

CONTROLLER INFORMATION SHEET

Maple Model(s)

Graphic HMCs

PLC or Controller

Modbus /TCP Master (Client)



P/N: 1038-0081

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Summary

Maple Systems **HMC7000 Series** Human/Machine Controllers (Maple HMCs) communicate with any device that uses the Modbus TCP/IP protocol. The HMC uses the Modbus/TCP Master (Client) protocol driver to allow the Maple HMC to act as the master in a single master, single slave format.

Communications Cable

The Maple HMC Ethernet port connects directly to the Modbus TCP/IP Ethernet port on the Modbus slave. A list of communications cables offered by Maple Systems as well as cable assembly instructions to assist you in assembling your own communications cable are available on our website at www.maplesystems.com.

WARNING *If your communications cable is not wired exactly as shown in our cable assembly instructions, damage to the HMI or loss of communications can result.*

PLC Settings

The Modbus port on the controller must be set to TCP slave mode in order to properly communicate with the HMC Master.

The Modbus slave device must be configured with an IP address that is addressable by the HMC.

Accessible PLC Memory

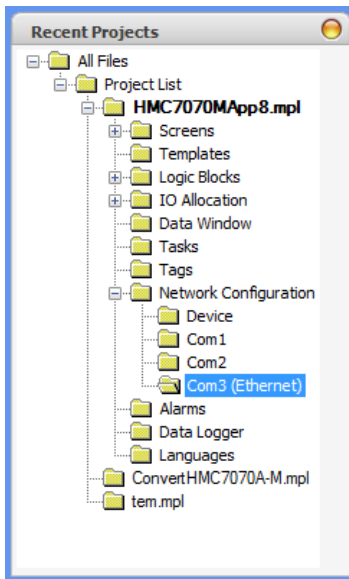
PLC Addressing

The following table lists the PLC memory ranges that are accessible on the Maple HMC7000 Series. Please note your PLC memory range may be *smaller* or *larger* than that supported by the PLC. The following addresses can be displayed in 8, 16 or 32 bit formatting and/or single bit format as designated.

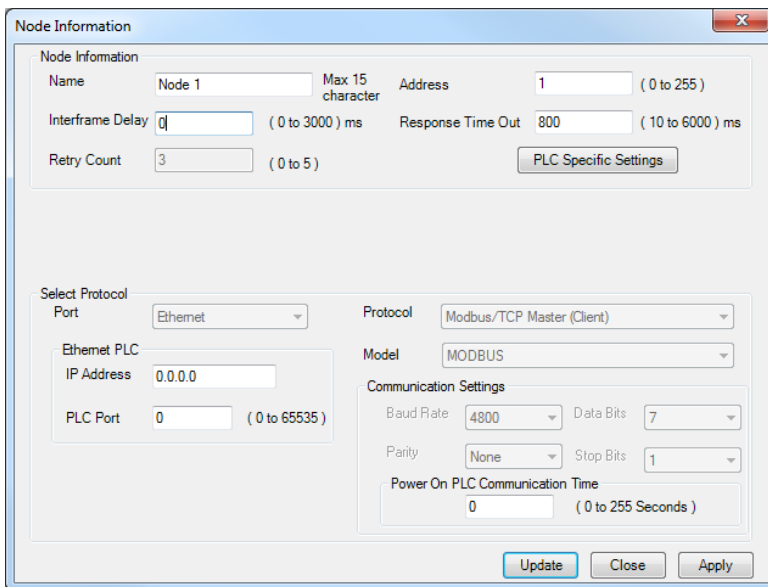
PLC Address Types	Address Range	Modbus Address	Write access
Coils	0-65536	000001-165536	Read/write
Input Coils	0-65536	100001-165536	Read
Input Registers	0-65536	300001-365536	Read
Holding Registers	0-65536	400001-465536	Read/write

