

CONTROLLER INFORMATION SHEET

Maple Model(s)

Graphic HMCs

PLC or Controller

Allen-Bradley Ethernet/IP
MicroLogix
SLC5/0X (X is up to 05)



P/N: 1038-0214

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Summary

Maple Systems **HMC7000 Series** Human/Machine Interface Controllers (Maple HMCs) communicate with Allen-Bradley MicroLogix and SLC500 Series PLCs using the Allen-Bradley Ethernet/IP protocol. The Allen-Bradley PLC communication protocol must be set for Ethernet/IP. When configured with MAPware-7000, the Maple HMC will communicate with a MicroLogix or SLC500 series PLC.

Communications Cable

The Maple HMCs connect directly to the Ethernet Port on the PLC. 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 HMC or loss of communications can result.*

PLC Settings

| |
|---|
| Data tables must be configured with 16 words of data to be read by the HMC* |
| The IP address must be set |
| Auto Negotiate must be set |

*A register must be part of a block of 16 registers. If you are using N7:2, for example, N7:0 through N7:15 must exist. If you are using N7:18, N7:16 through N7:31 must exist. This requirement exists for all data types in the PLC.

If a block of 16 registers does not exist, “???” will be displayed by the HMC.

Accessible PLC Memory

PLC Addressing

The following table lists the PLC memory ranges that are accessible by the Maple HMC7000 Series. Please note that your PLC memory range may be *smaller* or *larger* than that supported by the HMC. 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 | Bit Addressing | Format | Write Access |
|-----------------------|---------------------------|----------------|-------------|--------------|
| Output Registers (O) | fff: 0-0, ddd: 0-5 | bb: 0-15 | fff,ddd(bb) | Read/write |
| Input Registers (I) | fff: 0-0, ddd: 0-7 | bb: 0-15 | fff,ddd(bb) | Read only |
| Bit Registers (B) | fff: 3,10-255, ddd: 0-255 | bb: 0-15 | fff,ddd(bb) | Read/write |
| Timer Acc. Reg. (T) | fff: 4,10-255, ddd: 0-255 | bb: 0-15 | fff,ddd(bb) | Read/write |
| Timer Pre. Reg. (T) | fff: 4,10-255, ddd: 0-255 | bb: 0-15 | fff,ddd(bb) | Read/write |
| Counter Acc. Reg. (C) | fff: 5,10-255, ddd: 0-255 | bb: 0-15 | fff,ddd(bb) | Read/write |
| Counter Pre. Reg. (C) | fff: 5,10-255, ddd: 0-255 | bb: 0-15 | fff,ddd(bb) | Read/write |
| Integer Registers (N) | fff: 7,10-255, ddd: 0-255 | bb: 0-15 | fff,ddd(bb) | Read/write |
| Float Registers (F) | fff: 8,10-255, ddd: 0-255 | N/A | fff,ddd | Read/write |

SLC5/0X Only

| PLC Address Types | Address Range | Bit Addressing | Format | Write Access |
|-----------------------|---------------------------|----------------|-------------|--------------|
| Control Registers (R) | fff: 6,10-255, ddd: 0-255 | bb: 0-15 | fff,ddd(bb) | Read/write |

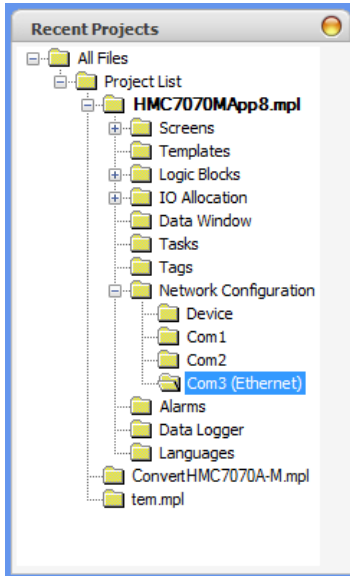
Important Memory Considerations

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.

