Bit	1 bit	Stop Bit	1bit (fixed)
Parity Bit	Odd	Parity Bit	Odd (fixed)
Data Flow Control	ER Control	————	————
Communication Format (RS-232C)	RS-232C	Communication Format (RS-232C)	Turn on the Dip Switch 1 on CPU.
Communication Format (RS-422)	RS-422 (4-wire type)	Communication Format (RS-422)	Turn on the Dip Switch 1 on CPU.

2.16.5 Error Codes

<MPI Error Codes>

An error code specific to the MPI is displayed in the lower left corner of the GP screen like "Host communication error (02:**:##)." ** stands for the error code specific to the MPI. ## stands for the Node No. of the PLC on which the error has occurred. Error Codes F0, F2 and F3 is not displayed the Node No. of the PLC

■ Error Codes

Error Code	Description
F0	The cable is not connected. The PLC's power is OFF.
F1	Unable to locate target node.
F2	GP does not support 187500bps data transfer speed.
F3	A Timeout has occurred on the MPI network.
F4	Failed to connect to Target Node.
F5	Designated device or address does not exist, or other similar problem.

7.6 Siemens PLC

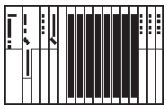
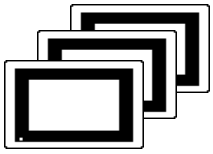
Important

With Siemens S7-300/400 Ethernet Protocol units, when the same project file is used on multiple GP/GLC units, the system may malfunction. When using multiple GP/GLC units, create and maintain only one unique project file for each GP/GLC unit.

7.6.1 Ethernet System Design

This section explains the system design for the Ethernet connection between Siemens PLCs and GP/GLC units.

■ Siemens SIMATIC S7-300/400 Series

CPU	Link I/F	Cables	GP/GLC
			
CPU312IFM CPU313 CPU314 CPU314IFM CPU315 CPU315-2DP CPU316 CPU316-2DP CPU318-2	CP 343-1 IT CP 343-1	Cable conforming to IEEE802.3	GP/GLC Series units *1
CPU412-1 CPU412-2DP CPU413-1 CPU413-2DP CPU414-1 CPU414-2DP CPU414-3DP CPU416-1 CPU416-2DP CPU416-3DP CPU417-4	CP 443-1 IT CP 443-1		

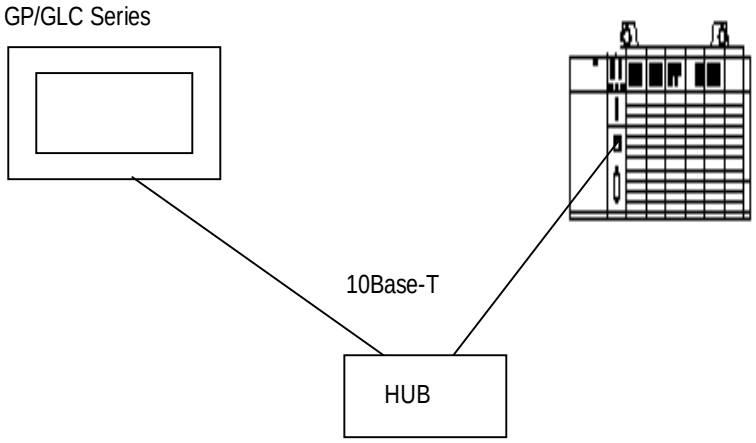
**1 Refer to the next page for compatible GP/GLC units.*

■ Compatible GP/GLC Types

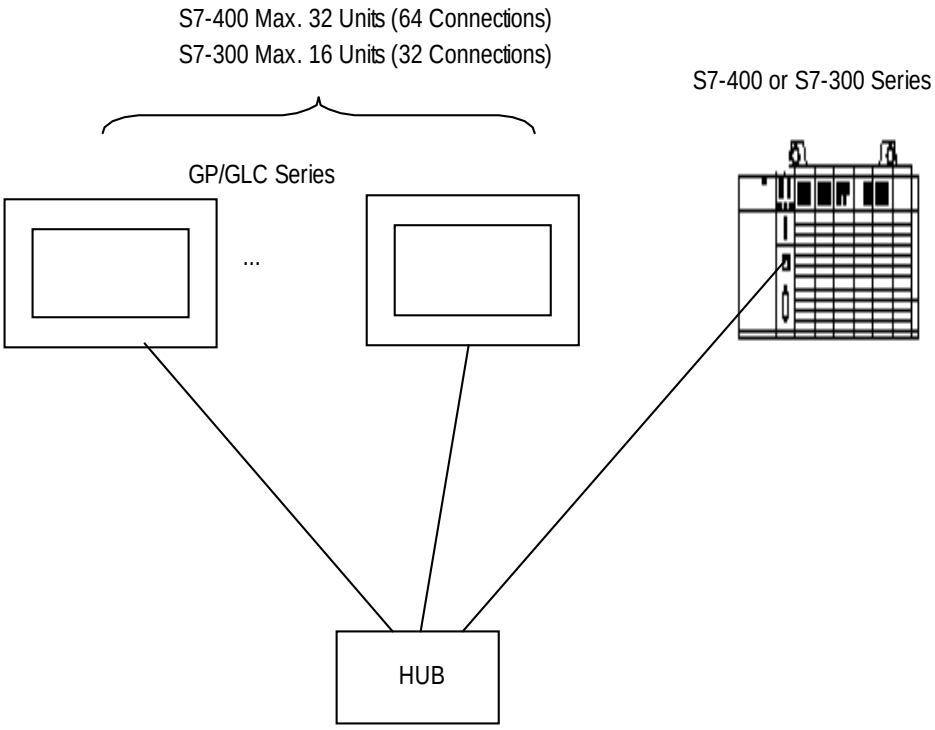
Series Name		Model	Support
GP2000 Series	GP-2300	GP-2300T	❍
		GP-2300L	❍
		GP-2300S	❍
	GP-2400	GP-2400T	❍
	GP-2500	GP-2500T	❍
		GP-2500S	❍
		GP-2500L	❍
	GP-2501	GP-2501T	X
		GP-2501S	X
	GP-2600	GP-2600T	❍
	GP-2601	GP-2601T	X
GLC2000 Series	GLC2000	GLC2400T	❍
		GLC2300T	❍
		GLC2300L	❍
		GLC2500T	❍
		GLC2600T	❍

