

Application Note

Configuring an MPiec Series Controller for EtherNet/IP Communication to an SMC EX250-SEN1 device

Applicable Product: MPiec Series Controllers

Subject: Application Note	Product: MPiec	Doc#: AN.MP2000iec.03
Title: Configuring an MPiec Series Controller for EtherNet/IP Communication to an SMC EX250-SEN1 device		

Application Overview

This document details the steps required to configure the MPiec Series Controller as an EtherNet/IP scanner to an SMC EX250-SEN1 adapter device.

Application Highlights:

Industry: EtherNet/IP protocol users
 Major Features: MPiec Series Controller communicating with an SMC device via EtherNet/IP

Products Used:

Component	Product and Model Number
Controller	MP2300Siec
Software	MotionWorks IEC Pro
Third Party Devices	SMC EX250-SEN1



Figure 1: EtherNet/IP communication

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The MPiec Series Controller is configured as a scanner in this communication set up. The SMC pneumatic device with built in adapter driver will respond to requests sent by the MPiec Series Controller. Follow the steps to configure the MPiec Series Controller.

1. Verify that both devices are on the same sub network. The MPiec Subnet mask can be verified from the MotionWorks IEC Hardware Configuration or the web server page.

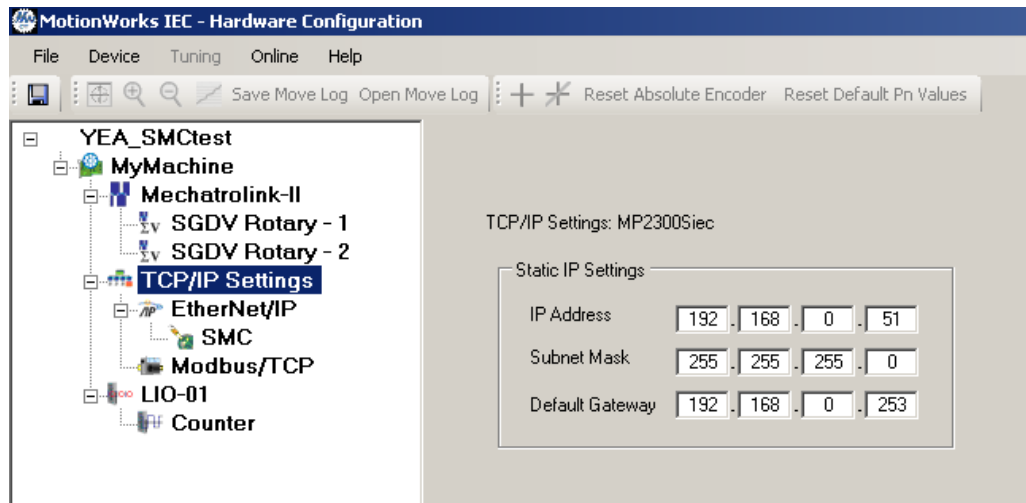


Figure 2: Hardware Configuration TCP/IP Settings

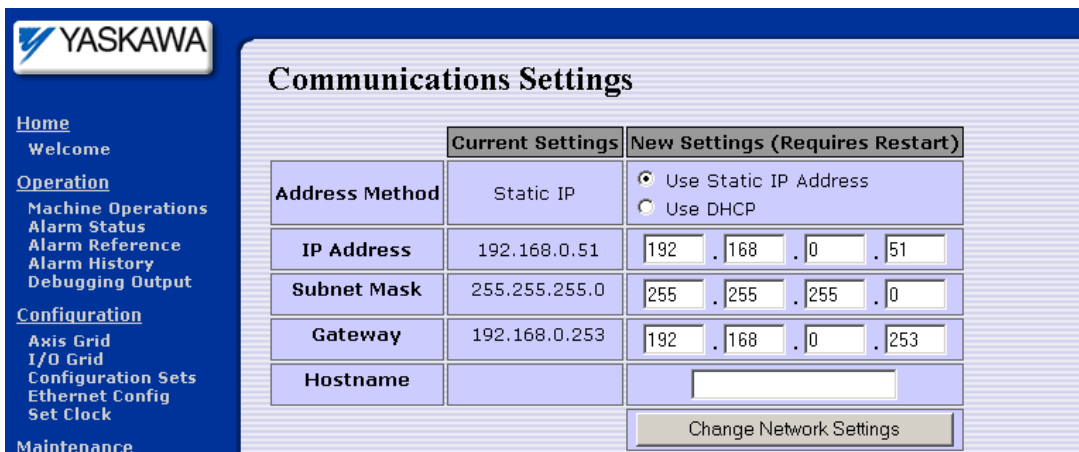
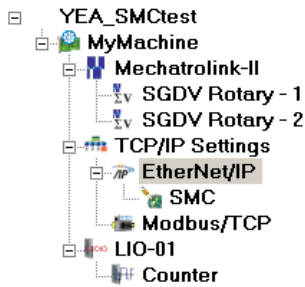


