

Q.

How to connect one Yaskawa Ethernet device with multiple HMIs?

The communication speed was slower in the past when connecting a Yaskawa device with multiple HMIs since all HMIs share one communication port, and the number of packages can be sent with one port is limited.

This FAQ explains how to program PLC and HMI in order to improve the communication speed when connecting Yaskawa Memobus device with multiple HMIs via Ethernet.

A.

The following steps show the settings of Yaskawa software and EasyBuilder.

Yaskawa software settings

- Step 1.** Open Yaskawa MPE720, click [Module Configuration] to open configuration dialog box.
- Step 2.** Under [Controller] select [218IF-02], and under [Module Details] double-click slot number 2 to configure.

Module Configuration MP2200 Online Local

PT#: 3 CPU#: 1

Select Rack	Enable/Disable
Rack 1	Enable
Rack 2	Disable
Rack 3	Disable
Rack 4	Disable

Controller

Rack 1 | Rack 2 | Rack 3 | Rack 4 | **1**

Slot Number	00	01	02	03	04	05	06
Module Type	CPU-01	SVB-01	218IF-02	LIO-04	LIO-01	AI-01	AO-01
Status	Unsetting	Unsetting	Unsetting	Unsetting	Unsetting	Unsetting	Unsetting

218IF-02 : The Module has Ethernet, RS232 in functions.

Module Details 218IF-02 RACK#01 SLOT#02 - **2**

Slot Number	1	2
Module Type	217IF	218IFB
Circuit Number	01	01
I/O Start Register	----	----
I/O End Register	----	----
Motion Start Register	----	----
Motion End Register	----	----
Details		
Status	Unsetting	Running

Step 3. The number of Local Port depends on the number of HMIs to connect. Each Local Port is assigned to one HMI to prevent slowing the communication speed by sharing one port with multiple HMIs.

218IFB MP2200 Online Local

PT#: 3 CPU#: 1 RACK#01 Slot #02 CIR#01

Transmission Parameters | Status

Transmission Parameters

IP Address : 192 . 168 . 1 . 5 (0-255)

Subnet Mask : 255 . 255 . 255 . 0 (0-255)

Gateway IP Address : 0 . 0 . 0 . 0 (0-255)

Module Name Definition

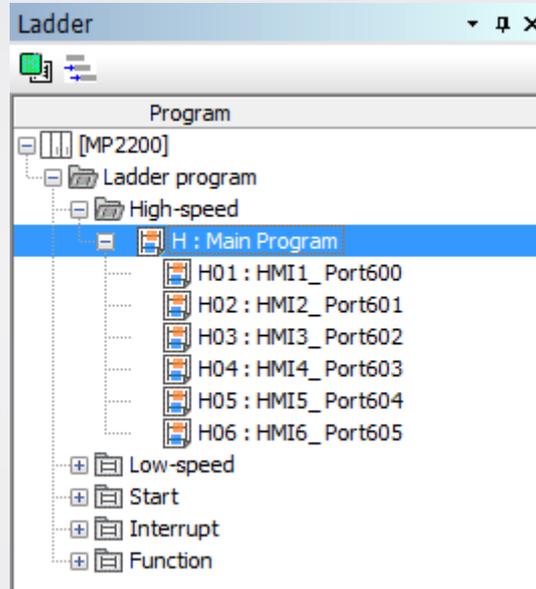
Equipment Name : CONTROLLER NAME

Detail Definition

Connection Parameter

CNO	Local Port	Node IP Address	Node Port	Connect Type	Protocol Type	Code	Detail
01	00600	000.000.000.000	00000	TCP	MEMOBUS	RTU	Setting
02	00601	000.000.000.000	00000	TCP	MEMOBUS	RTU	Setting
03	00602	000.000.000.000	00000	TCP	MEMOBUS	RTU	Setting
04	00603	000.000.000.000	00000	TCP	MEMOBUS	RTU	Setting
05	00604	000.000.000.000	00000	TCP	MEMOBUS	RTU	Setting
06	00605	000.000.000.000	00000	TCP	MEMOBUS	RTU	Setting
07	00606	000.000.000.000	00000	TCP	MEMOBUS	RTU	Setting
08	----						Setting
09	----						Setting
10	----						Setting
11	----						Setting