■ Connection Structure

■ 1:1 Connection



■ n:1 Connection



Note:

- **The Max. No. of units indicated is when only GP Series units are connected. Connecting a single GP Series unit requires two connections.**
- **Connecting other devices via an ethernet connection will further reduce the maximum number of GP Series units that can be connected. Be sure to check the number of connections required before connecting a device. Also, since the number of usable connections vary depending on the PLC model, be sure to refer to your PLC Manual for details.**

7.6.2 Supported Devices

The following list shows the range of devices supported by the GP/GLC.

■ SIMATIC S7-300/S7-400 Series

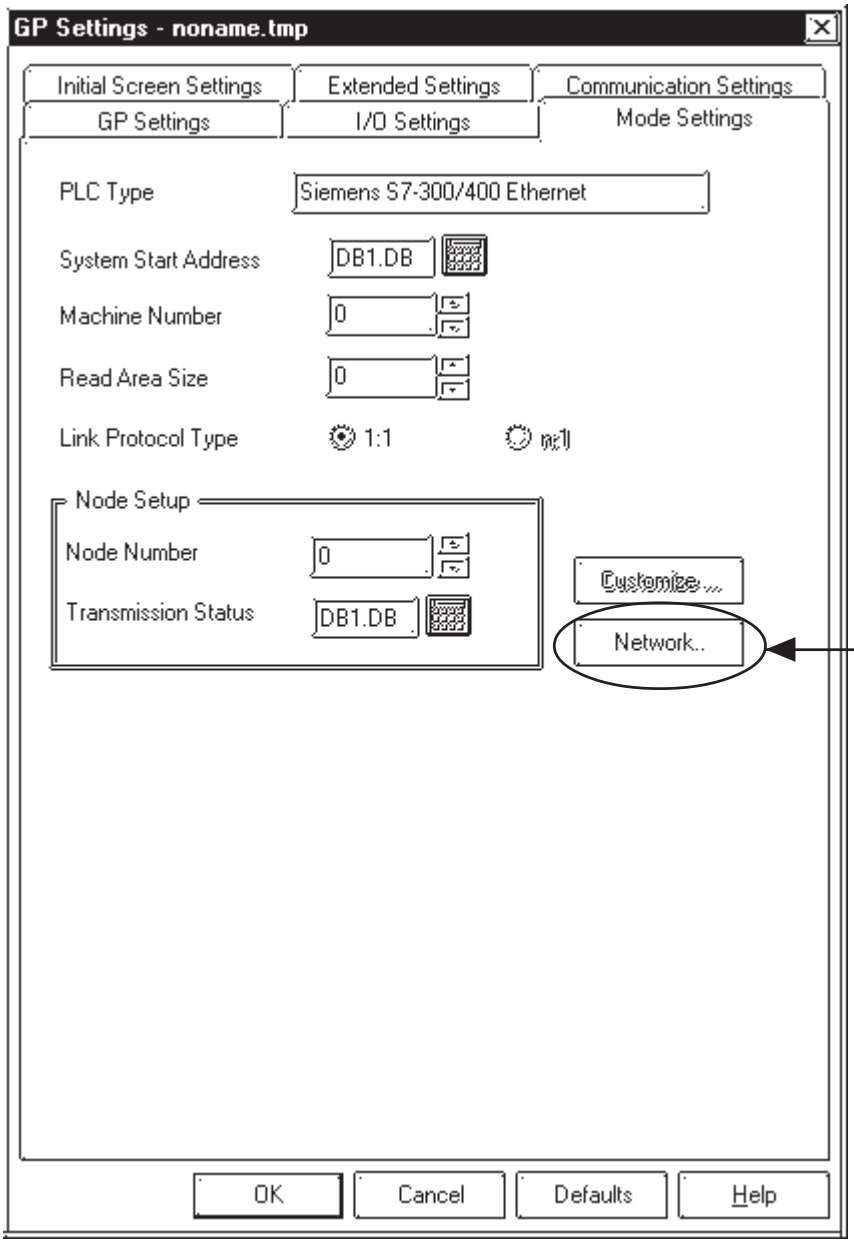
Setup System Area here

Device	Bit Address	Word Address	Particulars	
Input	E000.0 ~ E127.7	EW000 ~ EW126	÷ 2	H/L
Output	A000.0 ~ A127.7	AW000 ~ AW126	÷ 2	
Internal	M000.0 ~ M255.7	MW000 ~ MW254	÷ 2	
Timer	————	T000 ~ T127	*1	
Counter	————	Z00 ~ Z63	*1	
Data Block	DB1.DBX0.0 ~ DB255.DBX65533.7	DB1.DBW0 ~ DB255.DBW65532	÷ 2 *2	