MAPware-7000 Settings

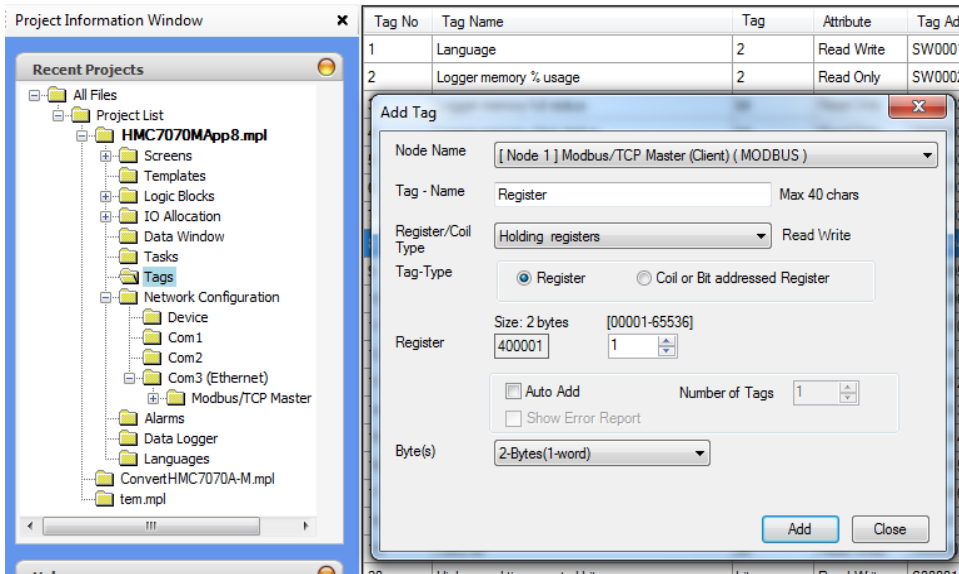
The table at the end of this document lists the communications settings that must be configured in MAPware-7000. These settings can be found in the Network Configuration folder for the selected project in the *Project Information* window:



Right-click on the Com3 (Ethernet) port and click *Add...* to display the Node Information dialog box:



PLC tags are added to the project in the tag folder after configuring the device. Select the Tag folder from the Project Information Window. Right click in the tag list and select *Add...* from the popup menu. Select the Node Name at the top of the Add Tag dialog to specify the target device, enter a name for the tag and select the register/coil type to match what is in your controller and an address for the register. Click the *Add* button to save the tag to the tag list.



Important Memory Considerations

If your PLC memory range is smaller than the range supported by the Maple HMC, it is possible to configure the unit to monitor PLC memory addresses that are not available. Because this can cause unpredictable results, when you configure the HMC ensure that all selected PLC memory addresses are valid for your PLC model.

Do not configure the HMC7000 to write to any PLC memory address which should only be written to by the PLC.

Please note:

- The **Options** column lists MAPware-7000 options; your PLC may not support every option.
- The PLC Specific Settings button that appears when configuring the protocol allows the programmer access to settings used when retrieving two consecutive Modbus addresses as a 32-bit register.

Name	Recommended Settings	Options	Important Notes
Port	Ethernet	---	
Protocol	Modbus/TCP Master (Client)	---	Select the appropriate protocol for your PLC
Model	Modbus	---	
Ethernet PLC: IP Address	xxx.xxx.xxx.xxx	---	IP address assigned to the Modbus Slave device
Ethernet PLC: PLC Port	502	---	Port number used for Modbus connections (502 is the standard Modbus port)
Node Information: Name	---	Maximum of 15 characters	Provide a meaningful description to the port
Node Information: Address	1	0 to 255	
Node Information: Interframe Delay	---	0 to 3000 msec	Minimum time delay between commands sent to the PLC
Node Information: Retry Count	---	0 to 5	The maximum attempts by the HMC to resend an unanswered command
Node Information: Response Time Out	---	10 to 6000 msec	The time that must pass before the HMC reattempts to send an unanswered command to the PLC
PLC Specific Settings	---	NA	Not Available for this protocol communications driver

---indicates no recommended option.

N/A indicates not available for this driver.