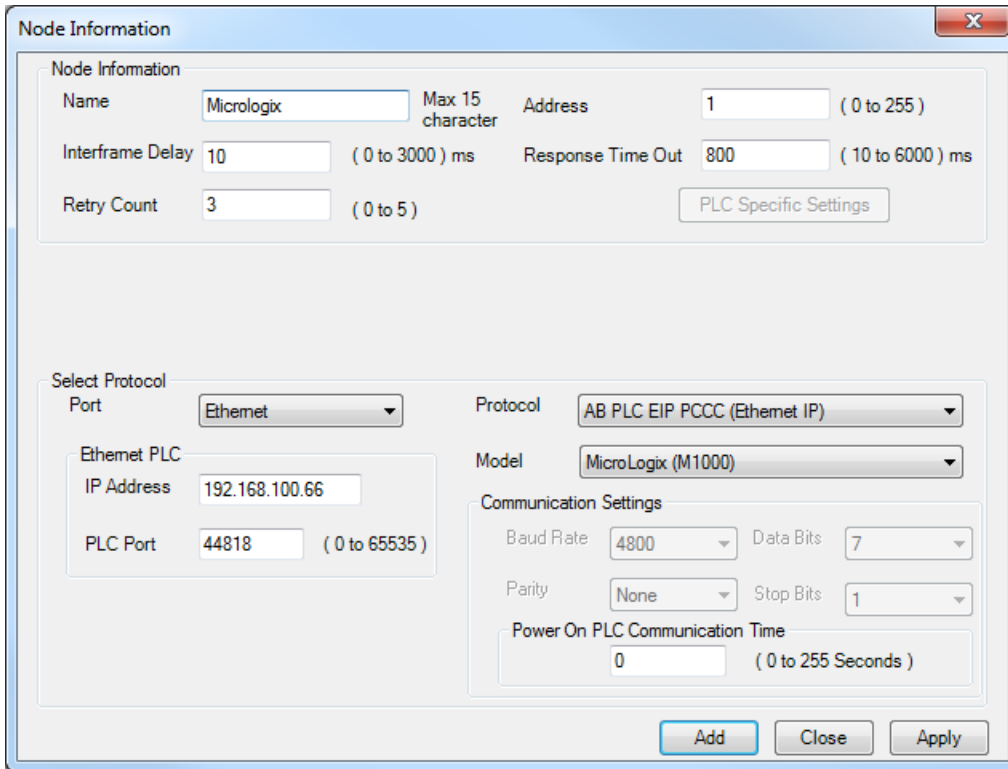
Do not configure the HMC7000 to write to any PLC memory address which should only be written to by the PLC.

MAPware-7000 Settings

The following table 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 Com3 (Ethernet), and then click *Add...* to display the Node Information dialog box:



Note: You can also configure the Com ports in the *Project Configuration* dialog box that is displayed when creating a new project.

Please note:

- The **Recommended Settings** column provides the recommended setting based upon the default settings most commonly used in the MircoLogix and SLC500 controllers.
- The **Options** column lists MAPware-7000 options; your PLC may not support every option.

| Name | Recommended Settings | Options | Important Notes |
|------------------------------------|---|---|--|
| Port | Ethernet | Com1, Com2, Ethernet | This is the HMC port that the PLC is connected to |
| Protocol | AB PLC EIP PCCC (Ethernet IP) | All available protocol drivers, including serial printer and a universal ASCII driver | Select the appropriate protocol for your PLC |
| Model | Micrologix Series PLCs, SLC 5/0x (x is up to 5) | Varies depending upon protocol selected | Select the model that is most closely associated with your PLC |
| Ethernet PLC: IP Address | xxx.xxx.xxx.xxx | --- | Enter the IP Address that is assigned to the PLC Ethernet port |
| Ethernet PLC: PLC Port | 44818 | --- | Network address assigned to the PLC Ethernet port |
| Power On PLC Communication Time | 0 | 0-255 seconds | Delays communications with the PLC after applying power to the HMC |
| Node Information: Name | --- | Maximum of 15 characters | Provide a meaningful description to the port |
| Node Information: Address | 1 | 0 to 255 | Assigns a network address to each PLC. Use when networking several PLCs on one COM port. |
| Node Information: Interframe Delay | 10 | 0 to 3000 msec | Minimum time delay between commands sent to the PLC |

| Name | Recommended Settings | Options | Important Notes |
|--|----------------------|-----------------|--|
| Node Information: Retry Count | 3 | 0 to 5 | The maximum attempts by the HMC to resend an unanswered command |
| Node Information: Response Time Out | 800 | 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.