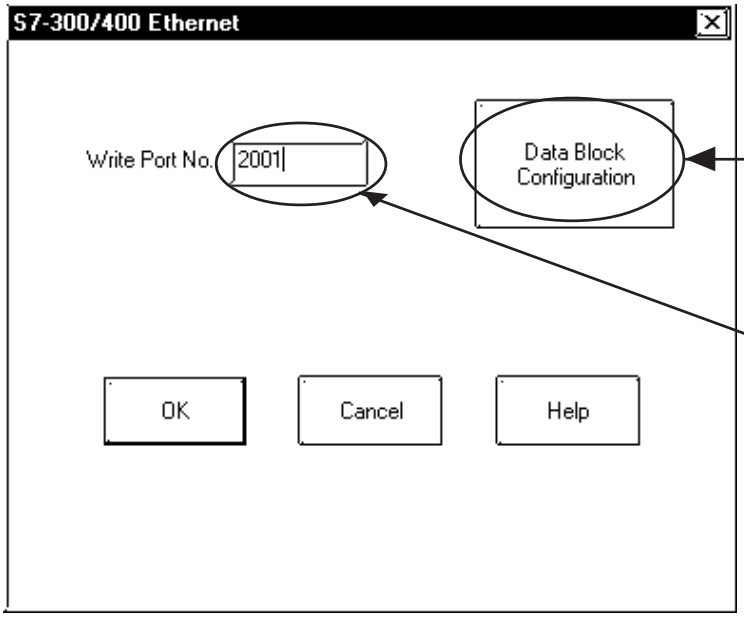
**1 Data Write is not possible. When writing to this device, the "Host Communication Error (02:FB)" is displayed.*

**2 Only block numbers that have already been registered via the screen editor's [GP Setup] -> [Mode Settings] -> [Network] -> [Data Block Configuration] feature can be used for the Data Block. A maximum of 40 blocks can be set up at a time.*

- **Mode Settings**



Write Port No. and Data Block Configuration settings

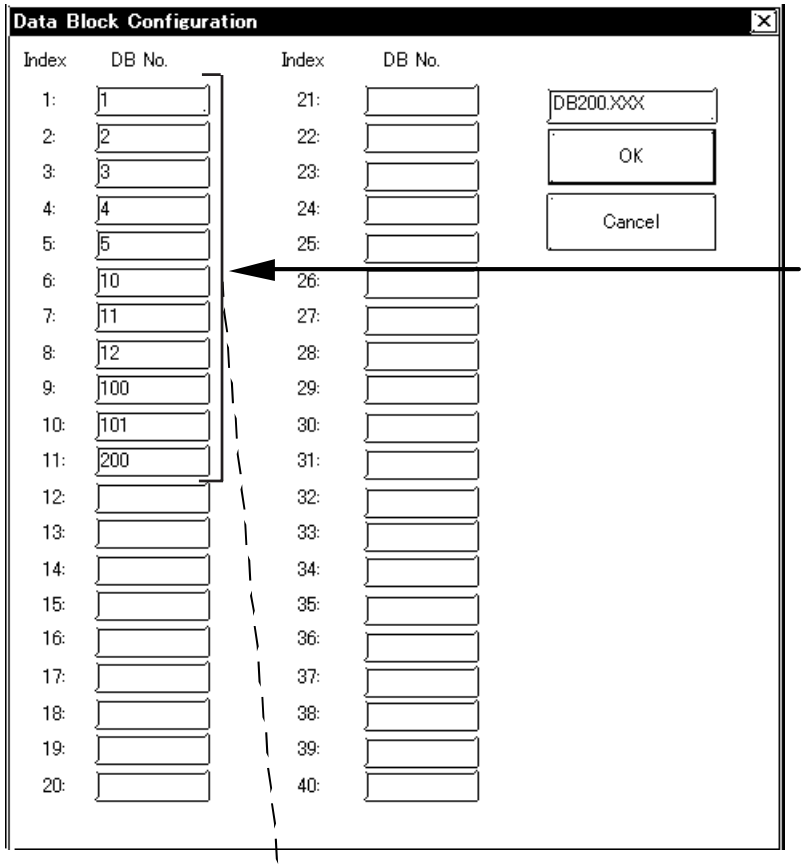


Data Block Configuration settings

Write Port No. settings.
Input Range:
1024 to 65535
Default: 2001

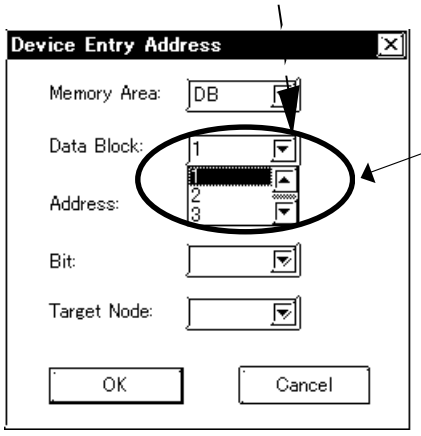
- **Data Block Configuration Settings**

The [Data Block Configuration] screen allows you to designate the Data Block Nos. to be used on your GP unit. A maximum of 40 blocks can be set up at a time. Adressed can be designated only for Data Block Nos. set up via this screen.



