

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	Copley Xenus Controller



Summary

Maple Systems' **HMI5000 Series** Human/Machine Interface Terminals (Maple HMIs) communicate with Copley Xenus controllers using the Copley ASCII Interface protocol. When configured with EZware-5000, the Maple HMI is the master in a single master, single slave format. Please refer to the *HMI5000 Series Programming Manual* (Maple p/n 1010-1007) for information on connecting multiple Maple HMIs to a single PLC port.

Compatible PLCs

Family	Model
Xenus	All
Xenus Micro	All
Accelnet	All
Accelnet Micro	All
Stepnet Series	All

Communications Cable

The Maple HMI should be connected to the serial communications 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 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.*

Controller Settings:

The controller must be set to CAN Address 0.
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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.

(Note: h= hexadecimal d=decimal)

PLC Register Type	Address Range	Format	PLC Register Description
Register	0-31	dd	Read/Write Controller Register
Flash Word	00-FF	hh	Read/Write Flash Memory Address
Ram Word	00-FF	hh	Read/Write Ram Memory Address
Trajectory	N/A	N/A	Read/Write Trajectory Generator

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.

(Note: d=decimal, b=bit, h=hexadecimal)

PLC RegisterType	Address Range	Format	PLC Register Description
RegisterBit	0.00-31.15	dd.bb ¹	Read/Write a specific bit in a Controller Register.
FlashBit	0.00-FF.15	hh.bb ¹	Read/Write a specific bit in a Flash Memory address.
RamBit	0.00-FF.15	hh.bb ¹	Read/Write a specific bit in a Ram Memory address.
CopyFlashToRam	00-FF	hh	Copy a value from the specified Flash memory address to the same address in Ram.
CopyRamToFlash	00-FF	hh	Copy a value from the specified Ram memory address to the same address in Flash.
Reset	0-0	d	Momentarily set on to reset the controller

Note: ¹When specifying a bit, use 2 digits for the bit. Use leading zeroes if necessary.

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.

EZware Settings

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

- The **Recommended Settings** column provides the recommended setting based upon the default settings most commonly used in the Copley Controllers.
- The **Options** column lists EZware's options; your PLC may not support every option.

Name	Recommended Settings	Options	Important Notes
Name:	Copley Xenus		Description label
HMI or PLC	PLC		
Location	Local	Local, Remote	Select <i>Local</i> if PLC directly connected to HMI, <i>Remote</i> if PLC connected thru another HMI
PLC type	Copley Xenus		
PLC I/F:	RS-232	RS-232, RS-485 2W, RS-485 4W, Ethernet	Must match the PLC port setting
PLC default station No.:	1	0-255	Must match the controller's setting
Settings: COM	COM 1	COM1-COM3	Serial port of HMI connected to PLC
Settings: Baud rate:	9600	9600, 19200, 38400, 57600, 115200	Must match the PLC'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 PLC's port setting

Name	Recommended Settings	Options	Important Notes
Settings: Parity:	None	Even, Odd, None	Must match the controller's port setting
Settings: Timeout (sec)	1.5	0.1 to 25.5	Adjust if longer timeout is required
Settings: Turn around delay (ms)	0	0-1000	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	0	0-512	See <i>HMI5000 Series Programming Manual</i> (Maple p/n 1010-1007)
Max. read-command size (words):	2		Not Adjustable
Max. write-command size (words):	2		Not Adjustable

Communication Troubleshooting

Error Message	Possible Causes
PLC No Response	<ol style="list-style-type: none"> 1. Bad cable 2. Check that EasyBuilder's <i>PLC Station Number</i> setting is 0, and that the Xenus' <i>CAN Address</i> is also set to 0. 3. Communications settings mismatch. Make sure the Baud Rate, Data Bits, Parity, and Stop Bits in EasyBuilder match how the PLC is set up. Check the value in HMI Local Word 8999 (LW8999) for the most recent error code from the controller. See the table below.

Xenus Error Codes (as of February 2007)

Code	Meaning
1	Too much data passed with command.
3	Unknown command code.
4	Not enough data was supplied with the command.
5	Too much data was supplied with the command.
9	Unknown variable ID.
10	Data value out of range.
11	Attempt to modify read-only variable.
14	Unknown axis state.
15	Variable doesn't exist on requested page.
18	Illegal attempt to state a move while currently moving.
19	Illegal velocity limits for move.
20	Illegal acceleration limit for move.
21	Illegal deceleration limit for move.
22	Illegal jerk limit for move.
25	Invalid trajectory mode.
27	Command is not allowed while CVM is running.
31	Invalid node ID for serial port forwarding.
32	CAN Network communications failure.
33	ASCII command parsing error.
100	Unknown error.
101	No carriage return was detected.
102	Unexpected data received.