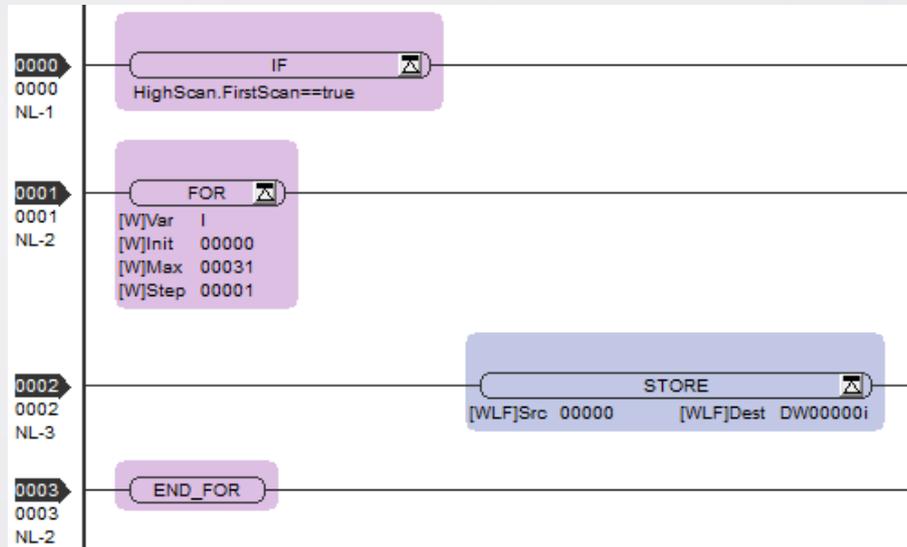
Step 4. Under [Program] click [Ladder Program] » [High-speed] » [Main Program] » [New] to configure. A ladder program should be built each time when adding a HMI.



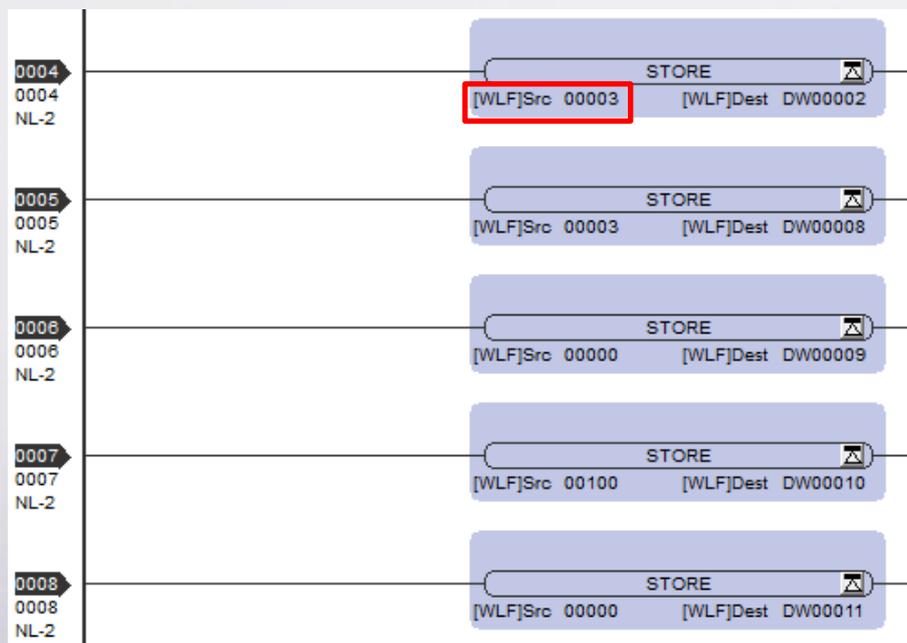
Step 5. Open [Main Program] and create SEE commands to assign the Sub Program for each port, as in the following figure.