Set up the Data Block No. you want to use.

<When setting the tag address>



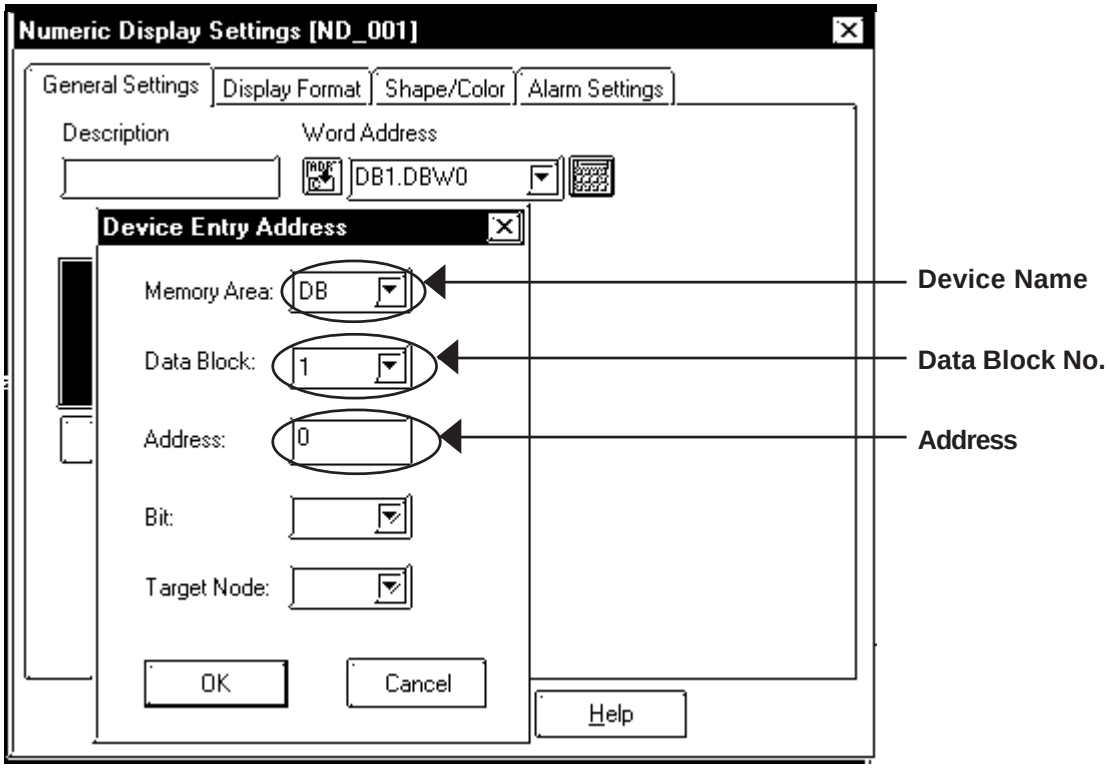
Only the Data Block Nos. set up via the above screen are displayed here.

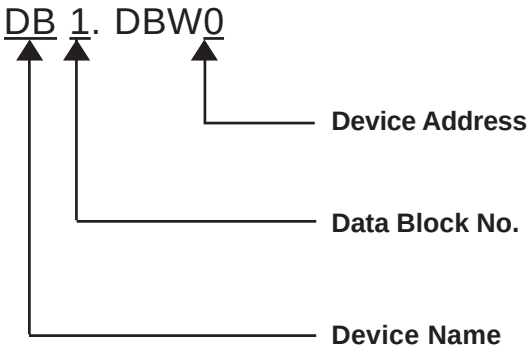
Important

- ***Pro-Server Usage Restrictions: When accessing devices from Pro-Server, be sure to symbolically define the device address you want to access. Create a screen and import the symbol to this screen via Pro-Server. For details,***
  Reference *your Pro-Server Operation Manual*
- ***When connecting to multiple GP units, be sure to set the starting address such that no GP unit's system area overlaps with that of the other.***

