

C O N T R O L L E R I N F O R M A T I O N S H E E T

Maple Model(s)	PLC or Controller
HMI5000 Series	Cal Controls CALogix



Summary

Maple Systems' **HMI5000 Series** Human/Machine Interface Terminals (Maple HMIs) communicate with the CALogix using the Modbus RTU protocol. The HMI5000 Series uses the **CALogix Controller** protocol driver, to allow the Maple HMI to act as the master in a point-to-point single master, multiple slave format. RS485 networking is supported to connect multiple CALogix controllers to a single Maple HMI.

The CALogix protocol driver in EZware-5000 also has the following features:

- Ability to set a turnaround delay that can be used to slow the rate at which the HMI polls the PLC/controller for data

Communications Cable

The Maple HMI should be connected to the device's RS485 IN port. 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 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.*

Accessible PLC Memory

Register Memory

The following table lists the PLC's register memory ranges that the Maple HMIs are able to access. Please note that your PLC's memory range may be *smaller* or *larger* than that supported by these HMIs. The following register memory can be displayed in 16 or 32-bit format on the Maple HMI.

Register Range	Controller Register Type	Controller Register Description
0-FFFF	Byte	Reads/Writes "Byte" Format addresses
0-FFFF	Word	Reads/Writes "Word" Format addresses
0-FFFF	DWord	Reads/Writes "DWord" Format addresses
0-FFFF	FPoint	Reads/Writes "Float" Format addresses

Discrete Memory

The following table lists the PLC's discrete memory ranges that the Maple HMIs are able to access. Please note that your PLC's memory range may be *smaller* or *larger* than that supported by these HMIs. The following discrete memory is displayable in single-bit format on the Maple HMI.

Register Range	Controller Bit Type	Controller Bit Description
0-FFFF0	Bool ¹	Reads/Writes "Bool" Format addresses
00-FFFFF	Byte Bit	Reads/Writes bits in byte addresses

Note¹: Addresses must be followed by a trailing 0.

Important Memory Considerations

If your PLC's memory range is smaller than the range supported by the Maple HMIs, it is possible to configure the HMI to monitor a PLC memory address which does not exist. Since this can cause unpredictable results, when you configure the HMI please ensure that all selected PLC memory addresses are valid for your PLC model.

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

Address Format when Networking

If you are connecting multiple PLCs/Controllers on a network to an HMI5000, you can specify the network node address for each object placed onto the HMI screen. To target a specific slave address, you must use the following format when entering the address in the *Device Address* box:

aaa#nnnn where aaa=network address (1-255) and nnnn=memory address. The pound sign (#) is used as a delimiter. For example, to configure the Numeric Data object to read a Float value at address 7D0 in a controller that has been assigned a network address of 2:

Device Type=Float, Device Address=2#7D0.

EZware Settings

The following table lists the communications settings that must be configured in EZware-5000. These settings can be found in the Edit-Set System Parameters menu under the PLC tab. Please note:

- The **Recommended Settings** column provides the recommended setting based upon default settings most commonly used in the CAlLogix controllers
- The **Options** column lists EZware-5000's options; your controller may not support every option

Name	Recommended Settings	Options	Important Notes
Name:	CAlLogix Controller		Description label
HMI or PLC:	PLC		
Location:	Local	Local, Remote	Select local if PLC directly connected to HMI, remote if PLC connected through another HMI.
PLC type:	CAlLogix Controller		
PLC I/F:	RS485 4W	RS-232, RS-485 2W, RS-485 4W, Ethernet	Must match the controller's port setting.
PLC default station no.:	1	0-255	Must match the controller's port setting.
Settings: COM.:	COM1	COM1-COM3	Serial port of HMI connected to PLC.
Settings: Baud rate:	19200	9600, 19200, 38400, 57600, 115200	Must match the controller's port setting. Use the fastest baud rate supported by the controller.
Settings: Data bits:	8	7 or 8	Must match the controller's port setting.
Settings: Stop bits:	1	1 or 2	Must match the controller's port setting.
Settings: Parity:	None	Even, Odd, None	Must match the controller's port setting.
Settings: Timeout (sec):	1.0	0.1 to 25.5	Adjust if longer timeout is required.

Name	Recommended Settings	Options	Important Notes
Settings: Turn around delay (ms):	25	0 to 1000	Timeout period between HMI polls.
Settings: Parameter 1:	0		Not applicable
Settings: Parameter 2:	0		Not applicable
Settings: Parameter 3:	0		Not applicable
Interval of block pack (words):	5	0-512	See <i>HMI5000 Series Programming Manual</i> (Maple p/n 1010-1007)
Max. read-command size (words):	32		Not adjustable
Max. write command size (words):	32		Not adjustable