



# Allen-Bradley

## MicroLogix 1100 via EtherNet/IP

### Overview

Maple Systems' **Silver Series Plus** Operator Interface Terminals (Maple OITs) communicate with Allen-Bradley MicroLogix 1000, 1100, 1200 and 1500 PLCs using the DF1 Full Duplex protocol. When configured with EZware, the Maple OIT is the master in a point-to-point single master, single slave format.

Compatible PLCs	
Family	Model
MicroLogix 1100 Series	All

### Communications Cable

The Maple OIT can be connected directly to the Ethernet port (channel 1) 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.

**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.

### PLC Settings

The IP Address must be set.

Auto Negotiate must be set.

### Accessible PLC Memory

#### Register Memory

The following table lists the PLC's register memory ranges that the Maple OITs are able to access. Please note that your PLC'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.

PLC Register Type	Address Range	Format	PLC Register Description
T4SV	0-254	ddd (d=decimal)	Timer Preset Values
T4PV	0-254	ddd	Timer Accumulated Values
C5SV	0-254	ddd	Counter Preset Values
C5PV	0-254	ddd	Counter Accumulated Values
N7	0-254	ddd	Integer Data
Nfn	0-254254	fffnnn <sup>1</sup>	Integer Data
F8	0-254	ddd	Floating Point Data
Ffn	0-254254	fffnnn <sup>1</sup>	Floating Point Data

**NOTE<sup>1</sup>:** The device type of Ffn allows access to any data file (fff) and address (nnn) in the Floating Point (F) memory area. Likewise, the device type of Nfn allows access to any data file (fff) and address (nnn) in the Integer (N) memory area. fff specifies the data file 000-254, and nnn specifies the data address 000-254. For example, to specify Integer data file 97, address 45 (N97:45), select device type as Nfn and enter 097045 into the device address field. Ensure that the data file and data address are entered using leading zeroes when necessary.

## Discrete Memory

The following table lists the PLC's discrete memory ranges that the Maple OITs are able to access. Please note that your PLC'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.

PLC Bit Type	Address Range	Format	PLC Bit Description
I1	0.0 to 254.15	ddd.bb <sup>2</sup>	Discrete Inputs
O0	0.0 to 254.15	ddd.bb <sup>2</sup> (d=decimal, b=bit)	Discrete Outputs
B3	0.0 to 254.15	ddd.bb <sup>2</sup>	Bit Data
Bfn <sup>3</sup>	00300000-25425415	fffnnnbb <sup>3</sup>	Bit Data
Nfn Bit <sup>3</sup>	00700000-25425415	fffnnnbb <sup>3</sup>	Bit Data

**NOTE<sup>2</sup>:** When accessing bit data, use the following syntax in the Device Address field:

<word>.<bit>

The bit value must contain the leading 0. For example, to address bit 8 in word 5, the Device Address field would contain:

5.08

**NOTE<sup>3</sup>:** The Bfn and Nfn Bit devices allow access to bits in any bit data file and any word data file respectively. In the former, fff refers to the data file (000-254), nnn refers to the data address (000-254), and bb refers to the bit number (00-15). For example, Nfn bit 01110702 refers to N11:107.2. Note that the leading zeroes are required in all three fields.

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## **Memory Not Supported**

The following PLC memory areas are not currently supported by the Maple OITs:

- Status File (S2)
- Data File 9 (of any type)
- Control Files (Type *R*)
- Slot Addressing
- Long Word Files (Type *L*)
- Message Control (Type *MG*)
- PID Control (Type *PD*)

## **Important Memory Considerations**

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

Do not configure the OIT 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-Set 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 Allen-Bradley MicroLogix PLCs
- the **Options** column lists EZware's options; your PLC may not support every option

Name	Recommended Settings	Options	Important Notes
Name:	Allen-Bradley EtherNet/IP (DF1)		
HMI or PLC:	PLC		
Location:	Local	Local, Remote	Select local if PLC directly connected to OIT, remote if PLC connected thru another OIT
PLC type:	Allen-Bradley EtherNet/IP (DF1)		
PLC I/F:	Ethernet	RS-232, RS-485 2W, RS-485 4W, Ethernet	
PLC default station no.:	1	0-255	
Settings: IP Address:	XXX.XXX.XXX.XXX	XXX.XXX.XXX.XXX	Enter the IP Address of the PLC
Settings: Port No:	44818	None	This is the TCP/IP port used by the EtherNet IP protocol.
Settings: Timeout (sec)	1.0	0.1 to 25.5	Adjust if longer timeout is required
Settings: Turn around delay (ms)	0	0-1000	Timeout period between OIT polls
Settings: Reserved 1:	0		Not Applicable
Settings: Reserved 2:	0		Not Applicable
Settings: Reserved 3:	0		Not Applicable
Settings: Reserved 4:	0		Not Applicable
Interval of block pack (words):	5	0-512	See <i>Silver Series Plus Installation and Operations Manual</i>
Max. read-command size (words):	120		Not Adjustable

<b>Name</b>	<b>Recommended Settings</b>	<b>Options</b>	<b>Important Notes</b>
Max. write command size (words):	120		Not Adjustable