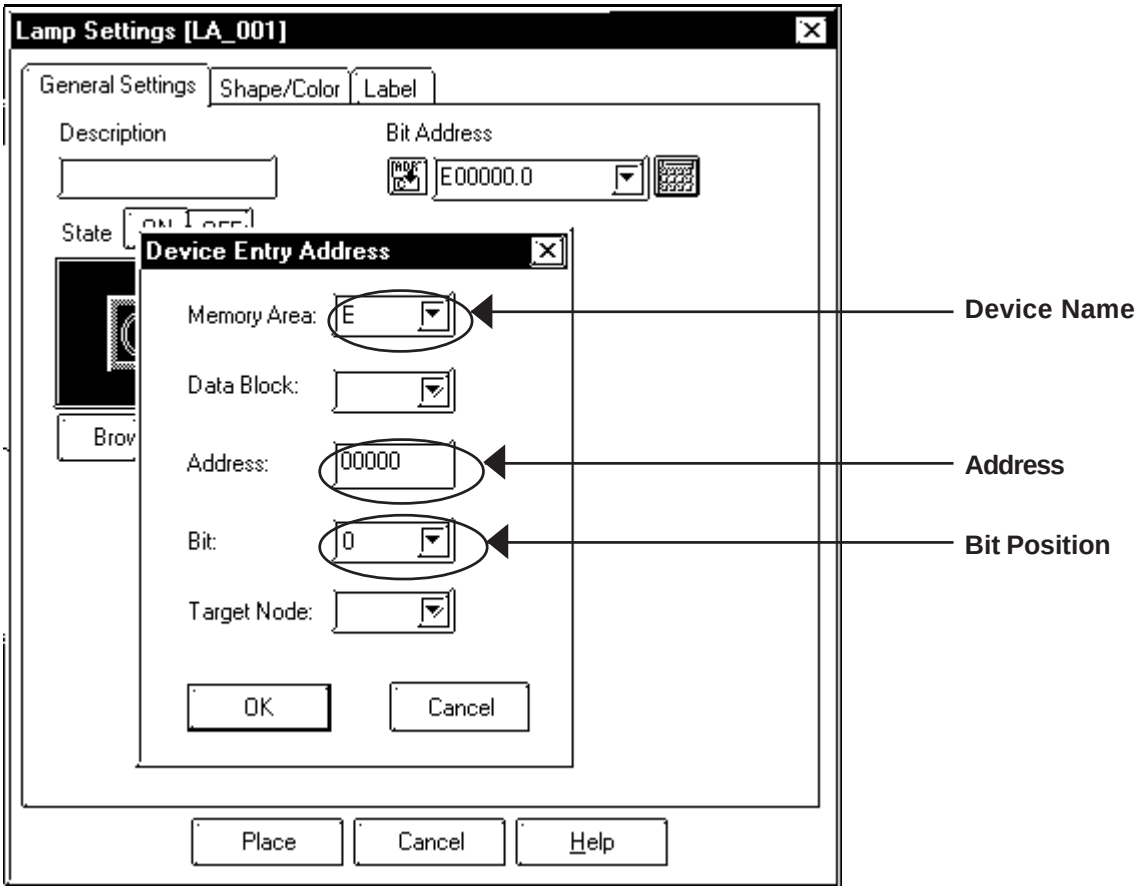
◆ **Part and Tag Settings**

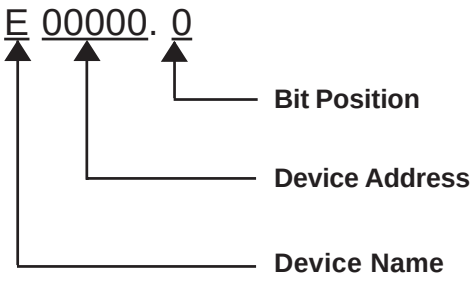
- **Word Devices**





- **Bit Devices**


Lamp Settings [LA_001]
General Settings
Shape/Color
Label
Description
Bit Address
E00000.0
State
Device Entry Address
Memory Area:
E
Data Block:
Address:
00000
Bit:
0
Target Node:
OK
Cancel
Place
Cancel
Help
Device Name
Address
Bit Position


E 00000. 0
Bit Position
Device Address
Device Name

7.6.3 Environment Setup

The following table lists the recommended GP/GLC communication settings required for ethernet communication.

GP Settings		PLC Settings *3	
SRC IP Address	GP's IP Address *1	Partner: IP address	GP's IP Address *1
SRC Port No.	GP's Port No. *2	Partner: Port	GP's Port No. *2
DEST IP Address	PLC's IP Address *1	Local: IP address	PLC's IP Address
DEST Port No.	PLC's FETCH Port No.	FETCH port No.	PLC's FETCH Port No.
Write Port No.	PLC's Write Port No.	Write Port No.	PLC's Write Port No.

**1 Contact your network administrator for setting values.*

**2 When using the following functions on a GP2000 or GLC2000 series unit, be sure not to use duplicate port number values. Check the 2-way driver's port number setting via the following menu:*

GP/GLC OFFLINE mode's [INITIALIZE] -> [SETUP OPERATION SURROUNDINGS] -> [EXTENDED SETTINGS] -> [SETUP ETHERNET INFORMATION].

The default value is 8000. The 2-way driver uses this port and the following nine ports for a total of 10 (8000 ~ 8009).

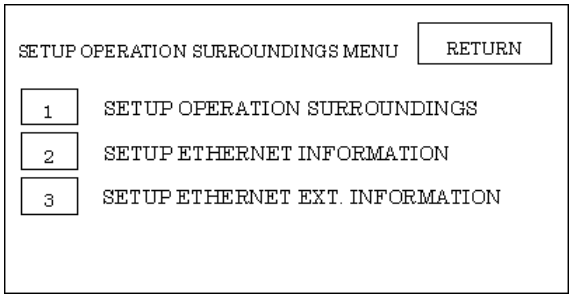
**3 Perform PLC settings via the NetPro ladder software.*

Port number's offset	Function
+1	For MtoMLan (GP-PRO/PBIII for Windows Screen Transfer)
+2	For ProNet (Pro-Server with Pro-Studio for Windows)
+3	Reserved
+4	For GP-Web
+5	Reserved
+6	For Pro-Control Editor
+7	Reserved
+8	For GP-PRO/PBIII for Windows Simulation
+9	Reserved