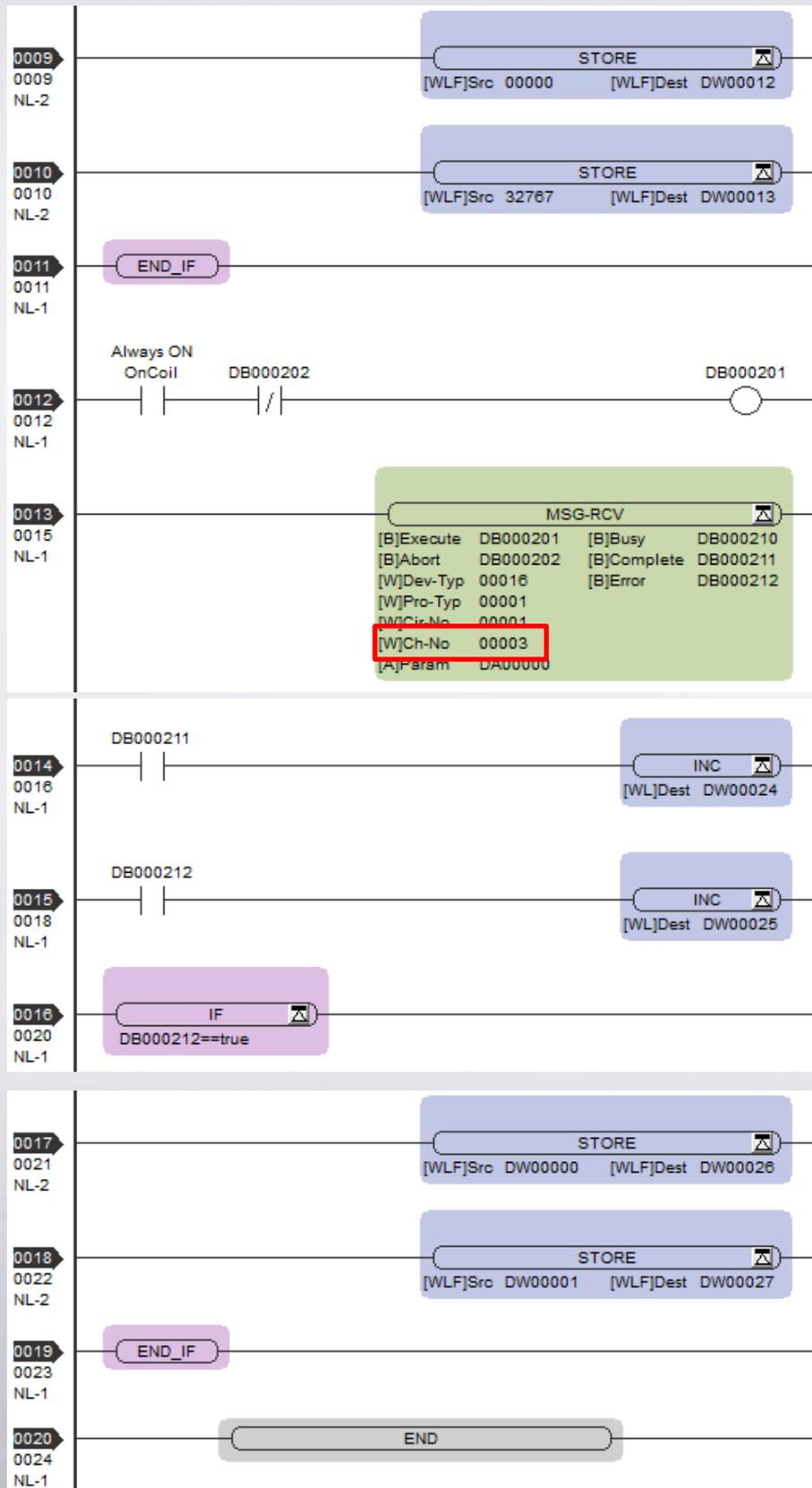
Step 6. Open Sub Program (the following uses HMI 3 as an example) to build the following commands. The channel number of the assigned HMI is displayed as shown in the following figure.



Clear DW register, the value is 0.



