YASKAWA Electric Corporation

# MEMOBUS Ethernet Driver

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5	Supported Device	
6	Device Code and Address Code	
7	Error Messages	

#### 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:

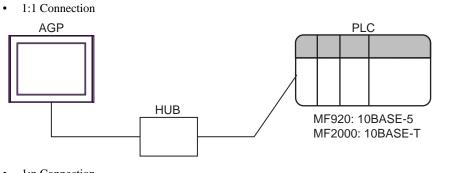
1	System Configuration This section shows the types of External Devices which can be connected and SIO type.	"1 System Configuration" (page 3)
2	Selection of External Device Select a model (series) of the External Device to be connected and connection method.	"2 Selection of External Device" (page 5)
3	Example of Communication Settings This section shows setting examples for communicating between the Display and the External Device.	"3 Example of Communication Setting" (page 6)
4	Setup Items This section describes communication setup items on the Display. Set communication settings of the Display with GP-Pro EX or in off-line mode.	"4 Setup Items" (page 36)
		·
	Operation	

# 1 System Configuration

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

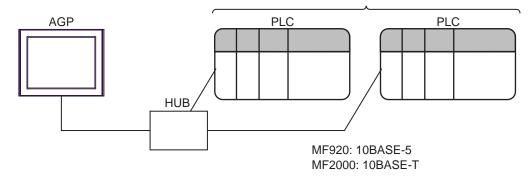
Series	CPU	Link I/F	Interface	Setting Example
MP900	0 MP920 Ethernet port on 218IF-01 (10BASE-5)		Ethernet (TCP)	Setting Example 1 (page 6)
WI 900		Ethernet (UDP)	Setting Example 2 (page 10)	
		Ethernet port on 218IF-01	Ethernet (TCP)	Setting Example 3 (page 14)
	MP2300	Ellernet port on 21011-01	Ethernet (UDP)	Setting Example 4 (page 18)
	MP2200	Ethernet port on 218IF-02	Ethernet (TCP)	Setting Example 1 (page 6)         Setting Example 2 (page 10)         Setting Example 3 (page 14)         Setting Example 4
		Ellernet port on 21011-02	Ethernet (UDP)	
		Ethernet connector on CPU unit	Ethernet (TCP)	(page 32) Setting Example 5 (page 22) Setting Example 6
MP2000		Ethernet (UDP)		
WII 2000	MP2310	Ethernet port on 218IF-01		
	MP2300S	Ethernet port on 21611-01	Ethernet (UDP)	
			Ethernet (TCP)	
		Ethernet port on 218IF-02	Ethernet (UDP)	
		Ethernet connector on CPU unit	Ethernet (TCP)	
	MP2400	Earemet connector on Cr O unit	Ethernet (UDP)	

## Connection Configuration



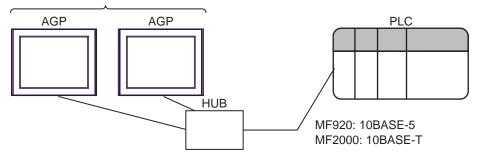
1:n Connection

The max number of PLC : n \*1



- \*1 The maximum 32 PLCs connection by UDP connection, the maximum 16 PLCs connection by TCP connection.
  - n:1 Connection

The max number of AGP : 10



# 2 Selection of External Device

Select the External Device to be connected to the Display.

💰 New Project File					×
GP-Pro	Device/PL	C			
	Maker	YASKAWA Electric C	orporation		•
	Series	MEMOBUS Ethernet			-
	🗖 Use S	ystem Area	E	efer to the manual of th	is Device/PLC
	Connection	n Method			
	Port	Ethernet (UDP)	•		
				<u>Go to De</u> r	vice/PLC Manual
Back	( <u>B)</u> Cor	mmunication Settings	New Logic	New Screen	Cancel

Setup Items	Setup Description		
Maker	Select the maker of the External Device to be connected. Select "YASUKAWA Electric Corporation".		
Driver	Select a model (series) of the External Device to be connected and connection method. Select "MEMOBUS Ethernet". Check the External Device which can be connected in "MEMOBUS Ethernet" in system configuration.		
	Check this option to synchronize the system data area of the Display and the device (memory) of the External Device. When they are synchronized, you can use the ladder program of the External Device to switch the display or to display a window on the Display.		
Use System Area			
	This can also be set in GP-Pro EX or in the Display's off-line mode.		
	Cf. GP-Pro EX Reference Manual "5.17.6 [System Settings] Setting Guide, [Display Unit] Settings Guide, System Area Settings"		
	Cf. Maintenance/Troubleshooting Manual "2.15.1 Settings common to all Display models, [Main Unit Settings] Settings Guide, 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/PLC1	
Summary	Change Device/PLC
Maker VASKAWA Electric Corporation Driver MEMOBUS Ethernet	Port Ethernet (TCP)
Text Data Mode 1 Change	
Communication Settings	
Port No. 1024 📻 🔽 Auto	
Timeout 3 💼 (sec)	
Retry D	
Wait To Send 🛛 📑 (ms) Default	
Device-Specific Settings	
Allowable No. of Device/PLCs 16 Unit(s) 🔢	
No. Device Name Settings	
1 PLC1 IIP Address=192.168.001.001,Port No.=1024,	Data Lode=BINAHY

#### Device Setting

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

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

💰 Individual D	evice Settings		×	
PLC1				
IP Address 192. 168. 1. 1 Port No. 1024				
Diata Code	BINARY	O ASCII	Default	
		OK ( <u>0</u> )	Cancel	

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the display in the off-line mode of the display.

Communication setting of communication module 218IF by ladder software. (Check the operation in MPE720 Version5.32)

- Ladder Software Setting
- 1 Start ladder software, make an order folder and a PLC folder in a root folder.

Select the connected PLC at the time of PLC folder making.

2 Click the right button of the PLC which select logon in the displayed menu.

**NOTE** • Logon after confirming that a check does not begin [online] of a displayed menu.

• Refer to User's Manual of the PLC about a method of logon.

- **3** Double-click the [Definition folder]-[Module constitution] of the PLC folder, and display [Engineering Manager].
- 4 Select the rack classification and link I/F, the pull-down menu in [Controller] of [Engineerring Manager]. Set the number corresponding to the slot number that a communication module uses. Select the communication module, setting contents are displayed to [Module details] of [Enginnering Manager].
- 5 Double-click the number part at No. in [Module details].

Double-click the slot number connecting the ethernet unit.

Setur	Setup Description	
Transmission parameter	This Station IP address	PLC IP address
Connection parameter	My Port	PLC port No.
	DST. IP Address <sup>*1</sup>	GP-Pro EX IP address
	DST. Port <sup>*1</sup>	GP-Pro EX port No.
Connection parameter	Connection type	ТСР
	Protocol type	expansion memobus
	Code	BIN

\*1 When you check the [Auto] of a port number in the communication setting of the GP-Pro EX, set the IP address and the port number to "0.0.0.0" and "00000", respectively.

6 Double-click the "No.00", and set serial communication.

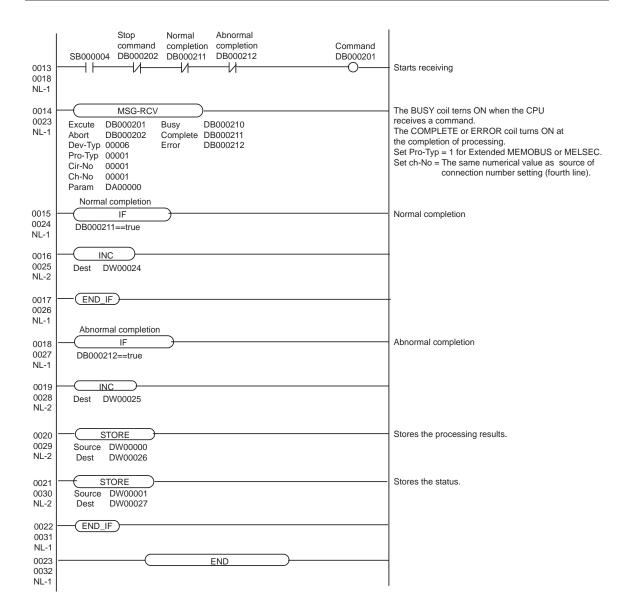
Use serial communication setting to forward communication setting and the ladder program to the PLC.

- 7 Save setting content and finish [Engineering Manager].
- **8** Make the communication ladder "high speed drawing".
  - \*\* Adder Program for Communication" (page 8)
- **9** Turn the DIP switch "INIT" of a communication module to ON, and supply the power.
- 10 Forward communication setting and a ladder program to a communication module.
- **11** Log on the PLC in online and write the transferred data to the flash memory.
- 12 Turn the PLC power and the INIT DIP switch to OFF. Then, turn the PLC power to ON.

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Please refer to the manual of the ladder software for more detail.

#### Ladder Program for Communication

	First scan after startup	
0000	IF	Sets parameters in the first scan after startup.
0000	SB000001==true	(Low-speed scan (DWG L): SB000003 High-speed scan (DWG H): SB000001)
NL-1		High-speed scall (DWG H). SB000001)
0004		Clears DWG registers to zero.
0001 0001	FOR	Clears Dwg registers to zero.
NL-2	∨ariable I Init 00000	
112 2	Max 00031	
	Step 00001	
0002	(STORE)	
0002 NL-3	Source 00000	
INL-3	Dest DW000001	
0003	(END_FOR)	
NL-2		
INL-2		
0004	STORE )	Sets the connection number.
0004	Source 00001	
NL-2	Dest DW00002	
0005	STORE	Sets the coil offset.
0005	Source 00000	
NL-2	Dest DW00008	
0006	(	Sets the input relay offset.
0006	Source 00000	
NL-2	Dest DW00009	
0007	- STORE	Sets the input register offset.
0007	Source 00000	
NL-2	Dest DW00010	
8000	(STORE)	Sets the holding register offset.
8000	Source 00000	
NL-2	Dest DW00011	
0009	STORE	Wright range: LO
0009	Source 00000	
NL-2	Dest DW00012	
0010		Wright range: HI
0010	Source 0000065534	
NL-2	Dest DW00013	
0011	END_IF	
0011		
NL-1		
		I. I



## 3.2 Setting Example 2

- Settings of GP-Pro EX
- Communication Settings

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

Device/PLC 1	
Summary Change Device/PLC	
Maker VASKAWA Electric Corporation Driver MEMOBUS Ethernet Port Ethernet (UDP)	
Text Data Mode 1 Change	
Communication Settings	
Port No. 1024 📑	
Timeout 3 😑 (sec)	
Retry 2	
Wait To Send 0 📑 (ms) Default	
Device-Specific Settings	
Allowable No. of Device/PLCs 32 Unit(s) 📊	
No.         Device Name         Settings           1         PLC1         IP Address=192.168.001.001,Port No.=1024,Data Code=BINARY	_

#### Device Setting

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

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

💕 Individual D	evice Settings		×
PLC1			
IP Address Port No.	192. 168. 1024	1. 1	
Data Code	BINARY	O ASCII	Default
		OK ( <u>O</u> )	Cancel

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the display in the off-line mode of the display.

Communication setting of communication module 218IF by ladder software. (Check the operation in MPE720 Version5.32)

- Ladder Software Setting
- 1 Start ladder software, make an order folder and a PLC folder in a root folder.

Select the connected PLC at the time of PLC folder making.