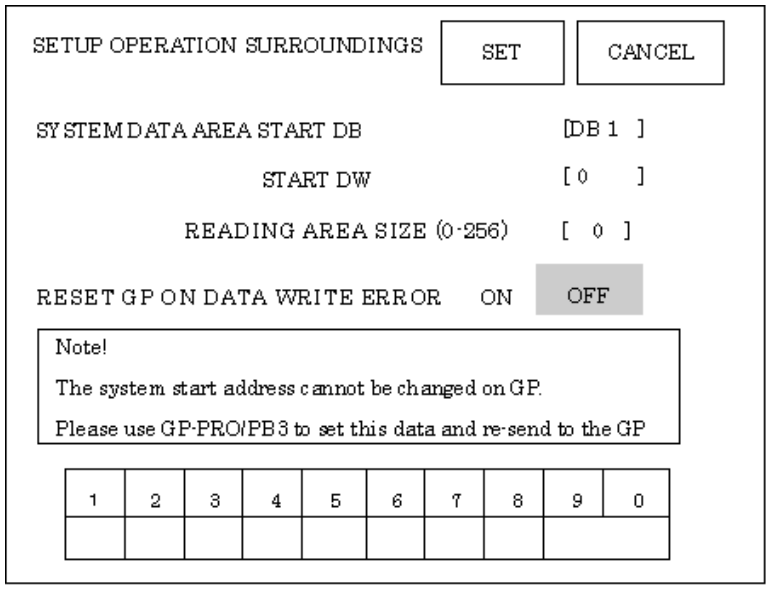
The communication format used is TCP (fixed).

■ GP Setup Operation Surroundings Menu (OFFLINE)

The following screens show the GP unit settings necessary for communication via ethernet connection.

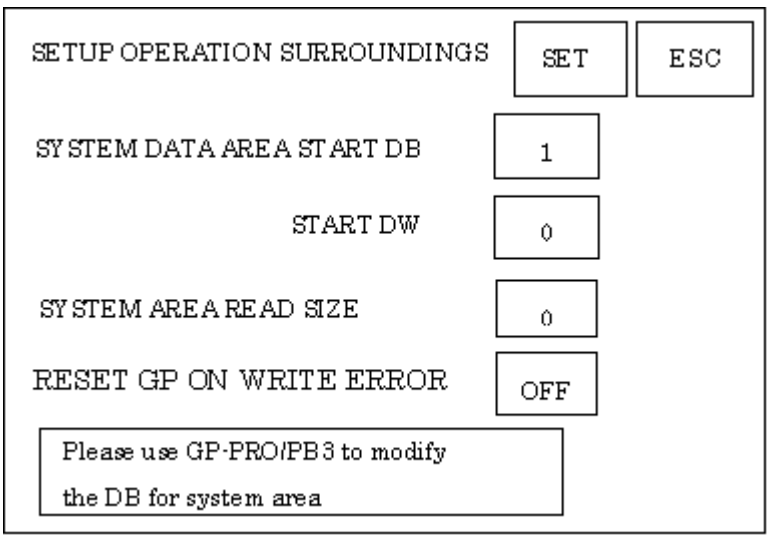


◆ Operation Surroundings Setup (Large-sized GP)

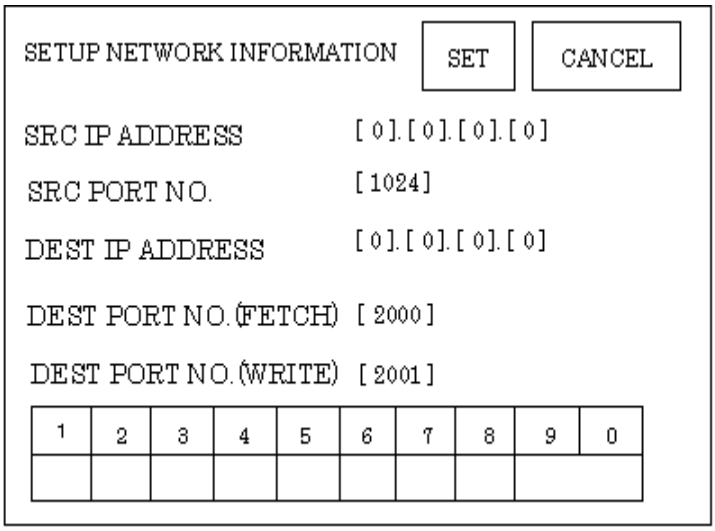


System Area related settings and On Data Write Error settings are performed via this menu. The system area start address cannot be changed via the GP unit. Be sure to use GP-PRO/PBIII Screen Editor software to change this data and resend it to the GP unit.

- **Operation Surroundings Setup (Medium-sized GP)**



◆ **Ethernet Information Settings**



- **SRC IP ADDRESS**

  Enter the IP address for the GP at your station. To do this, separate the 32 bits of the IP address into four segments of eight bits each, delimit those segments with a dot, and then enter them as decimal numbers.

- **SRC PORT NO.**

  Enter your station port number in the range from 1024 to 65535.

- **DEST IP ADDRESS**

  Enter the IP address of the other station (PLC).

- **DEST PORT NO. (FETCH)**

  Enter the FETCH Port No. of the PLC in the range from 1024 to 65535.

