



Cal Controls CALogix

Overview

Maple Systems' **Silver Series/HMI500 Series** Operator Interface Terminals (Maple OITs) communicate with the CALogix using the Modbus RTU protocol. The Silver Series uses the **Cal Controls CALogix** protocol driver, to allow the Maple OIT 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 OIT.

The CALogix protocol driver in EZware-500 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 OIT 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 at www.maple-systems.com/cables.htm.

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

Accessible Memory

Register Memory

The following table lists the controller's register memory ranges that the Maple OITs are able to access. Please note that your controller's memory range may be *smaller* or *larger* than that supported by these OITs. The following register memory can be displayed in 16, 32, or 64 bit format on the Maple OIT.

Register Range	Controller Register Type	Controller Register Description
0-7FFF	Byte	Reads/Writes "Byte" Format addresses
0-7FFF	Word	Reads/Writes "Word" Format addresses
0-7FFF	DWord	Reads/Writes "DWord" Format addresses
0-7FFF	Float	Reads/Writes "Float" Format addresses
0-7FFF	FloatToInt ¹	Reads "Float" Format addresses, but returns a rounded Integer value

Discrete Memory

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

Register Range	Controller Bit Type	Controller Bit Description
0-7FFF0	Bool ²	Reads/Writes "Bool" Format addresses

Notes:

1. Use with the Meter Display, Trend, and Bar Graph objects for Float data.
2. Addresses must be followed by a trailing 0.

Address Format when Networking

If you are connecting multiple PLCs/Controllers on a network to an Silver Series OIT, 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-500 Settings

The following table lists the communications settings that must be configured in EZware-500. 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
- the **Options** column lists EZware-500's options; your controller may not support every option

Name	Recommended Settings	Options	Important Notes
PLC type:	Cal Controls CAlLogix va.bc		
Serial port I/F:	RS485 Default	RS232, RS485	
Data Bits:	8	7 or 8	Must match the Controller's port setting.
Stop Bits:	1	1 or 2	Must match the Controller's port setting.
Baud Rate:	19200	9600,19200, 38400,57600, 115200	Must match the Controller's port setting. Use the fastest baud rate supported by the Controller.
Parity:	None	Even, Odd, None	Must match the Controller's port setting.
HMI station No.:	0	0-255	Does not apply to this protocol.
PLC station No.:	1	0-255	Must match the CAlLogix's station number.
Multiple HMI:	Disable	Disable, Master, Slave	use for multiple OITs
HMI-HMI link speed:	38400	38400, 115200	use for multiple OITs
PLC time out constant (sec)	2.0	1.5 to 5.0	adjust if longer timeout is required
PLC block pack:	0	0-10	see <i>Silver Series Installation and Operation Manual</i>
Parameter 1	15	1-999	Turn around delay in Msec

Network Settings

When connecting multiple PLCs/controllers to a single Maple OIT, you must also set the following in the Edit-Set System Parameters menu:

- On the Editor tab, select Extended for Address Mode.