2 Click the right button of the PLC which select logon in the displayed menu.

**NOTE** • Logon after confirming that a check does not begin [online] of a displayed menu.

• Refer to User's Manual of the PLC about a method of logon.

- **3** Double-click the [Definition folder]-[Module constitution] of the PLC folder, and display [Engineering Manager].
- 4 Select the rack classification and link I/F, the pull-down menu in [Controller] of [Engineerring Manager]. Set the number corresponding to the slot number that a communication module uses. Select the communication module, setting contents are displayed to [Module details] of [Enginnering Manager].
- 5 Double-click the number part at No. in [Module details].

Double-click the slot number connecting the ethernet unit.

Setup	Setup Description	
Transmission parameter	This Station IP address	PLC IP address
	My Port	PLC port No.
Connection parameter	DST. IP Address	GP-Pro EX IP address
	DST. Port	GP-Pro EX port No.
	Connection type	UDP
	Protocol type	expansion memobus
	Code	BIN

6 Double-click the "No.00", and set serial communication.

Use serial communication setting to forward communication setting and the ladder program to the PLC.

- 7 Save setting content and finish [Engineering Manager].
- 8 Make the communication ladder "high speed drawing".

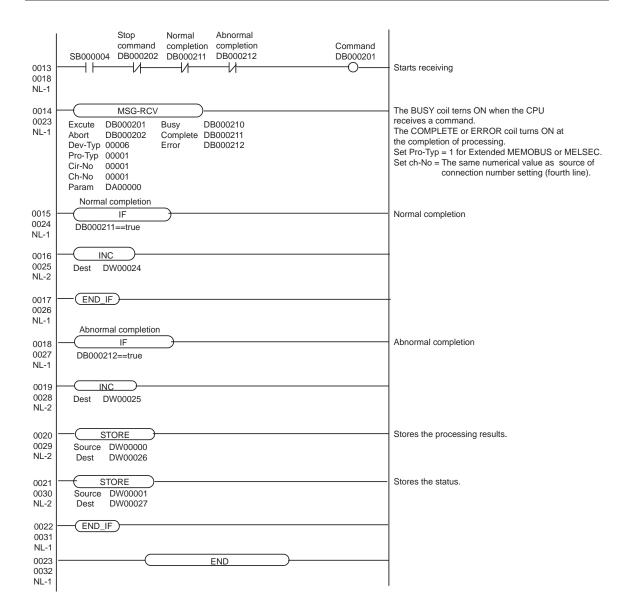
\*\* Adder Program for Communication" (page 12)

- **9** Turn the DIP switch "INIT" of a communication module to ON, and supply the power.
- 10 Forward communication setting and a ladder program to a communication module.
- **11** Log on the PLC in online and write the transferred data to the flash memory.
- 12 Turn the PLC power and the INIT DIP switch to OFF. Then, turn the PLC power to ON.

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Please refer to the manual of the ladder software for more detail.