Assign channel number



Assign channel number

EasyBuilder communication settings

Step 1. Open EasyBuilder, select [YASKAWA MP Series Memobus (Ethernet)] in PLC type.

Device Properties

Name : YASKAWA MP Series Memobus (Ethernet)

HMI PLC

Location : Local Settings ...

PLC type : YASKAWA MP Series Memobus (Ethernet)
V.1.00, MEMOBUS_ETHERNET.si

PLC I/F : Ethernet

IP : 192.168.1.5, Port=602 Settings...

Use UDP (User Datagram Protocol)

PLC default station no. : 1

Default station no. use station no. variable

Use broadcast command

Interval of block pack (words) : 5

Max. read-command size (words) : 125

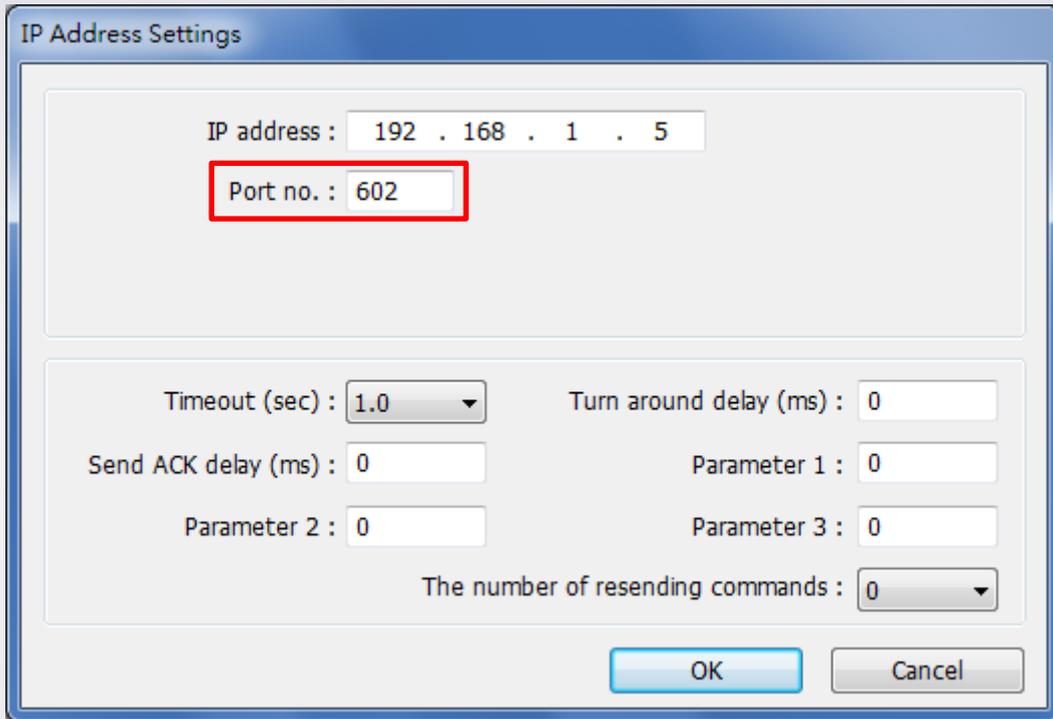
Max. write-command size (words) : 100

Sequence of events

Enable

OK Cancel

Step 2. Connect each HMI with Yaskawa PLC by using different ports.



The image shows a software dialog box titled "IP Address Settings". It contains several input fields and dropdown menus. The "IP address" field is set to "192 . 168 . 1 . 5". The "Port no." field is set to "602" and is highlighted with a red rectangular border. Below these, there are fields for "Timeout (sec)" (set to "1.0"), "Turn around delay (ms)" (set to "0"), "Send ACK delay (ms)" (set to "0"), "Parameter 1" (set to "0"), "Parameter 2" (set to "0"), "Parameter 3" (set to "0"), and "The number of resending commands" (set to "0"). At the bottom right, there are "OK" and "Cancel" buttons.

For the details of PLC commands please visit Yaskawa official website:
http://www.yaskawa.com/global_home.html