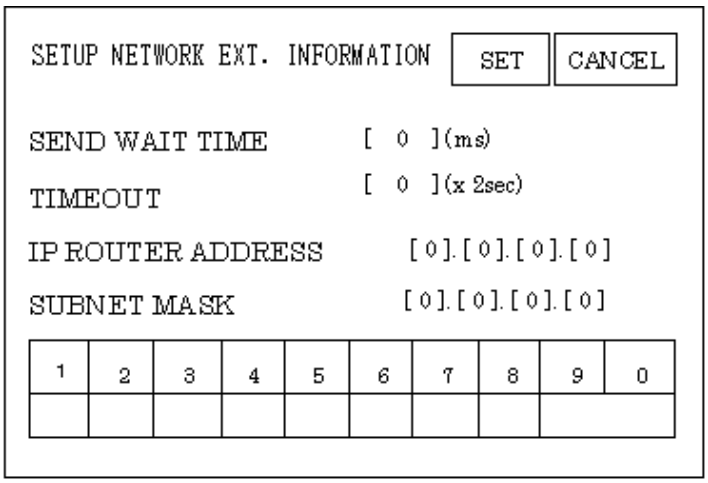
- **DEST PORT NO. (WRITE)**

  Enter the WRITE Port No. of the PLC in the range from 1024 to 65535.

When using the GP2000/GLC2000 series unit's built-in ethernet port, be sure the SRC IP ADDRESS value is not the same as the 2-Way driver's port number. The 2-Way driver's port number setting can be checked via GP OFFLINE mode's [INITIALIZE] -> [SETUP OPERATION SURROUNDINGS] -> [EXTENDED SETTINGS] -> [SETUP ETHERNET INFORMATION].

The default value is 8000. The 2-Way driver uses this port and the following nine ports for a total of 10 (8000 ~ 8009). If the SRC IP ADDRESS is 0.0.0.0, the IP address set up via the 2-Way driver's [SETUP ETHERNET INFORMATION] will be enabled.

◆ **Ethernet Information Extended Settings**



- **SEND WAIT TIME**

  Wait time can be added when a command is transmitted from the GP. Use the wait time if the traffic on the communications line is heavy. If no wait time is required, enter "0".

- **TIMEOUT**

  Enter the desired timeout value. If no response is received from the other station within the specified time, a timeout occurs. If "0" is specified, the default time is 15 seconds when it is TCP communication, and is 5 seconds when it is UDP communication.

- **IP ROUTER ADDRESS**

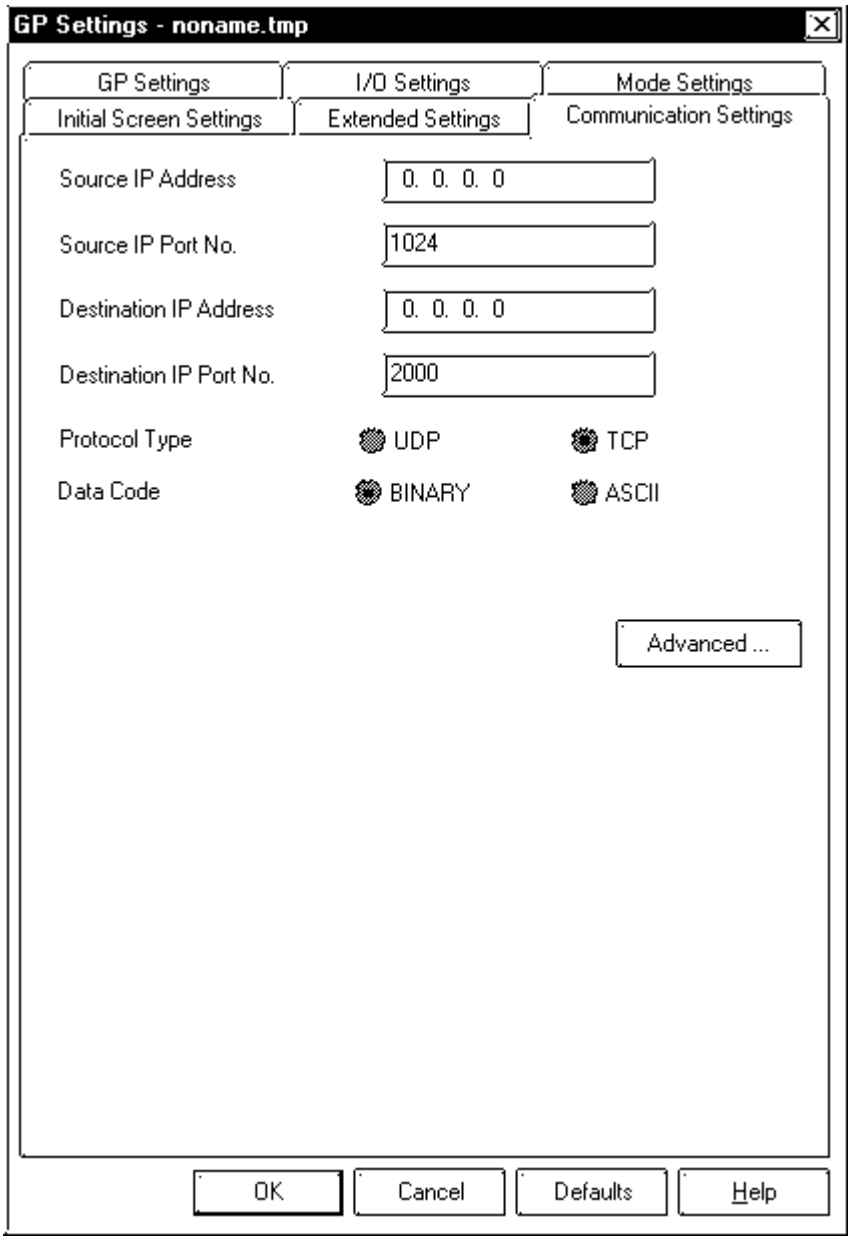
  Enter the IP address of the router (only one). If no router is used, enter "0" in all fields.