#### Ladder Program for Communication

First scan after startup         Sets parameters in the first scan after startup. (Low-speed scan (DWG L): SB00001 High-speed scan (DWG H): SB00001)           0001         FOR Variable I Init 00000 Max 00031 Step 00001         Clears DWG registers to zero.           0002         STORE Source 00000 Dest DW000001         Clears DWG registers to zero.           0003         END_FOR         Sets the connection number.           0004         STORE Source 00001         Sets the connection number.           0004         STORE Source 00001         Sets the connection number.           0005         STORE Source 00000 Dest DW00002         Sets the coll offset.           0006         STORE Source 00000 Dest DW00008         Sets the input relay offset.           0006         STORE Source 00000 Dest DW00009         Sets the input relay offset.           0007         STORE Source 00000 Dest DW00010         Sets the input register offset.           0008         STORE Source 00000 Dest DW00010         Sets the holding register offset.           0009         STORE Source 00000 Dest DW00012         Wright range: L0           0009         STORE Dest DW00013         Wright range: HI           0010 NL-2         Dest DW00013         Wright range: HI			
0000 NL-1         III         IIII         IIIIII         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		First scan after startup	
NL-1         SB000001==true           FOR         Clears DWG registers to zero.           Variable I         Init         0000           NL-2         Step         00001           Wax         00031         Step         Step           0002         STORE         Source 00000         Dest           0003         END_FOR         Sets the connection number.           0004         Storce 00001         Dest         DW00002           0005         STORE         Sets the coll offset.           0006         STORE         Sets the coll offset.           0007         Source 00000         Dest         DW00008           0006         STORE         Sets the input relay offset.           0007         Storce 00000         Dest         DW00009           0007         Storce 00000         Dest         DW00010           0008         Storce 00000         Dest         DW00010           0008         Store 00000         Dest         DW00011           0009         Store 00000         Dest         Wright range: LO           0009         Store 00000         Dest         Wright range: HI           0011         END_IF         Dest         DW00013 </td <td></td> <td>—(F)——</td> <td></td>		—(F)——	
0001       FOR Variable I Init       Clears DWG registers to zero.         001       Init       00000 Max       0000 Step       00001         002       Source       00000 Dest       DW000001         003       END_FOR       Sets the connection number.         004       STORE Source       Sets the connection number.         004       STORE Source       Sets the coll offset.         005       STORE Source       Sets the coll offset.         005       STORE Source       Sets the input relay offset.         006       STORE Source       Sets the input register offset.         0006       STORE Source       Sets the input register offset.         0007       STORE Source       Sets the input register offset.         0007       STORE Source       Sets the input register offset.         0008       STORE Source       Sets the holding register offset.         0009       Dest       DW00010         0009       Source       00000 Dest         0009       Source       00000000         NL-2       Dest       DW00012         0009       Source       0000065534 Dest         0001       Sets       Wright range: HI         0001       Sets <t< td=""><td></td><td>SB000001==true</td><td></td></t<>		SB000001==true	
OOOI NL-2         Variable Init         OOOO Max         OOOOI Step           0002         STORE Source         00000           0003         Dest         DW000001           0003         Dest         DW000001           0004         STORE Source         Sets the connection number.           0004         STORE Source         Sets the coll offset.           0005         STORE Source         Sets the coll offset.           0005         STORE Source         Sets the input relay offset.           0006         STORE Source         Sets the input relay offset.           0006         STORE Source         Sets the input relay offset.           0006         STORE Source         Sets the input register offset.           0006         STORE Source         Sets the input register offset.           0007         Store         Sets the input register offset.           0008         Source         Sets the holding register offset.           0008         Source         Wright range: LO           0009         Source         Wright range: HI           0009         Source         DW00013           0010         Source         DW00013	INL-I		riigh-speed scan (DWG TI). Sb00000T)
OOOI NL-2         Variable Init         OOOO Max         OOOOI Step           0002         STORE Source         00000           0003         Dest         DW000001           0003         Dest         DW000001           0004         STORE Source         Sets the connection number.           0004         STORE Source         Sets the coll offset.           0005         STORE Source         Sets the coll offset.           0005         STORE Source         Sets the input relay offset.           0006         STORE Source         Sets the input relay offset.           0006         STORE Source         Sets the input relay offset.           0006         STORE Source         Sets the input register offset.           0006         STORE Source         Sets the input register offset.           0007         Store         Sets the input register offset.           0008         Source         Sets the holding register offset.           0008         Source         Wright range: LO           0009         Source         Wright range: HI           0009         Source         DW00013           0010         Source         DW00013	0001		Clears DWG registers to zero
NL-2         Init         00000 Max         Max         00001 Step         00001           0002         STORE         Source         Source         0000         Dest         DW000001           0003         END_FOR         Sets the connection number.         0004         Source         Sets the connection number.           0004         STORE         Sets the connection number.         0004         Source         Sets the coll offset.           0005         STORE         Sets the coll offset.         Sets the coll offset.         Sets the coll offset.           0006         STORE         Sets the input relay offset.         Sets the input relay offset.         Sets the input register offset.           0007         STORE         Sets the input register offset.         Sets the input register offset.           0007         STORE         Sets the input register offset.         Sets the input register offset.           0007         Storce         00000         Sets the holding register offset.           0008         Storce         00000         Sets the holding register offset.           0008         Storce         00000         Sets the holding register offset.           0009         Source         00000         Sets the input register offset.           0009         <			
Max         00031 Step         Step         00001           0002 NL-3         STORE Dest         DW000001         0003           0003 NL-2         END_FOR         Sets the connection number.           0004         STORE Source 00001         Sets the coll offset.           0005 SOURCE 00000 NL-2         Sets the coll offset.         Sets the input relay offset.           0006         STORE Source 00000 Dest DW00008         Sets the input relay offset.           0006         STORE Source 00000 Dest DW00009         Sets the input relay offset.           0007         STORE Source 00000 Dest DW00010         Sets the input register offset.           0007         STORE Source 00000 Dest DW00010         Sets the holding register offset.           0008         STORE Source 00000 Dest DW00011         Sets the holding register offset.           0009         Store 00000 Dest DW00012         Wright range: LO           0009         Source 00000 Source 0000065534 Dest DW00013         Wright range: HI           0010         Store DW00013         Wright range: HI			
O002 NL-3         STORE Source 0000 Dest DW000001           0003 NL-2         END_FOR           0004         STORE Source 00001 NL-2         Sets the connection number.           0004         STORE Source 00000 Dest DW00002         Sets the coil offset.           0005 SOURCE 00000 NL-2         Sets the coil offset.           0006 SUICE 00000 Dest DW00009         Sets the input relay offset.           0007 SOURCE 00000 Dest DW00009         Sets the input register offset.           0007 NL-2         Storre 00000 Dest DW00009         Sets the input register offset.           0007 NL-2         Storre 00000 Dest DW00010         Sets the holding register offset.           0008 NL-2         Storre 00000 Dest DW00010         Sets the holding register offset.           0009 NL-2         Storre 00000 Dest DW00011         Wright range: LO           0009 NL-2         Storre 00000 Dest DW00012         Wright range: HI           0010 NL-2         Storre DW00013         Wright range: HI			
0002 NL-3         Source 00000 Dest DW000001           0003 NL-2         END_FOR           0004         STORE           0004         Source 00001           0005         STORE           0005         STORE           0005         STORE           0005         STORE           0005         STORE           0006         Storce 00000           NL-2         Dest DW00008           0006         Storce 00000           NL-2         Dest DW00009           0006         Storce 00000           NL-2         Dest DW00009           0007         Storce 00000           NL-2         Dest DW00009           0007         Storce 00000           NL-2         Dest DW00010           0008         Store 00000           NL-2         Dest DW00010           0008         Store 00000           NL-2         Dest DW00011           0009         Source 00000           NL-2         Dest DW00012           0009         Source 00000           NL-2         Dest DW00013           0010         Store 00000           NL-2         Dest DW00013		Step 00001	
0002 NL-3         Source 00000 Dest DW000001           0003 NL-2         END_FOR           0004         STORE           0004         Source 00001           0005         STORE           0005         STORE           0005         STORE           0005         STORE           0005         STORE           0006         Storce 00000           NL-2         Dest DW00008           0006         Storce 00000           NL-2         Dest DW00009           0006         Storce 00000           NL-2         Dest DW00009           0007         Storce 00000           NL-2         Dest DW00009           0007         Storce 00000           NL-2         Dest DW00010           0008         Store 00000           NL-2         Dest DW00010           0008         Store 00000           NL-2         Dest DW00011           0009         Source 00000           NL-2         Dest DW00012           0009         Source 00000           NL-2         Dest DW00013           0010         Store 00000           NL-2         Dest DW00013	0002		
NL-3         Dest         DW000001           0003         END_FOR         Sets the connection number.           0004         STORE         Sets the coil offset.           0005         STORE         Sets the coil offset.           0005         STORE         Sets the coil offset.           0006         STORE         Sets the coil offset.           0007         Source 00000         Dest           NL-2         Dest         DW00009           0006         STORE         Sets the input relay offset.           0007         Source 00000         Dest           NL-2         Dest         DW00010           0007         Store         Sets the input register offset.           0007         Store         Sets the holding register offset.           0007         Store         Dest         DW00010           0008         Source 00000         Dest         DW00011           0008         Source 00000         NL-2         Dest         DW00012           0009         Source 00000         Dest         Wright range: LO           0010         Store         000000         Wright range: HI           0010         Source 0000065534         Dest         DW00013			
0003 0003 NL-2     END_FOR       0004     STORE Source 00001 Dest DW00002     Sets the connection number.       0005     STORE Source 00000 Dest DW00008     Sets the coil offset.       0006     STORE Source 00000 Dest DW00009     Sets the input relay offset.       0007     STORE Source 00000 Dest DW00009     Sets the input register offset.       0007     STORE Source 00000 Dest DW00010     Sets the input register offset.       0008     STORE Source 00000 Dest DW00010     Sets the holding register offset.       0008     STORE Source 00000 Dest DW00011     Sets the holding register offset.       0009     STORE Dest DW00012     Wright range: LO       0009     STORE Dest DW00013     Wright range: HI       0010     STORE Dest DW00013     Wright range: HI	NL-3		
0003 NL-2       STORE       Sets the connection number.         0004       Source 00001 Dest DW00002       Sets the coil offset.         0005       STORE       Sets the coil offset.         0006       STORE       Sets the input relay offset.         0006       STORE       Sets the input relay offset.         0006       STORE       Sets the input relay offset.         0006       STORE       Sets the input register offset.         0007       STORE       Sets the input register offset.         0007       STORE       Sets the input register offset.         0007       STORE       Sets the input register offset.         0008       STORE       Sets the holding register offset.         0008       STORE       Sets the holding register offset.         0009       Source 00000       NL-2         0010       STORE       Wright range: LO         0010       Store 000000       Wright range: HI         0010       Store 0000065534       Wright range: HI         0011       END_IF       UVight range: HI		2001 2000000	
NL-2       Store       Sets the connection number.         0004       Source 00001       Dest DW00002         0005       Store       Sets the coil offset.         0005       Store       Sets the coil offset.         0006       Store       Sets the input relay offset.         0007       Store       Sets the input relay offset.         0007       Store       Sets the input relay offset.         0007       Store       Sets the input register offset.         0007       Store       Source onoon         0008       Store       Sets the input register offset.         0008       Store       Sets the holding register offset.         0008       Store       Source onoon         NL-2       Dest       DW0001         0008       Store       Sets the holding register offset.         0008       Store       Source onoon         NL-2       Dest       DW00012         0009       Source 00000       Wright range: LO         0010       Store       O000005534         NL-2       Dest       DW00013         0011       END_IF       Wright range: HI	0003	(END_FOR)	
0004 0004 NL-2       STORE Source 00001 Dest DW00002       Sets the connection number.         0005 0005 NL-2       STORE Source 00000 Dest DW00008       Sets the coil offset.         0006 NL-2       STORE Dest DW00009       Sets the input relay offset.         0007 NL-2       STORE Dest DW00009       Sets the input register offset.         0007 NL-2       STORE Dest DW00010       Sets the input register offset.         0008 NL-2       STORE Dest DW00010       Sets the holding register offset.         0008 NL-2       STORE Dest DW00011       Sets the holding register offset.         0009 NL-2       STORE Dest DW00012       Wright range: LO         0009 NL-2       Source 00000 Dest DW00012       Wright range: HI         0010 OU10 NL-2       Store Dest DW00013       Wright range: HI			
0004 NL-2         Source 00001 Dest DW00002         Sets the coil offset.           0005 0005         STORE Source 00000 Dest DW00008         Sets the coil offset.           0006         STORE Source 00000 Dest DW00009         Sets the input relay offset.           0007         STORE Source 00000 Dest DW00009         Sets the input register offset.           0007         STORE Source 00000 Dest DW00010         Sets the holding register offset.           0008         STORE Dest DW00011         Sets the holding register offset.           0009         STORE Dest DW00011         Sets the holding register offset.           0009         STORE Dest DW00012         Wright range: LO           0010         STORE Dest DW00013         Wright range: HI           0010         Store 0000065534 Dest DW00013         Wright range: HI	NL-2		
0004 NL-2         Source 00001 Dest DW00002         Sets the coil offset.           0005 0005         STORE Source 00000 Dest DW00008         Sets the coil offset.           0006         STORE Source 00000 Dest DW00009         Sets the input relay offset.           0007         STORE Source 00000 Dest DW00009         Sets the input register offset.           0007         STORE Source 00000 Dest DW00010         Sets the holding register offset.           0008         STORE Dest DW00011         Sets the holding register offset.           0009         STORE Dest DW00011         Sets the holding register offset.           0009         STORE Dest DW00012         Wright range: LO           0010         STORE Dest DW00013         Wright range: HI           0010         Store 0000065534 Dest DW00013         Wright range: HI			Sate the connection number
NL-2         Dest         DW00002           0005         STORE         Sets the coll offset.           0005         Dest         DW00008           0006         STORE         Sets the input relay offset.           0006         STORE         Sets the input relay offset.           0007         Dest         DW00009           0007         STORE         Sets the input register offset.           0007         Source 00000         Dest           0007         Source 00000         Dest           0008         STORE         Sets the input register offset.           0007         Source 00000         Dest           0008         STORE         Sets the holding register offset.           0008         STORE         Sets the holding register offset.           0008         STORE         Wright range: LO           0009         Source 00000         Dest DW00012           0010         Store 0000065534         Wright range: HI           0011         END_IF         Utight range: HI			Sets the connection number.
0005 0005 NL-2       STORE Source 00000 Dest DW00008       Sets the coil offset.         0006 0006       STORE Source 00000 Dest DW00009       Sets the input relay offset.         0007 0007       STORE Source 00000 Dest DW00010       Sets the input register offset.         0008       STORE Source 00000 Dest DW00010       Sets the holding register offset.         0008       STORE Source 00000 Dest DW00011       Sets the holding register offset.         0009       STORE Dest DW00012       Wright range: LO         0010       STORE Dest DW00013       Wright range: HI			
OU05 NL-2         OU000 Source         OU000 Dest         DW00008           0006 0006         STORE Source         Sets the input relay offset.           0007         STORE Dest         Sets the input register offset.           0007         Storce         Sets the input register offset.           0008         STORE Dest         Sets the input register offset.           0008         STORE Dest         Sets the holding register offset.           0008         STORE Dest         Sets the holding register offset.           0009         Storce         00000 Dest         Wright range: LO           0010         Store         00000 Dest         Wright range: HI           0010         Storce         0000005534 Dest         Wright range: HI           0011         END_F         Wright range: HI			
0005 NL-2         Source         00000 Dest         Source         00000 Dest         Sets the input relay offset.           0006 NL-2         STORE Dest         Sets the input relay offset.         Sets the input register offset.           0007 NL-2         Store         Source         Sets the input register offset.           0007 NL-2         Source         Source         Sets the input register offset.           0007 NL-2         Store         Source         Sets the holding register offset.           0008 NL-2         Store         Sets the holding register offset.           0009 NL-2         Store         Sets the holding register offset.           0009 NL-2         Store         Wright range: LO           0010         Store         Store         Wright range: HI           0010         Store         DW00013         Wright range: HI	0005	STORE	Sets the coil offset.
NL-2         Dest         DW00008           0006         STORE         Sets the input relay offset.           0007         Dest         DW00009           0007         STORE         Sets the input register offset.           0007         Source 00000         Dest           0007         Source 00000         Dest           0008         STORE         Sets the input register offset.           0008         STORE         Sets the holding register offset.           0008         STORE         Sets the holding register offset.           0009         Storce 00000         Dest         DW00011           0009         Source 00000         Wright range: LO           0010         Store 0000065534         Wright range: HI           0011         END_IF         Wright range: HI	0005		
0006 NL-2         Source         0000 Dest         Source         00000           0007 NL-2         STORE Dest         Sets the input register offset.           0008         STORE Dest         Sets the holding register offset.           0008         STORE Dest         Sets the holding register offset.           0008         Source         0000 Dest         Wright range: LO           0009         STORE Dest         Wright range: LO           0010         Store         0000065534 Dest         Wright range: HI           0011         END_IF         Wright range: HI	NL-2	Dest DW00008	
0006 NL-2         Source         0000 Dest         Source         00000           0007 NL-2         STORE Dest         Sets the input register offset.           0008         STORE Dest         Sets the holding register offset.           0008         STORE Dest         Sets the holding register offset.           0008         Source         0000 Dest         Wright range: LO           0009         STORE Dest         Wright range: LO           0010         Store         0000065534 Dest         Wright range: HI           0011         END_IF         Wright range: HI			
NL-2         Dest         DW00009           0007         Source         00000           0007         Source         00000           NL-2         Dest         DW00010           0008         STORE         Sets the input register offset.           0008         Source         00000           NL-2         Dest         DW00010           0008         Source         00000           NL-2         Dest         DW00011           0009         Store         Wright range: LO           0009         Source         00000           NL-2         Dest         DW00012           0010         Store         00000           Source         00000         Wright range: HI           0010         Store         0000065534           Dest         DW00013         Wright range: HI	0006	- STORE	Sets the input relay offset.
O007         STORE         Sets the input register offset.           0007         NL-2         Dest         DW00010           0008         STORE         Sets the holding register offset.           0008         Source         00000           0009         STORE         Wright range: LO           0009         Store         00000           0009         Store         Wright range: LO           0010         Store         Wright range: HI           0010         Store         DW00013			
OUT         OTOL           0007         NL-2         Dest         DW00010           0008         STORE         Sets the holding register offset.           0008         Source         00000           NL-2         Dest         DW00010           0009         STORE         Wright range: LO           0009         Source         00000           NL-2         Dest         DW00012           0010         STORE         Wright range: HI           0010         Source         0000065534           NL-2         Dest         DW00013	NL-2	Dest DW00009	
OUT         OTOL           0007         NL-2         Dest         DW00010           0008         STORE         Sets the holding register offset.           0008         Source         00000           NL-2         Dest         DW00010           0009         STORE         Wright range: LO           0009         Source         00000           NL-2         Dest         DW00012           0010         STORE         Wright range: HI           0010         Source         0000065534           NL-2         Dest         DW00013			
NL-2         Dest         DW00010           0008         STORE         Sets the holding register offset.           0008         Source         00000           Dest         DW00011         Wright range: LO           0009         Store         0000           0009         Source         00000           0010         Store         Wright range: LO           0010         Store         0000065534           0011         END_IF         Wright range: HI		- ( <u>STORE</u> )	Sets the input register offset.
OO08         STORE         Sets the holding register offset.           0008         Source 00000         Dest DW00011         Wright range: LO           0009         STORE         Wright range: LO         Wright range: HI           0010         STORE         Wright range: HI         Wright range: HI           0011         END_IF         Mright range: HI         Mright range: HI			
0008 NL-2         Source         00000 Dest         Wright range: LO           0009 0009         STORE Dest         Wright range: LO           0010         STORE Dest         Wright range: HI           0010         Store         000065534 Dest         Wright range: HI           0011         END_IF         Image: HI         Image: HI	NL-2	Dest DW00010	
0008 NL-2         Source         00000 Dest         Wright range: LO           0009 0009         STORE Dest         Wright range: LO           0010         STORE Dest         Wright range: HI           0010         Store         000065534 Dest         Wright range: HI           0011         END_IF         Image: HI         Image: HI			
NL-2         Dest         DW00011           0009         STORE         Wright range: LO           0009         Source         00000           NL-2         Dest         DW00012           0010         STORE         Wright range: HI           0010         Source         0000065534           NL-2         Dest         DW00013			Sets the holding register offset.
0009         STORE         Wright range: LO           0009         Source 00000         Dest DW00012           0010         STORE         Wright range: HI           0010         Source 0000065534         Wright range: HI           0010         Source 0000065534         Utight range: HI           0011         END_IF         Utight range: HI			
OU009 NL-2         Source         00000 Dest         Wright range: HI           0010         Store         0000065534         Wright range: HI           0010         Source         00000065534         Dest         DW00013           0011         END_IF         0011         END_IF         0011	INL-Z	Dest DW00011	
OU009 NL-2         Source         00000 Dest         Wright range: HI           0010         Store         0000065534         Wright range: HI           0010         Source         00000065534         Dest         DW00013           0011         END_IF         0011         END_IF         0011			
NL-2         Dest         DW00012           0010         STORE         Wright range: HI           0010         Source         0000065534           NL-2         Dest         DW00013           0011         END_IF			Wright range: LO
O010         STORE         Wright range: HI           0010         Source 0000065534         Dest DW00013           0011         END_IF         END_IF			
Olio         Source         0000065534           NL-2         Dest         DW00013           0011         END_IF	INL-Z	Dest DW00012	
Olio         Source         0000065534           NL-2         Dest         DW00013           0011         END_IF	0040		Wright range: HI
NL-2 Dest DW00013			wight lange. In
0011 0011 0011			
0011		2000 2000010	
0011	0011	END IF	
I			
	I		