Figure 3: Web server – Ethernet Config

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2. Add the SMC as an adapter device in the MotionWorks IEC Hardware Configuration by doing the following:
 - a. Name the device
 - b. Enter the SMC's IP address
 - c. Create an IO group name
 - d. Assign the SMC data to an IEC application task
 - e. Give it a status variable name.



Configure Controller as an EtherNet/IP Adapter

Input Assembly Instances (Originator to Target)

Enabled	Instance	Size (bytes)
<input type="checkbox"/>	111	128
<input type="checkbox"/>	112	256
<input type="checkbox"/>	113	128
<input type="checkbox"/>	114	256
<input type="checkbox"/>	115	128
<input type="checkbox"/>	116	256

Output Assembly Instances (Target to Originator)

Enabled	Instance	Size (bytes)
<input type="checkbox"/>	101	128
<input type="checkbox"/>	102	256
<input type="checkbox"/>	103	128
<input type="checkbox"/>	104	256
<input type="checkbox"/>	105	128
<input type="checkbox"/>	106	256

Note: Instances are generic. Select an instance and size to match your EtherNet/IP Scanner configuration.

I/O Task Assignment:

Scanner Timeout Multiplier:

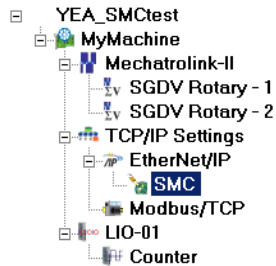
EtherNet/IP Adapters

Name	IP Address	I/O Group	Task	Status Variable	Comment
SMC	192.168.0.3	grp1	IOTask	stat1	

Figure 4: Adding the SMC as an adapter

3. Configure the IO assembly instances and the configuration assembly instance as shown in figure 5. The update interval can be chosen as per the application requirement.

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SMC

I/O Assembly Instances

Type	Instance #	Size (bytes)	Update Interval (ms)	Ownership	Priority	Connection	Use Run Idle
Input	100	6	20	Exclusive	Scheduled	Multicast	False
Output	150	4	20	Exclusive	Scheduled	Point to Point	True

[Add Input/Output Assembly Instance](#)

Configuration Assembly Instance

Type	Instance #	Size (bytes)	Optional Data (hexadecimal)
Config	1	0	

[Add Configuration Assembly Instance](#)

Figure 5: IO and configuration assembly instances

4. Save the configuration. Disconnect from MPiec Series Controller and cycle power.
5. The adapter will be ready for use.
6. The Global Variable list will now contain IO groups created by the Hardware Configuration. The status variable will also be added to the input group. Add input and output variables to the respective groups. Assign addresses based on their location in the instances such that they are mapped correctly between the two devices. An example is shown in figure 6:

[< SMC> 'igrp1' Address Range: %IB4 - %IB9 (* Do Not Modify Group Name or Status Variable!! *)					
stat1	WORD	VAR_GLOBAL	(* Do Not Modify!! *) SMC Status Variable for: igrp1	%M10	
I_Byte1	BYTE	VAR_GLOBAL		%IB4	
I_Byte2	BYTE	VAR_GLOBAL		%IB5	
I_Byte3	BYTE	VAR_GLOBAL		%IB6	
I_Byte4	BYTE	VAR_GLOBAL		%IB7	
[< SMC> 'ogrp1' Address Range: %QB2 - %QB5 (* Do Not Modify Group Name or Status Variable!! *)					
O_Byte1	BYTE	VAR_GLOBAL		%QB2	
O_Byte2	BYTE	VAR_GLOBAL		%QB3	

Figure 6: IO variables in Global Variables worksheet

7. If communication is healthy, the status word will show 4096 (decimal) or 1000 (hex).