# Industrial Automation Yaskawa MP2000iec Controller Tech Note 40



## Abstract

This document describes how to configure the Crimson<sup>®</sup> driver for the Yaskawa MP2000iec Controller connected via Ethernet.

## **Products:**

CR1000 HMI / CR3000 HMI / Graphite<sup>®</sup> HMI / Graphite Controller / PTV / Data Station Plus

## Use Case / Problem Solved

How to establish communication and access the various data types present in the Yaskawa MP2000iec controller.

### **Required Software:**

Crimson 3.0 or Crimson 3.1

## **Required Firmware:**

Crimson 3.0, Build 252 or higher; Crimson 3.1, All Builds

#### **Configure Ethernet in Crimson**

- Referencing Figure 1, go to the Navigation Pane and enable the Ethernet port in the Communications section of Crimson by navigating to Communications > Network > Ethernet1 (or Ethernet 2), as shown in Figure 1. The Communications - Network window is displayed.
- 2. Specify the IP Address, Network Mask, and Gateway, as applicable.

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Navigation Pane X	Communications - Network			
🔏 New 🗸 📉	Ethernet 1 Ethernet 2 TLS - SSL Routing Download Add Ports			
Communications	Port Settings			
=() RS-232 Program Port =() RS-485 Comms Port	Ded Made			
=0 RS-232 Comms Port				
🖃 🐢 Network	IP Address: 192.168.1.20			
💡 Protocol 1	Network Mask: 255.255.255.0			
Protocol 2	Gateway 0.0.0.0			
Protocol 4				
🖃 🖨 USB Host Ports	DNS Settings			
Memory Stick	DNS Mode: Dirabled			
Keyboard	Disabled V			
Services	Name Server 1: 0.0.0.0			
Time Manager	Name Server 2: 0.0.0.0			
OPC Proxy				
FTP Server	Physical Layer			
Mail Manager	Full Duplex: Enabled			
SQL Sync	High Speed: Enabled			
Comms Modules	rightspeed endoted			
Slot 1	Maximum Segment Size			
slot 3	For Sandy 1290			
Slot 4				
Slot 5	For Receive: 1280			
Slot 6				
Communications				
- P&				
🧧 Data Tags				
Search 2014				
Programs				
Web Server				
Data Logger				
Security				
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Figure 1.



- 3. From the Navigation Pane, select Protocol 1; the Driver Picker for Ethernet Port popup is displayed, as shown in Figure 2.
- 4. Select the Yaskawa TCP/IP MP2000iec driver from the popup and click OK.

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Eile Edit View Go Link Help				
Navigation Pane X	Communications - Network - Protocol 1			
Communications Communications	Driver Selection Driver: No Driver Selected Pick Port Commands Drive Nd and a data			
Frotocol 1         Frotocol 2         Frotocol 3         Frotocol 4         Get B Host Ports         ■ Memory Stick	Clear Port Settings Add Additional Device			
<ul> <li>Keyboard</li> <li>Mouse</li> <li>Services</li> <li>Time Kanager</li> <li>PC Provy</li> <li>FTP Server</li> <li>Sync Kanager</li> <li>SQL Sync</li> <li>Comms Modules</li> <li>Slot 1</li> <li>Slot 2</li> <li>Slot 3</li> <li>Slot 4</li> <li>Slot 5</li> <li>Slot 6</li> <li>Tethered Rack</li> </ul>	Driver Picker for Ethernet Port         Manufacturer         Phoenic Contact         PLC Direct Koyo         PFV Vision         Red Lion         Schneider         Siemens         SNMP         Toshiba         Vintronics         Yamaha         Yokogawa         OK         Cancel			
Communications				
Display Pages				
Web Server				
Data Logger				
Security				
Control				
Port Number 5				

Figure 2.



- 5. A new device called "MP1" is created in the Navigation Pane, as shown in Figure 3.
- **6.** Click on MP1, which displays the popup specifying the communications settings for the newly-created device, as shown in Figure 3.

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Navigation Pane X	Communications - Network - Protocol	1 - MP1		
🔏 New 🕶 🗙	Device Settings			
Communications	Enable Device: Ves			
=() RS-485 Comms Port				
RS-232 Comms Port	Device Identification			
The Work     The Work	IP Address: 192.168.1.52			
MP1	TCP Port: 502			
Protocol 2	Unit Number: 1			
Protocol 4				
Memory Stick	Protocol Options			
I Keyboard	Link Type: Use Dedic	ated Socket 🔻		
E Services	Connection Timeout: 5000	ms ms		
Time Manager	Connection Backoff: 200	M ms		
FTP Server	Transaction Timeout: 2500	ms ms		
Sync Manager				
SQL Sync	Data Control	- toront		
Comms Modules	%IX-Byte 0 (000000):	24560		
Slot 2	%I-Byte 0 (400000):	24576		
Slot 3	%I/%Q-Byte 0 (401024):			
Slot 5	Write Control: %I only			
Slot 6	%QX(Read Only)-Byte 0 (100000):	24560		
	%Q(Read Only)-Byte 0 (300000):	24576		
Communications	Word Ordering:			
Data Tags	Swap Bytes In Words:	Yes 👻		
Display Pages	Advanced Settings			
	Spapping Peads: Epobles			
Programs	Transactional Writer			
Web Server	Presempt Other Devicers			
Data Logger	Enver III Writer			
😡 Security	Comms Delay: 0 ms			
🔒 sql	Device Commands			
Control	Delete This Device			
	Add Gateway Block			
Port Number 5 Device Number 2				

Figure 3.

7. Ensure that the Unit Number and Data Control values correspond to those required by the MP2000iec Controller. (Refer to Yaskawa MP2000iec Controller documentation for specific values, as necessary.)



- 8. Create a new Flag tag from the Navigation Pane, as shown in Figure 4.
- **9.** Select the new tag, Tag1, and select the Data tab and change the Source from *Internal* to *MP1*. The parameters popup is displayed, as shown in Figure 4.
- **10.**The example shown in the parameters popup lists all available data types, with the IX input bit option (Input Bit/Memory Location) selected. Select *OK* after making the data type selection.



Figure 4.



- 11. With reference to the Parameter heading within the popup, the upper line contains the prefix corresponding to the item just selected from the Data Item list (IX in this example). To its right is the IEC address, if an IEC item is selected; or the Modbus address, if a Modbus item is selected. The middle line contains the equivalent Modbus address in an entry box. The lower line contains the Update Modbus and Update Parameter buttons. When selected, the Update Modbus button converts the upper address to the equivalent Modbus address (as specified in the middle line). When selected, the Update Parameter button converts the middle Modbus address to the appropriate value for the upper line. When Update Parameter is selected, if the Modbus value does not equate to a suitable value, the minimum value will be selected, instead.
  - **NOTE:** For an IEC value in the upper field, a Word address must be an even number from the start of the IEC parameter selected. Modbus addresses are consecutive.
- **12.**A Long, or 32-Bit Real must be a multiple of 4 from the start of the block. Modbus addresses are even numbers.
- **13.**An LReal (64-Bit Real) must be a multiple of 8 from the start of the block. Modbus addresses are multiples of 4 from the start of the Modbus block.

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