## 3.3 Setting Example 3

## Settings of GP-Pro EX

Communication Settings

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

Device/PLC 1		
Summary		Change Device/PLC
Maker VASKAWA Electric Corporation	Driver MEMOBUS Ethernet	Port Ethernet (TCP)
Text Data Mode 1 <u>Change</u>		
Communication Settings		
Port No. 🛛 🔂 🛃 🗹 Auto	2	
Timeout 3 📑 (sec)		
Retry 0 🚍		
Wait To Send 🛛 📑 (ms)	Default	
Device-Specific Settings		
Allowable No. of Device/PLCs 16 Unit(s)		
	Settings       P Address=192.168.001.001,Port No.=1024,D	 Data Code=BINARY

#### Device Setting

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

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

💰 Individual De	💣 Individual Device Settings 🛛 🔀				
PLC1					
IP Address Port No.	192. 168. 1024	1. 1			
Data Code	BINARY	O ASCII	Default		
		OK ( <u>0</u> )	Cancel		

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the display in the off-line mode of the display.

Communication setting of communication module 218IF-01 by ladder software. (Check the operation in MPE720 Ver.5.32)

- Ladder Software Setting
- 1 Start ladder software, make an order folder and a PLC folder in a root folder.

Select the connected PLC at the time of PLC folder making.

2 Click the right button of the PLC which select logon in the displayed menu.

**NOTE** • Logon after confirming that a check does not begin [online] of a displayed menu.

• Refer to User's Manual of the PLC about a method of logon.

- **3** Double-click the [Definition folder]-[Module constitution] of the PLC folder, and display [Engineering Manager].
- 4 Select the rack classification and link I/F, the pull-down menu in [Controller] of [Engineerring Manager]. Set the number corresponding to the slot number that a communication module uses. Select the communication module, setting contents are displayed to [Module details] of [Enginnering Manager].
- 5 Double-click the number part at No. in [Module details].

Double-click the slot number connecting the ethernet unit.

Setup Items		Setup Description
Transmission parameter	This Station IP address	PLC IP address
	My Port	PLC port No.
	DST. IP Address <sup>*1</sup>	GP-Pro EX IP address
Connection perometer	DST. Port <sup>*1</sup>	GP-Pro EX port No.
Connection parameter	Connection type	ТСР
	Protocol type	expansion memobus
	Code	BIN

\*1 When you check the [Auto] of a port number in the communication setting of the GP-Pro EX, set the IP address and the port number to "0.0.0.0" and "00000", respectively.

6 Double-click the "No.1", and set serial communication.

Use serial communication setting to forward communication setting and the ladder program to the PLC.

- 7 Save setting content and finish [Engineering Manager].
- 8 Make the communication ladder "high speed drawing" where "6" is set for [Dev-Typ].

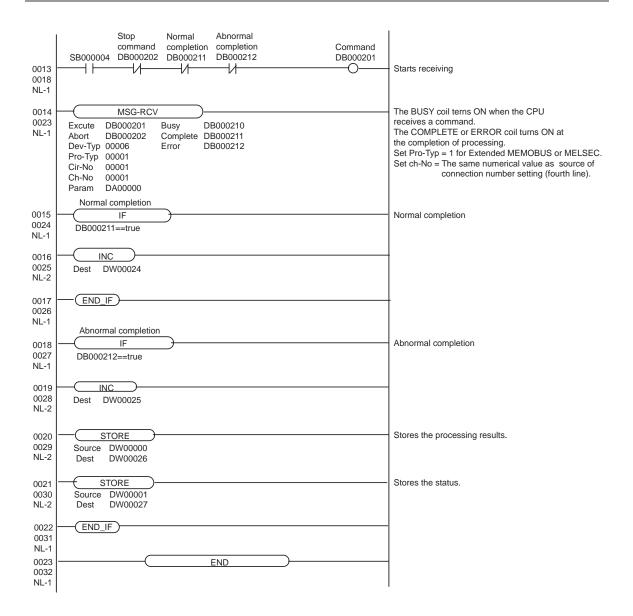
\*\* Adder Program for Communication" (page 16)

- **9** Turn the DIP switch "INIT" of a communication module to ON, and supply the power.
- 10 Forward communication setting and a ladder program to a communication module.
- **11** Log on the PLC in online and write the transferred data to the flash memory.
- 12 Turn the PLC power and the INIT DIP switch to OFF. Then, turn the PLC power to ON.

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Please refer to the manual of the ladder software for more detail.