- **SUBNET MASK**

  Enter subnet masks. If no subnet mask is used, enter "0" in all fields.

■ Screen Editor Settings

Screen Editor settings are performed via the [GP Setup] -> [Communication Settings] feature. The setting items are described below.



- **Source IP Address**

  Enter the IP address for the GP at your station. To do this, separate the 32 bits of the IP address into four segments of eight bits each, delimit those segments with a dot, and then enter them as decimal numbers.

- **Source IP Port No.**

  Enter your station port number in the range from 1024 to 65535.

- **Destination IP Address**

  Enter the IP address of the other station (PLC).

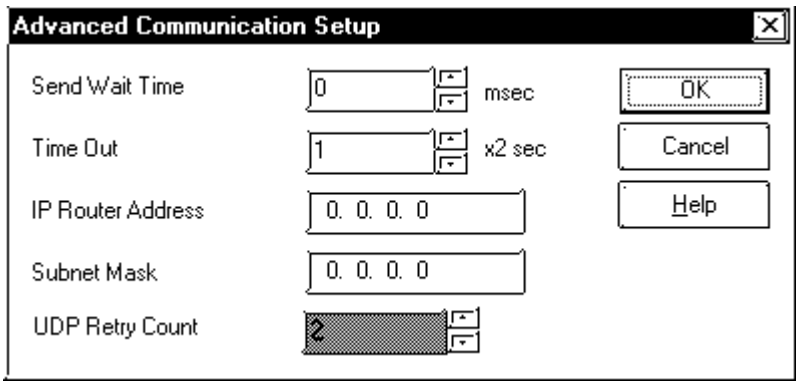
- **Destination IP Port No.**

  Enter the FETCH Port No. of the PLC in the range from 1024 to 65535. Default: 2000.

Note: **Protocol Type and Data Code settings cannot be performed.**

◆ Advanced Communication Setup

The [Advanced Communication Setup] screen is as shown below.



- **Send Wait Time (0 to 255)**

  Wait time can be added when a command is transmitted from the GP. Use the wait time if the traffic on the communications line is heavy. If no wait time is required, enter "0".

- **Time Out (0 to 65535)**

  Enter the desired timeout value. If no response is received from the other station within the specified time, a timeout occurs. If "0" is specified, the default time is 15 seconds.

- **IP Router Address**

  Enter the IP address of the router (only one). If no router is used, enter "0" in all fields.

- **Subnet Mask**

  Enter subnet masks. If no subnet mask is used, enter "0" in all fields.

Note: **UDP Retry Count value setting cannot be performed.**

7.6.4 Error Codes

■ PLC SPECIFIC ERROR CODES

PLC error codes are displayed in the left lower corner of the GP screen in the format shown below. ** indicates PLC specific error codes.

Host Communication Error (02:)**

Error Code	Cause
09	Trying to read data from / write data to a non-existing PLC address.

7.9 Protocol Stack Error Codes

Protocol Stack Error Codes are displayed on the GP as follows.

Host communication error (02:FE:**)

** represents one of the following error codes, from 00 to F0.

Error Code	Description	Notes
00	There is a setup error related to the IP address of your station at initialization.	
05	Initialization has failed.	
06	Cancelling of communications has failed.	
07	An attempt was made to establish a connection before initialization was successfully completed.	
08	Your station's port number is incorrect	
09	The destination station's port number is incorrect.	
0A	The IP address of the other station is incorrectl.	
0B	The same port number is already being used by UDP for establishing the connection.	
0C	The same port number is already being used by TCP for establishing the connection.	
0D	Protocol stack has refused connection establishment.	
0E	Protocol stack has returned the unsuccessful establishment of a connection.	
0F	The connection has been shut down.	
10	All connections are busy. No connection is available.	
13	Your station was aborted by a different station.	
30	There was no reply from the protocol stack.	
32	There was no reply from the other station.	*1 *2
40	No network infofmation exists for the designated node.	*1
41	I/O memory type of the random read-out response data is incorrect.	*1
42	Network information does not exist.	
F0	Undefined error.	

*1 When using an OMRON Corporation CS1/CJ/CJ1M Series unit, the error code will appear on the GP screen as shown below. Also, behind the Ethernet error code will appear the designated Network and Node addresses.

Host Communication Error (02:FE:**:###:###)

- Node Address (Decimal)
- Network Address (Decimal)
- Ethernet Error Code (Hex)

*2 When using a Hitachi Industrial Equipment Corporation's HIDIC H Series or a Schneider Corporation MODBUS TCP unit, the error code will appear on the GP screen as shown below. Also, behind the Ethernet error code will appear the designated Node address.

Host Communication Error (02:FE:**:###:###)

- Node Address (Decimal)
- Ethernet Error Code (Hex)