#### Ladder Program for Communication

First scan after startup         Sets parameters in the first scan after startup. (Low-speed scan (DWG L): SB00001 High-speed scan (DWG H): SB00001)           0001         FOR Variable I Init 00000 Max 00031 Step 00001         Clears DWG registers to zero.           0002         STORE Source 00000 Dest DW000001         Clears DWG registers to zero.           0003         END_FOR         Sets the connection number.           0004         STORE Source 00001         Sets the connection number.           0004         STORE Source 00001         Sets the connection number.           0005         STORE Source 00000 Dest DW00002         Sets the coll offset.           0006         STORE Source 00000 Dest DW00008         Sets the input relay offset.           0006         STORE Source 00000 Dest DW00009         Sets the input relay offset.           0007         STORE Source 00000 Dest DW00010         Sets the input register offset.           0008         STORE Source 00000 Dest DW00010         Sets the holding register offset.           0009         STORE Source 00000 Dest DW00012         Wright range: L0           0009         STORE Dest DW00013         Wright range: HI           0010 NL-2         Dest DW00013         Wright range: HI			
0000 NL-1         III         IIII         IIIIII         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		First scan after startup	
NL-1         SB000001==true           FOR         Clears DWG registers to zero.           Variable I         Init         0000           NL-2         Step         00001           Wax         00031         Step         Step           0002         STORE         Source 00000         Dest           0003         END_FOR         Sets the connection number.           0004         Storce 00001         Dest         DW00002           0005         STORE         Sets the coll offset.           0006         STORE         Sets the coll offset.           0007         Source 00000         Dest         DW00008           0006         STORE         Sets the input relay offset.           0006         STORE         Sets the input register offset.           0007         Storce         Source         Sets the input register offset.           0007         Store         Source         Sets the holding register offset.           0008         Store         Store         Sets the holding register offset.           0009         Store         Source         Sets the holding register offset.           0008         Store         Source         Sets the holding register offset.		—(F)——	
0001       FOR Variable I Init       Clears DWG registers to zero.         001       Init       00000 Max       0000 Max       Clears DWG registers to zero.         0002       Stop       00001       Step       0000         0003       Dest       DW000001       Dest       DW000001         0004       Storre       00001       Sets the connection number.         0004       Storre       00001       Dest       DW00002         0005       Storre       0000       Dest       DW00002         0005       Storre       0000       Dest       DW00008         0006       Storre       00000       Dest       DW00009         0006       Store       00000       Dest       DW00009         0007       Storre       00000       Dest       DW00010         008       Store       00000       Dest       DW00010         008       Storre       00000       Dest       DW00011         009       Source 0000065534       Wright range: LO       NL-2         0010       Storre       0000065534       Dest       DW00013         0011       END_IF       UN0013       Wright range: HI		SB000001==true	
OOOI NL-2         Variable Init         OOOO Wax         OOOOO Max         OOOOO Store           0002         Store         00000         Step         OOOO           0003         Set         DW000001         Sets         Sets           0004         Store         00001         Sets         Sets           0003         END_FOR         Sets         Sets         Sets           0004         Store         00001         Sets         Sets           0004         Store         00001         Sets         Sets           0005         Store         00000         Sets         Sets           0005         Store         00000         Sets         Sets         Sets           0006         Store         00000         Sets         Sets         Sets         Sets           0006         Store         00000         Dest         DW00009         Sets	INL-I		riigh-speed scan (DWG TI). Sb00000T)
OOOI NL-2         Variable Init         OOOO Wax         OOOOO Max         OOOOO Store           0002         Store         00000         Step         OOOO           0003         Set         DW000001         Sets         Sets           0004         Store         00001         Sets         Sets           0003         END_FOR         Sets         Sets         Sets           0004         Store         00001         Sets         Sets           0004         Store         00001         Sets         Sets           0005         Store         00000         Sets         Sets           0005         Store         00000         Sets         Sets         Sets           0006         Store         00000         Sets         Sets         Sets         Sets           0006         Store         00000         Dest         DW00009         Sets	0001		Clears DWG registers to zero
NL-2         Init         00000 Max         Max         00001 Step         00001           0002         STORE         Source         Source         0000         Dest         DW000001           0003         END_FOR         Sets the connection number.         0004         Source         Sets the connection number.           0004         STORE         Sets the connection number.         0004         Source         Sets the coll offset.           0005         STORE         Sets the coll offset.         Sets the coll offset.         Dest           0006         STORE         Sets the input relay offset.         Sets the input register offset.           0006         STORE         Sets the input register offset.         Sets the input register offset.           0007         STORE         Sets the input register offset.         Sets the input register offset.           0007         Storce         00000         Dest         DW00010         Sets the holding register offset.           0008         Storce         00000         Dest         DW00011         Sets the input register offset.           0009         Source         00000         Dest         DW00012         Wright range: LO           0010         Source         0000005534         Dest         D			
Max         00031 Step         Step         00001           0002 NL-3         STORE Dest         DW000001         0003           0003 NL-2         END_FOR         Sets the connection number.           0004         STORE Source 00001         Sets the coll offset.           0005 SOURCE 00000 NL-2         Sets the coll offset.         Sets the input relay offset.           0006         STORE Source 00000 Dest DW00008         Sets the input relay offset.           0006         STORE Source 00000 Dest DW00009         Sets the input relay offset.           0007         STORE Source 00000 Dest DW00010         Sets the input register offset.           0007         STORE Source 00000 Dest DW00010         Sets the holding register offset.           0008         STORE Source 00000 Dest DW00011         Sets the holding register offset.           0009         Store 00000 Dest DW00012         Wright range: LO           0009         Source 00000 Source 0000065534 Dest DW00013         Wright range: HI           0010         Store DW00013         Wright range: HI			
O002 NL-3         STORE Source 0000 Dest DW000001           0003 NL-2         END_FOR           0004         STORE Source 00001 NL-2         Sets the connection number.           0004         STORE Source 00000 Dest DW00002         Sets the coil offset.           0005 SOURCE 00000 NL-2         Sets the coil offset.           0006 SUCE 00000 Dest DW00009         Sets the input relay offset.           0007 SOURCE 00000 Dest DW00009         Sets the input register offset.           0007 NL-2         Store 00000 Dest DW00009         Sets the holding register offset.           0007 NL-2         Store 00000 Dest DW00010         Sets the holding register offset.           0008 NL-2         Store 00000 Dest DW00010         Wright range: LO           0009 NL-2         Store 00000 Dest DW00012         Wright range: HI           0009 NL-2         Store DW00013         Wright range: HI			
0002 NL-3         Source 00000 Dest DW000001           0003 NL-2         END_FOR           0004         STORE           0004         Source 00001           0005         STORE           0005         STORE           0005         STORE           0005         STORE           0005         STORE           0006         Storce 00000           NL-2         Dest DW00008           0006         Storce 00000           NL-2         Dest DW00009           0006         Storce 00000           NL-2         Dest DW00009           0007         Storce 00000           NL-2         Dest DW00009           0007         Storce 00000           NL-2         Dest DW00010           0008         Store 00000           NL-2         Dest DW00010           0008         Store 00000           NL-2         Dest DW00011           0009         Source 00000           NL-2         Dest DW00012           0009         Source 00000           NL-2         Dest DW00013           0010         Store 00000           NL-2         Dest DW00013		Step 00001	
0002 NL-3         Source 00000 Dest DW000001           0003 NL-2         END_FOR           0004         STORE           0004         Source 00001           0005         STORE           0005         STORE           0005         STORE           0005         STORE           0005         STORE           0006         Storce 00000           NL-2         Dest DW00008           0006         Storce 00000           NL-2         Dest DW00009           0006         Storce 00000           NL-2         Dest DW00009           0007         Storce 00000           NL-2         Dest DW00009           0007         Storce 00000           NL-2         Dest DW00010           0008         Store 00000           NL-2         Dest DW00010           0008         Store 00000           NL-2         Dest DW00011           0009         Source 00000           NL-2         Dest DW00012           0009         Source 00000           NL-2         Dest DW00013           0010         Store 00000           NL-2         Dest DW00013	0002		
NL-3         Dest         DW000001           0003         END_FOR         Sets the connection number.           0004         STORE         Sets the coil offset.           0005         STORE         Sets the coil offset.           0005         STORE         Sets the coil offset.           0006         STORE         Sets the coil offset.           0007         Source 00000         Dest           NL-2         Dest         DW00009           0006         STORE         Sets the input relay offset.           0007         Source 00000         Dest           NL-2         Dest         DW00010           0007         Store         Sets the input register offset.           0007         Store         Sets the holding register offset.           0007         Store         Dest         DW00010           0008         Source 00000         Dest         DW00011           0008         Source 00000         NL-2         Dest         DW00012           0009         Source 00000         Dest         Wright range: LO           0010         Store         000000         Wright range: HI           0010         Source 0000065534         Dest         DW00013			
0003 0003 NL-2     END_FOR       0004     STORE Source 00001 Dest DW00002     Sets the connection number.       0005     STORE Source 00000 Dest DW00008     Sets the coil offset.       0006     STORE Source 00000 Dest DW00009     Sets the input relay offset.       0007     STORE Dest DW00009     Sets the input register offset.       0007     STORE Dest DW00010     Sets the input register offset.       0008     STORE Dest DW00010     Sets the holding register offset.       0008     STORE Dest DW00011     Sets the holding register offset.       0009     STORE Dest DW00012     Wright range: LO       0009     STORE Dest DW00013     Wright range: HI       0010     STORE Dest DW00013     Wright range: HI	NL-3		
0003 NL-2       STORE       Sets the connection number.         0004       Source 00001 Dest DW00002       Sets the coil offset.         0005       STORE Source 00000 Dest DW00008       Sets the input relay offset.         0006       STORE Source 00000 Dest DW00009       Sets the input relay offset.         0007       STORE Source 00000 Dest DW00009       Sets the input register offset.         0007       STORE Source 00000 Dest DW00010       Sets the input register offset.         0008       STORE Source 00000 Dest DW00010       Sets the holding register offset.         0008       STORE Source 00000 Dest DW00011       Wright range: LO         0009       STORE Dest DW00012       Wright range: HI         0010       Store 0000065534 Dest DW00013       Wright range: HI		2001 2000000	
NL-2       Store       Sets the connection number.         0004       Source 00001       Dest DW00002         0005       Store       Sets the coil offset.         0005       Store       Sets the coil offset.         0006       Store       Sets the input relay offset.         0007       Store       Sets the input relay offset.         0007       Store       Sets the input relay offset.         0007       Store       Sets the input register offset.         0007       Store       Source offset.         0007       Store       Sets the input register offset.         0008       Store       Sets the holding register offset.         0008       Store       Source offset.         0009       Store       Wright range: LO         0010       Store       Store       Wright range: HI         0010       Store       DW00013       Wright range: HI         0011       END_IF       Wright range: HI       Source NU	0003	(END_FOR)	
0004 0004 NL-2       STORE Source 00001 Dest DW00002       Sets the connection number.         0005 0005 NL-2       STORE Source 00000 Dest DW00008       Sets the coil offset.         0006 NL-2       STORE Dest DW00009       Sets the input relay offset.         0007 NL-2       STORE Dest DW00009       Sets the input register offset.         0007 NL-2       STORE Dest DW00010       Sets the input register offset.         0008 NL-2       STORE Dest DW00010       Sets the holding register offset.         0008 NL-2       STORE Dest DW00011       Sets the holding register offset.         0009 NL-2       STORE Dest DW00012       Wright range: LO         0009 NL-2       Source 00000 Dest DW00012       Wright range: HI         0010 OU10 NL-2       Store Dest DW00013       Wright range: HI			
0004 NL-2         Source 00001 Dest DW00002         Sets the coil offset.           0005 0005         STORE Source 00000 Dest DW00008         Sets the coil offset.           0006         STORE Source 00000 Dest DW00009         Sets the input relay offset.           0007         STORE Source 00000 Dest DW00009         Sets the input register offset.           0007         STORE Source 00000 Dest DW00010         Sets the holding register offset.           0008         STORE Dest DW00011         Sets the holding register offset.           0009         STORE Dest DW00011         Sets the holding register offset.           0009         STORE Dest DW00012         Wright range: LO           0010         STORE Dest DW00013         Wright range: HI           0010         Store 0000065534 Dest DW00013         Wright range: HI	NL-2		
0004 NL-2         Source 00001 Dest DW00002         Sets the coil offset.           0005 0005         STORE Source 00000 Dest DW00008         Sets the coil offset.           0006         STORE Source 00000 Dest DW00009         Sets the input relay offset.           0007         STORE Source 00000 Dest DW00009         Sets the input register offset.           0007         STORE Source 00000 Dest DW00010         Sets the holding register offset.           0008         STORE Dest DW00011         Sets the holding register offset.           0009         STORE Dest DW00011         Sets the holding register offset.           0009         STORE Dest DW00012         Wright range: LO           0010         STORE Dest DW00013         Wright range: HI           0010         Store 0000065534 Dest DW00013         Wright range: HI			Sate the connection number
NL-2         Dest         DW00002           0005         STORE         Sets the coll offset.           0005         Dest         DW00008           0006         STORE         Sets the input relay offset.           0006         STORE         Sets the input relay offset.           0007         Source         00000           NL-2         Dest         DW00009           0007         Storce         Sets the input relay offset.           0007         Source         Sets the input register offset.           0007         Source         Sets the holding register offset.           0008         STORE         Sets the holding register offset.           0008         STORE         Sets the holding register offset.           0008         Storce         00000           NL-2         Dest         DW00011           0008         Storce         00000           NL-2         Dest         DW00012           0009         Source         00000           NL-2         Dest         DW00012           010         Storce         0000065534           Dest         DW00013         Wright range: HI           0011         END_IF         END_IF			Sets the connection number.
0005 0005 NL-2       STORE Source 00000 Dest DW00008       Sets the coil offset.         0006 0006       STORE Source 00000 Dest DW00009       Sets the input relay offset.         0007 0007       STORE Source 00000 Dest DW00010       Sets the input register offset.         0008       STORE Source 00000 Dest DW00010       Sets the holding register offset.         0008       STORE Source 00000 Dest DW00011       Sets the holding register offset.         0009       STORE Dest DW00012       Wright range: LO         0010       STORE Dest DW00013       Wright range: HI			
OU05 NL-2         OU000 Source         OU000 Dest         DW00008           0006 0006         STORE Source         Sets the input relay offset.           0007         STORE Dest         Sets the input register offset.           0007         Storce         Sets the input register offset.           0008         STORE Dest         Sets the input register offset.           0008         STORE Dest         Sets the holding register offset.           0008         STORE Dest         Sets the holding register offset.           0009         Storce         00000 Dest         Wright range: LO           0010         Store         00000 Dest         Wright range: HI           0010         Storce         0000005534 Dest         Wright range: HI           0011         END_F         Wright range: HI			
0005 NL-2         Source         00000 Dest         Source         00000 Dest         Sets the input relay offset.           0006 NL-2         STORE Dest         Sets the input relay offset.         Sets the input register offset.           0007 NL-2         Store         Source         Sets the input register offset.           0007 NL-2         Source         Source         Sets the input register offset.           0008 NL-2         Store         Source         Sets the holding register offset.           0008 NL-2         Store         Sets the holding register offset.           0009 NL-2         Store         Sets the holding register offset.           0009 NL-2         Store         Wright range: LO           0010         Store         Store         Wright range: HI           0010         Store         DW00013         Wright range: HI	0005	STORE	Sets the coil offset.
NL-2         Dest         DW00008           0006         STORE         Sets the input relay offset.           0007         Dest         DW00009           0007         STORE         Sets the input register offset.           0007         Source 00000         Dest           0007         Source 00000         Dest           0008         STORE         Sets the input register offset.           0008         STORE         Sets the holding register offset.           0008         STORE         Sets the holding register offset.           0009         Storce 00000         Dest         DW00011           0009         Source 00000         Wright range: LO           0010         Store 0000065534         Wright range: HI           0011         END_IF         Wright range: HI	0005		
0006 NL-2         Source         0000 Dest         Source         00000           0007 NL-2         STORE Dest         Sets the input register offset.           0008         STORE Dest         Sets the holding register offset.           0008         STORE Dest         Sets the holding register offset.           0008         Source         0000 Dest         Wright range: LO           0009         STORE Dest         Wright range: LO           0010         Store         0000065534 Dest         Wright range: HI           0011         END_IF         Wright range: HI	NL-2	Dest DW00008	
0006 NL-2         Source         0000 Dest         Source         00000           0007 NL-2         STORE Dest         Sets the input register offset.           0008         STORE Dest         Sets the holding register offset.           0008         STORE Dest         Sets the holding register offset.           0008         Source         0000 Dest         Wright range: LO           0009         STORE Dest         Wright range: LO           0010         Store         0000065534 Dest         Wright range: HI           0011         END_IF         Wright range: HI			
NL-2         Dest         DW00009           0007         Source         00000           0007         Source         00000           NL-2         Dest         DW00010           0008         STORE         Sets the input register offset.           0008         Source         00000           NL-2         Dest         DW00010           0008         Source         00000           NL-2         Dest         DW00011           0009         Store         Wright range: LO           0009         Source         00000           NL-2         Dest         DW00012           0010         Store         00000           Source         00000         Wright range: HI           0010         Store         0000065534           Dest         DW00013         Wright range: HI	0006	- STORE	Sets the input relay offset.
O007         STORE         Sets the input register offset.           0007         NL-2         Dest         DW00010           0008         STORE         Sets the holding register offset.           0008         Source         00000           0009         STORE         Wright range: LO           0009         Store         00000           0009         Store         Wright range: LO           0010         Store         Wright range: HI           0010         Store         DW00013			
OUT         OTOL           0007         NL-2         Dest         DW00010           0008         STORE         Sets the holding register offset.           0008         Source         00000           NL-2         Dest         DW00010           0009         STORE         Wright range: LO           0009         Source         00000           NL-2         Dest         DW00012           0010         STORE         Wright range: HI           0010         Source         0000065534           NL-2         Dest         DW00013	NL-2	Dest DW00009	
OUT         OTOL           0007         NL-2         Dest         DW00010           0008         STORE         Sets the holding register offset.           0008         Source         00000           NL-2         Dest         DW00010           0009         STORE         Wright range: LO           0009         Source         00000           NL-2         Dest         DW00012           0010         STORE         Wright range: HI           0010         Source         0000065534           NL-2         Dest         DW00013			
NL-2         Dest         DW00010           0008         STORE         Sets the holding register offset.           0008         Source         00000           Dest         DW00011         Wright range: LO           0009         Store         0000           0009         Source         00000           0010         Store         Wright range: LO           0010         Store         0000065534           0011         END_IF         Wright range: HI		- ( <u>STORE</u> )	Sets the input register offset.
OO08         STORE         Sets the holding register offset.           0008         Source 00000         Dest DW00011         Wright range: LO           0009         STORE         Wright range: LO         Wright range: HI           0010         STORE         Wright range: HI         Wright range: HI           0011         END_IF         Mright range: HI         Mright range: HI			
0008 NL-2         Source         00000 Dest         Wright range: LO           0009 0009         STORE Dest         Wright range: LO           0010         STORE Dest         Wright range: HI           0010         Store         000065534 Dest         Wright range: HI           0011         END_IF         Image: HI         Image: HI	NL-2	Dest DW00010	
0008 NL-2         Source         00000 Dest         Wright range: LO           0009 0009         STORE Dest         Wright range: LO           0010         STORE Dest         Wright range: HI           0010         Store         000065534 Dest         Wright range: HI           0011         END_IF         Image: HI         Image: HI			
NL-2         Dest         DW00011           0009         STORE         Wright range: LO           0009         Source         00000           NL-2         Dest         DW00012           0010         STORE         Wright range: HI           0010         Source         0000065534           NL-2         Dest         DW00013			Sets the holding register offset.
0009         STORE         Wright range: LO           0009         Source 00000         Dest DW00012           0010         STORE         Wright range: HI           0010         Source 0000065534         Wright range: HI           0010         Source 0000065534         Utight range: HI           0011         END_IF         Utight range: HI			
OU009 NL-2         Source         00000 Dest         Wright range: HI           0010         Store         0000065534         Wright range: HI           0010         Source         00000065534         Dest         DW00013           0011         END_IF         0011         END_IF         0011	INL-Z	Dest DW00011	
OU009 NL-2         Source         00000 Dest         Wright range: HI           0010         Store         0000065534         Wright range: HI           0010         Source         00000065534         Dest         DW00013           0011         END_IF         0011         END_IF         0011			
NL-2         Dest         DW00012           0010         STORE         Wright range: HI           0010         Source         0000065534           NL-2         Dest         DW00013           0011         END_IF			Wright range: LO
O010         STORE         Wright range: HI           0010         Source 0000065534         Dest DW00013           0011         END_IF         END_IF			
Olio         Source         0000065534           NL-2         Dest         DW00013           0011         END_IF	INL-Z	Dest DW00012	
Olio         Source         0000065534           NL-2         Dest         DW00013           0011         END_IF	0040		Wright range: HI
NL-2 Dest DW00013			wight lange. In
0011 0011 0011			
0011		2000 2000010	
0011	0011	END IE	
I			
	I		



## 3.4 Setting Example 4

- Settings of GP-Pro EX
- Communication Settings

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

Device/PLC 1	
Summary Change Device/PLC	
Maker VASKAWA Electric Corporation Driver MEMOBUS Ethernet Port Ethernet (UDP)	
Text Data Mode 1 Change	
Communication Settings	
Port No. 1024 📑	
Timeout 3 😑 (sec)	
Retry 2	
Wait To Send 0 📑 (ms) Default	
Device-Specific Settings	
Allowable No. of Device/PLCs 32 Unit(s) 📊	
No.         Device Name         Settings           1         PLC1         IP Address=192.168.001.001,Port No.=1024,Data Code=BINARY	_

#### Device Setting

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

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

💰 Individual D	evice Settings		×
PLC1			
IP Address Port No.	192. 168. 1024	1. 1	
Data Code	BINARY	🔿 ASCII	Default
		OK ( <u>0</u> )	Cancel

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the display in the off-line mode of the display.

Communication setting of communication module 218IF-01 by ladder software. (Check the operation in MPE720 Ver.5.32)

- Ladder Software Setting
- 1 Start ladder software, make an order folder and a PLC folder in a root folder.

Select the connected PLC at the time of PLC folder making.

2 Click the right button of the PLC which select logon in the displayed menu.

**NOTE** • Logon after confirming that a check does not begin [online] of a displayed menu.

• Refer to User's Manual of the PLC about a method of logon.

- **3** Double-click the [Definition folder]-[Module constitution] of the PLC folder, and display [Engineering Manager].
- 4 Select the rack classification and link I/F, the pull-down menu in [Controller] of [Engineerring Manager]. Set the number corresponding to the slot number that a communication module uses. Select the communication module, setting contents are displayed to [Module details] of [Enginnering Manager].
- 5 Double-click the number part at No. in [Module details].

Double-click the slot number connecting the ethernet unit.

Setup Items		Setup Description
Transmission parameter         This Station IP address         I		PLC IP address
	My Port	PLC port No.
	DST. IP Address	GP-Pro EX IP address
Connection parameter	DST. Port	GP-Pro EX port No.
	Connection type	UDP
	Protocol type	expansion memobus
	Code	BIN

6 Double-click the "No.1", and set serial communication.

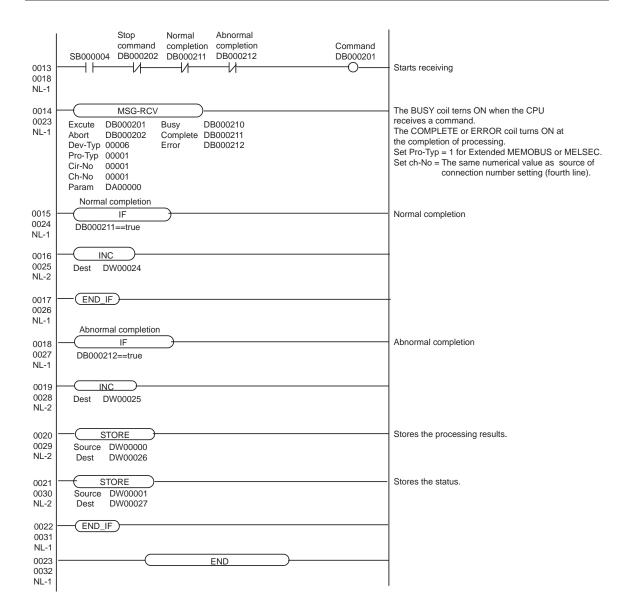
Use serial communication setting to forward communication setting and the ladder program to the PLC.

- 7 Save setting content and finish [Engineering Manager].
- 8 Make the communication ladder "high speed drawing" where "6" is set for [Dev-Typ]. <sup>™</sup> ◆ Ladder Program for Communication" (page 20)
- **9** Turn the DIP switch "INIT" of a communication module to ON, and supply the power.
- 10 Forward communication setting and a ladder program to a communication module.
- 11 Log on the PLC in online and write the transferred data to the flash memory.
- 12 Turn the PLC power and the INIT DIP switch to OFF. Then, turn the PLC power to ON.

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Please refer to the manual of the ladder software for more detail.

#### Ladder Program for Communication

	First scan after startup	
0000	—(F	Sets parameters in the first scan after startup.
0000 NL-1	SB000001==true	(Low-speed scan (DWG L): SB000003 High-speed scan (DWG H): SB000001)
INL-1		High-speed scall (DWG H). SB000001)
0004		Clears DWG registers to zero.
0001 0001	- FOR	Clears DWG registers to zero.
NL-2	Variable I Init 00000	
112 2	Max 00031	
	Step 00001	
0002	(STORE)	
0002 NL-3	Source 00000	
INL-3	Dest DW000001	
0003	(END_FOR)	
0003 NL-2		
0004	STORE	Sets the connection number.
0004	Source 00001	
NL-2	Dest DW00002	
0005	—( store )———	Sets the coil offset.
0005	Source 00000	
NL-2	Dest DW00008	
0006	(	Sets the input relay offset.
0006	Source 00000	
NL-2	Dest DW00009	
0007	- ()	Sets the input register offset.
0007	Source 00000	
NL-2	Dest DW00010	
0008		Sets the holding register offset.
0008 NL-2	Source 00000	
INL-2	Dest DW00011	
0009	(STORE)	Wright range: LO
0009	Source 00000	
NL-2	Dest DW00012	
0010	()	Wright range: HI
0010	Source 0000065534	
NL-2	Dest DW00013	
0011	-(_END_IF)	———
0011 NL-1		
INL-1		
		-



## 3.5 Setting Example 5

- Settings of GP-Pro EX
- Communication Settings

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

Device/PLC1		
Summary		Change Device/PLC
Maker VASKAWA Electric Corporation	Driver MEMOBUS Ethernet	Port Ethernet (TCP)
Text Data Mode 1 <u>Change</u>		
Communication Settings		
Port No. 🛛 🔂 🛃 🗹 Auto	2	
Timeout 3 📑 (sec)		
Retry 0 🚊		
Wait To Send 🛛 📑 (ms)	Default	
Device-Specific Settings		
Allowable No. of Device/PLCs 16 Unit(s) 📷		
	Settings       P Address=192.168.001.001,Port No.=1024,I	 Data Code=BINABY

#### Device Setting

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

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

💰 Individual D	🐔 Individual Device Settings 🛛 🛛 🔀				
PLC1					
IP Address Port No.	192. 168. 1024	1. 1			
Data Code	BINARY	C ASCII	Default		
		OK ( <u>0</u> )	Cancel		

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the display in the off-line mode of the display.

Communication setting of communication module CPU unit by ladder software. (Check the operation in MPE720 Ver.6)

- Ladder Software Setting
- 1 Start ladder software, make an order folder and a PLC folder in a root folder.

Select the connected PLC at the time of PLC folder making.

2 Click the right button of the PLC which select logon in the displayed menu.

**NOTE** • Logon after confirming that a check does not begin [online] of a displayed menu.

• Refer to User's Manual of the PLC about a method of logon.

- **3** Double-click the [Definition folder]-[Module constitution] of the PLC folder, and display [Engineering Manager].
- 4 Select the rack classification and link I/F, the pull-down menu in [Controller] of [Engineerring Manager]. Set the number corresponding to the slot number that a communication module uses. Select the communication module, setting contents are displayed to [Module details] of [Enginnering Manager].
- 5 Double-click the number part at No. in [Module details].

Double-click the slot number connecting the ethernet unit.

**6** Select [Transmission Parameters] tab, and set the setup items as follows.

Setup Items	Setting Value	
IP Address	192.168.1.2	
Subnet Mask	255.255.255.0	

- 7 Click [Easy Setting] in [Transmission Parameters] tab to display [Message Communication Easy Setting] dialog box.
- **8** Set the setup items as follows, and click [OK].

Setup Items	Setting Value
MP Series Port No.	1024
Communication protocol Type	Extended MEMOBUS
Connect Type	ТСР
Code	BIN
Node Port IP Address <sup>*1</sup>	192.168.1.1
Other Device Port No. <sup>*1</sup>	1024

\*1 Set the IP address and the port number of the Display. When you check the [Auto] of a port number in the communication setting of the GP-Pro EX, set the IP address and the port number to "0.0.0.0" and "00000", respectively.

- 9 Double-click [Setting] to display [Automatically Reception Setting] dialog box.
- 10 Select "Enable" of [Automatically Reception], and click [OK].
- **11** Turn the DIP switch "INIT" of a communication module to ON, and supply the power.
- 12 Forward communication setting and a ladder program to a communication module.
- **13** Log on the PLC in online and write the transferred data to the flash memory.
- 14 Turn the PLC power and the INIT DIP switch to OFF. Then, turn the PLC power to ON.

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Please refer to the manual of the ladder software for more detail.

## 3.6 Setting Example 6

## Settings of GP-Pro EX

Communication Settings

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

Device/PLC1		
Summary		Change Device/PLC
Maker VASKAWA Electric Corporation	Driver MEMOBUS Ethernet	Port Ethernet (UDP)
Text Data Mode 1 <u>Change</u>		
Communication Settings		
Port No. 1024 📑		
Timeout 3 📑 (sec)		
Retry 2		
Wait To Send 🛛 📑 (ms)	Default	
Device-Specific Settings		
Allowable No. of Device/PLCs 32 Unit(s)		
	5ettings [] IP Address=192.168.001.001,Port No.=1024,]	Data Code=BINARY
Communication Settings Port No. 1024 Timeout 3 Retry 2 Wait To Send 0 Device-Specific Settings Allowable No. of Device/PLCs 32 Unit(s) No. Device Name		Data Code=BINARY

#### Device Setting

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

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

💰 Individual D	evice Settings		×
PLC1			
IP Address Port No.	192. 168. 1024	1. 1	
Data Code	BINARY	C ASCII	Default
		OK ( <u>0</u> )	Cancel

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the display in the off-line mode of the display.

Communication setting of communication module CPU unit by ladder software. (Check the operation in MPE720 Ver.6)

- Ladder Software Setting
- 1 Start ladder software, make an order folder and a PLC folder in a root folder.

Select the connected PLC at the time of PLC folder making.

2 Click the right button of the PLC which select logon in the displayed menu.

**NOTE** • Logon after confirming that a check does not begin [online] of a displayed menu.

• Refer to User's Manual of the PLC about a method of logon.

- **3** Double-click the [Definition folder]-[Module constitution] of the PLC folder, and display [Engineering Manager].
- 4 Select the rack classification and link I/F, the pull-down menu in [Controller] of [Engineerring Manager]. Set the number corresponding to the slot number that a communication module uses. Select the communication module, setting contents are displayed to [Module details] of [Enginnering Manager].
- 5 Double-click the number part at No. in [Module details].

Double-click the slot number connecting the ethernet unit.

**6** Select [Transmission Parameters] tab, and set the setup items as follows.

Setup Items	Setting Value
IP Address	192.168.1.2
Subnet Mask	255.255.255.0

- 7 Click [Easy Setting] in [Transmission Parameters] tab to display [Message Communication Easy Setting] dialog box.
- **8** Set the setup items as follows, and click [OK].

Setup Items	Setting Value
MP Series Port No.	1024
Communication protocol Type	Extended MEMOBUS
Connect Type	UDP
Code	BIN
Node Port IP Address <sup>*1</sup>	192.168.1.1
Other Device Port No. <sup>*1</sup>	1024

\*1 Set the IP address and the port number of the Display.

- 9 Double-click [Setting] to display [Automatically Reception Setting] dialog box.
- 10 Select "Enable" of [Automatically Reception], and click [OK].
- **11** Turn the DIP switch "INIT" of a communication module to ON, and supply the power.
- 12 Forward communication setting and a ladder program to a communication module.
- 13 Log on the PLC in online and write the transferred data to the flash memory.
- 14 Turn the PLC power and the INIT DIP switch to OFF. Then, turn the PLC power to ON.

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Please refer to the manual of the ladder software for more detail.

## 3.7 Setting Example 7

## Settings of GP-Pro EX

Communication Settings

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

Device/PLC 1		
Summary		Change Device/PLC
Maker VASKAWA Electric Corporation	Driver MEMOBUS Ethernet	Port Ethernet (TCP)
Text Data Mode 1 <u>Change</u>		
Communication Settings		
Port No. 🛛 🔂 🛃 🗹 Auto	2	
Timeout 3 📑 (sec)		
Retry 0 🚍		
Wait To Send 🛛 📑 (ms)	Default	
Device-Specific Settings		
Allowable No. of Device/PLCs 16 Unit(s)		
	Settings       P Address=192.168.001.001,Port No.=1024,D	 Data Code=BINARY

#### Device Setting

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

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

💰 Individual D	evice Settings		×
PLC1			
IP Address Port No.	192. 168. 1024	1. 1	
Data Code	BINARY	C ASCII	Default
		OK ( <u>0</u> )	Cancel

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the display in the off-line mode of the display.

Communication setting of communication module 218IF-02 by ladder software. (Check the operation in MPE720 Ver.5.32)

- Ladder Software Setting
- 1 Start ladder software, make an order folder and a PLC folder in a root folder.

Select the connected PLC at the time of PLC folder making.

2 Click the right button of the PLC which select logon in the displayed menu.

**NOTE** • Logon after confirming that a check does not begin [online] of a displayed menu.

• Refer to User's Manual of the PLC about a method of logon.

- **3** Double-click the [Definition folder]-[Module constitution] of the PLC folder, and display [Engineering Manager].
- 4 Select the rack classification and link I/F, the pull-down menu in [Controller] of [Engineerring Manager]. Set the number corresponding to the slot number that a communication module uses. Select the communication module, setting contents are displayed to [Module details] of [Enginnering Manager].
- 5 Double-click the number part at No. in [Module details].

Double-click the slot number connecting the ethernet unit.

Setup Items		Setup Description
Transmission parameter This Station IP address		PLC IP address
	My Port	PLC port No.
Connection	DST. IP Address <sup>*1</sup>	GP-Pro EX IP address
	DST. Port <sup>*1</sup>	GP-Pro EX port No.
Connection parameter	Connection type	ТСР
	Protocol type	expansion memobus
	Code	BIN

\*1 When you check the [Auto] of a port number in the communication setting of the GP-Pro EX, set the IP address and the port number to "0.0.0.0" and "00000", respectively.

6 Double-click the "No.1", and set serial communication.

Use serial communication setting to forward communication setting and the ladder program to the PLC.

- 7 Save setting content and finish [Engineering Manager].
- 8 Make the communication ladder "high speed drawing" where "16" is set for [Dev-Typ].
  - \*\* Adder Program for Communication" (page 30)
- **9** Turn the DIP switch "INIT" of a communication module to ON, and supply the power.
- 10 Forward communication setting and a ladder program to a communication module.
- **11** Log on the PLC in online and write the transferred data to the flash memory.
- 12 Turn the PLC power and the INIT DIP switch to OFF. Then, turn the PLC power to ON.

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Please refer to the manual of the ladder software for more detail.

#### Ladder Program for Communication

	First scan after startup	
0000		Sets parameters in the first scan after startup.
0000	SB000001==true	(Low-speed scan (DWG L): SB000003 High-speed scan (DWG H): SB000001)
NL-1		High-speed scall (DWG H). SB000001)
0004		Clears DWG registers to zero.
0001 0001		Clears DWG registers to zero.
NL-2	∨ariable I Init 00000	
112 2	Max 00031	
	Step 00001	
	, 	
0002	(STORE)	
0002 NL-3	Source 00000	
INL-3	Dest DW000001	
0003 · 0003	(END_FOR)	
NL-2		
112 2		
0004	STORE	Sets the connection number.
0004	Source 00001	
NL-2	Dest DW00002	
0005		Sets the coil offset.
0005	Source 00000	
NL-2	Dest DW00008	
0006	- (	Sets the input relay offset.
0006	Source 00000	
NL-2	Dest DW00009	
0007	-(	Sets the input register offset.
0007 NL-2	Source 00000	
INL-2	Dest DW00010	
0008 0008		Sets the holding register offset.
0008 NL-2	Source 00000 Dest DW00011	
	Dest DW00011	
0009		Wright range: LO
0009 NL-2	Source 00000	
INL-2	Dest DW00012	
		Which transmit II
0010		Wright range: HI
0010 NL-2	Source 0000065534	
	Dest DW00013	
0044		
0011 0011	-(_END_IF)	
NL-1		

0013 0018 NL-1	Stop Normal Abnormal command completion completion Comm SB000004 DB000202 DB000211 DB000212 DB00	0201
0014 0023 NL-1	MSG-RCV           Excute         DB000201         Busy         DB000210           Abort         DB000202         Complete         DB000211           Dev-Typ         00016         Error         DB000212           Pro-Typ         00001         Cir-No         00001           Ch-No         00001         Param         DA00000	The BUSY coil terns ON when the CPU receives a command. The COMPLETE or ERROR coil turns ON at the completion of processing. Set Pro-Typ = 1 for Extended MEMOBUS or MELSEC. Set ch-No = The same numerical value as source of connection number setting (fourth line).
0015 0024 NL-1	Normal completion IF DB000211==true	Normal completion
0016 0025 NL-2	Dest DW00024	
0017 0026 NL-1	Abnormal completion	
0018 0027 NL-1	DB000212==true	Abnormal completion
0019 0028 NL-2	Dest DW00025	
0020 0029 NL-2	Source DW00000 Dest DW00026	Stores the processing results.
0021 0030 NL-2	Source DW00001 Dest DW00027	Stores the status.
0022 0031 NL-1		
0023 0032 NL-1	END	

## 3.8 Setting Example 8

- Settings of GP-Pro EX
- Communication Settings

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

Device/PLC 1	
Summary Change Device/PLC	
Maker VASKAWA Electric Corporation Driver MEMOBUS Ethernet Port Ethernet (UDP)	
Text Data Mode 1 Change	
Communication Settings	
Port No. 1024 📑	
Timeout 3 😑 (sec)	
Retry 2	
Wait To Send 0 📑 (ms) Default	
Device-Specific Settings	
Allowable No. of Device/PLCs 32 Unit(s) 📊	
No.         Device Name         Settings           1         PLC1         IP Address=192.168.001.001,Port No.=1024,Data Code=BINARY	_

#### Device Setting

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

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

💰 Individual D	evice Settings		×
PLC1			
IP Address Port No.	192. 168. 1024	1. 1	
Data Code	BINARY	🔿 ASCII	Default
		OK ( <u>0</u> )	Cancel

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the display in the off-line mode of the display.

Communication setting of communication module 218IF-02 by ladder software. (Check the operation in MPE720 Ver.5.32)

- Ladder Software Setting
- 1 Start ladder software, make an order folder and a PLC folder in a root folder.

Select the connected PLC at the time of PLC folder making.

2 Click the right button of the PLC which select logon in the displayed menu.

**NOTE** • Logon after confirming that a check does not begin [online] of a displayed menu.

• Refer to User's Manual of the PLC about a method of logon.

- **3** Double-click the [Definition folder]-[Module constitution] of the PLC folder, and display [Engineering Manager].
- 4 Select the rack classification and link I/F, the pull-down menu in [Controller] of [Engineerring Manager]. Set the number corresponding to the slot number that a communication module uses. Select the communication module, setting contents are displayed to [Module details] of [Enginnering Manager].
- 5 Double-click the number part at No. in [Module details].

Double-click the slot number connecting the ethernet unit.

Setu	Setup Description	
Transmission parameter This Station IP address		PLC IP address
Connection parameter	My Port	PLC port No.
	DST. IP Address	GP-Pro EX IP address
	DST. Port	GP-Pro EX port No.
	Connection type	UDP
	Protocol type	expansion memobus
	Code	BIN

6 Double-click the "No.1", and set serial communication.

Use serial communication setting to forward communication setting and the ladder program to the PLC.

- 7 Save setting content and finish [Engineering Manager].
- 8 Make the communication ladder "high speed drawing" where "16" is set for [Dev-Typ]. <sup>(C)</sup> 
  <sup>(C)</sup>
- **9** Turn the DIP switch "INIT" of a communication module to ON, and supply the power.
- 10 Forward communication setting and a ladder program to a communication module.
- 11 Log on the PLC in online and write the transferred data to the flash memory.
- 12 Turn the PLC power and the INIT DIP switch to OFF. Then, turn the PLC power to ON.

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Please refer to the manual of the ladder software for more detail.

#### Ladder Program for Communication

	First scan after startup	
0000		Sets parameters in the first scan after startup.
0000 NL-1	SB000001==true	(Low-speed scan (DWG L): SB000003 High-speed scan (DWG H): SB000001)
INL-I		high-speed scan (Dwo H). Oboooot)
0001		Clears DWG registers to zero.
0001	Variable I	Clears DWG registers to zero.
NL-2	Init 00000	
	Max 00031	
	Step 00001	
0002	STORE	
0002	Source 00000	
NL-3	Dest DW000001	
	Dest Diversion	
0003	(END FOR)	
0003		
NL-2		
0004		Sets the connection number.
0004 NL-2	Source 00001	
INL-2	Dest DW00002	
0005		Sets the coil offset.
0005	Source 00000	
NL-2	Dest DW00008	
	2000 2000000	
0006		Sets the input relay offset.
0006	Source 00000	
NL-2	Dest DW00009	
0007	- ( STORE )	Sets the input register offset.
0007	Source 00000	
NL-2	Dest DW00010	
8000	STORE	Sets the holding register offset.
8000	Source 00000	
NL-2	Dest DW00011	
0009	STORE	Wright range: LO
0009	Source 00000	
NL-2	Dest DW00012	
0010	C STORE	Wright range: HI
0010	Source 0000065534	
NL-2	Dest DW00013	
0011	-( END_IF)	
0011 NL-1		
INL-I		

0013 0018 NL-1	SB000004 DB000202 DB000211 DB000212 DB0	nmand 00201 )
0014 - 0023 NL-1	MSG-RCV           Excute         DB000201         Busy         DB000210           Abort         DB000202         Complete         DB000211           Dev-Typ         00016         Error         DB000212           Pro-Typ         00001         Cir-No         00001           Ch-No         00001         Param         DA00000	The BUSY coil terns ON when the CPU receives a command. The COMPLETE or ERROR coil turns ON at the completion of processing. Set Pro-Typ = 1 for Extended MEMOBUS or MELSEC. Set ch-No = The same numerical value as source of connection number setting (fourth line).
0015 0024 NL-1	Normal completion IF DB000211==true	Normal completion
0016 0025 NL-2	Dest DW00024	
0017 0026 NL-1	Abnormal completion	
0018 0027 NL-1	IF DB000212==true	Abnormal completion
0019 0028 NL-2	Dest DW00025	
0020 0029 NL-2	STORE Source DW00000 Dest DW00026	Stores the processing results.
0021 0030 NL-2	Source DW00001 Dest DW00027	Stores the status.
0022 · 0031 NL-1	END_IF)	
0023 0032 NL-1	()	

## 4 Setup Items

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

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

"3 Example of Communication Setting" (page 6)

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.

Device/PLC 1	
Summary Ch.	ange Device/PLC
Maker VASKAWA Electric Corporation Driver MEMOBUS Ethernet Port	Ethernet (TCP)
Text Data Mode 1 Change	
Communication Settings	
Port No. 1024 🚔 🗹 Auto	
Timeout 3 💼 (sec)	
Retry 0	
Wait To Send 0 👘 (ms) Default	
Device-Specific Settings	
Allowable No. of Device/PLCs 16 Unit(s)	
No. Device Name Settings           No.         Device Name         Settings           1         PLC1         III PAddress=192.168.001.001, Port No.=1024, Data Control	de=BINARY

Setup Items	Setup Description
Port No.	Enter a port number of the External Device, using 1024 to 65535. Check into [Auto], and a port number is set automatically.           NOTE           Set the [Auto], when select the [Ethernet (TCP)] in [Connection Method] only.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which Display waits for the response from 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 I ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

💰 Individual D	evice Settings		×
PLC1			
IP Address Port No.	192. 168. 1024	1. 1	
Data Code	BINARY	C ASCII	Default
		OK ( <u>0)</u>	Cancel

Setup Items	Setup Description
IP Address	<ul> <li>Set IP address of the External Device.</li> <li><b>NOTE</b></li> <li>Check with a network administrator about IP address. Do not set the duplicate IP address.</li> </ul>
Port No.	Enter a port number of the External Device, using 256 to 65534.
Data Code	Select the data format in communication with the PLC.

## 4.2 Setup Items in Off-Line Mode



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

Cf. Maintenance/Troubleshooting Manual "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			
				Ĭ
MEMOBUS Ethernet			[TCP]	Page 1/1
	Port No.	Fixed	• Auto	
			1024 💌 🔺	
	Timeout(s)		3 🔻 🔺	
	Retry Wait To Send(ms)			
	_			2006/01/21
	Exit		Back	2006/01/31 15:42:04

Setup Items	Setup Description
Port No.	Enter a port number of the GP-Pro EX. The port number that input is assigned without being concerned with select of "Fixed" "Auto" by UDP connection. Select either of "Fixed" "Auto" by TCP connection. Enter a port number of the GP-Pro EX with "1024-65535", when select "Fixed". Assign automatically without affecting the input value, when select "Auto".
Timeout	Use an integer from 1 to 127 to enter the time (s) for which Display waits for the response from External Device.
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

## Device Setting

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

Comm.	Device			
MEMOBUS Ethernet			[TCP]	Page 1/1
Device	/PLC Name PLC	1		
	IP Address	192 168	1 1	
	Port No.		1024 💌 🔺	
	Data Code	• BINARY	ASCII	
				0886781701
	Exit		Back	2006/01/31 15:42:07

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	<ul> <li>Set IP address of the External Device.</li> <li><b>NOTE</b></li> <li>Check with a network administrator about IP address. Do not set the duplicate IP address.</li> </ul>
Port No.	Enter a port number of the External Device, using 256 to 65534.
Data Code	Select the data format in communication with the PLC.

This address can be specified as system data area.

# 5 Supported Device

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

Device	Bit address	Word address	32 bits	Remarks
Enhancing Coil	EGMB000000 - EGMB65534F	EGMB00000 - EGMB65534		*1
Enhancing Input Relay	EGIB00000 - EGIB7FFFF	EGIB0000 - EGIB7FFF		*2
Coil	GMB00000 - GMB4095F	GMB0000 - GMB4095		
Input Relay	GIB00000 - GIB0FFFF	GIB0000 - GIB0FFF	<u>[[]   H</u>	*2
Input Register		GIW0000 - GIW7FFF		<u>B i t</u> F] *2
Holding Register		GMW00000 - GMW65534		вit F

E

\*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

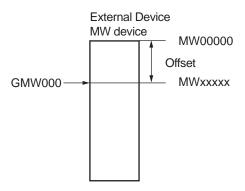
\*2 Write disable

The address of GP becomes the address which added an offset to the real address of the PLC.

Device	Display on GP-Pro EX	Display on PLC
Enhancing Coil (Bit device)	EGMB000000 - EGMB65534F	MW000000+Offset - MW65534F+Offset
Enhancing Coil (Word device)	EGMB00000 - EGMB65534	MW00000+Offset - MW65534+Offset
Coil (Bit device)	GMB00000 - GMB4095F	MB00000+Offset - MB4095F+Offset
Coil (Word device)	GMB0000 - GMB4095	MB0000+Offset - MB4095+Offset
Enhancing Input Relay (Bit device)	EGIB00000 - EGIB7FFFF	IW00000+Offset - IW7FFFF+Offset
Enhancing Input Relay (Word device)	EGIB0000 - EGIB7FFF	IW0000+Offset - IW7FFF+Offset
Input Relay (Bit device)	GIB00000 - GIB0FFFF	IB00000+Offset - IB0FFFF+Offset
Input Relay (Word device)	GIB0000 - GIB0FFF	IB0000+Offset - IB0FFF+Offset
Input Register	GIW0000 - GIW7FFF	IW0000+Offset - IW7FFF+Offset
Holding Register	GMW00000 - GMW65534	MW00000+Offset - MW65534+Offset

Address relations of GP and PLC are as follows.

e.g) When you specify "GMW00000" in GP-Pro EX, the address of "MW00000" to which offset value is added, is specified as the actual address in the External Device. Offset value is described as "Head REG" in the ladder software.



**NOTE** • Please refer to the GP-Pro EX Reference Manual for system data area.

Cf. GP-Pro EXReference 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.

Device	Device Name	Device Code (HEX)	Address Code
Coil	GMB	0080	Word Address
Input Relay	GIB	0081	Word Address
Enhancing Coil	EGMB	0090	Word Address
Enhancing Input Relay	EGIB	0091	Word Address
Input Register	GIW	0001	Word Address
Holding Register	GMW	0000	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	Displays IP address or device address of External Device where error occurs, or error codes received from External Device.	
	<ul> <li>NOTE</li> <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 Peculiar to PLC

The error code peculiar to PLC is as follows.

Error	Code cause	
01	Function code error	
02	Address error for coil, input relay and register	
03	Number error for coil, input relay and register	