



# Allen-Bradley

## SLC500 Series (DF1 Extended)

### Overview

Maple Systems' **BLU300 Series** Operator Interface Terminals (Maple OITs) communicate with Allen-Bradley SLC500 Series PLCs using the DF1 Full Duplex protocol. When configured with BlueLeaf configuration software, the Maple OIT is the master in a point-to-point single master, single slave format.

Compatible PLCs	
Family	Model
SLC500 Series	SLC5/01, SLC5/02, SLC5/03, SLC5/04, SLC5/05

### Communications Cable

For the SLC5/01 and SLC5/02 the Maple OIT should be connected to:

- the DF1 port on the 1747-KE or 1770-KF3 module;

for the SLC5/03, SLC5/04 and SLC5/05 the Maple OIT should be connected to:

- the Channel 0 (RS232) 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.maple-systems.com/cables.htm](http://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.

# PLC Settings

Full Duplex Operation must be set.
No Hardware Handshaking must be set.
The Checksum must be set to CRC (this is the Default).

## 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 or 32 bit format on the Maple OIT.

Memory Area	Register/Coil		
	File #	Register #	Exension
B	3, 10-254	0-254	NA
C	5, 10-254	0-254	0, PRE, ACC
I	1	0-30	NA
N	7, 10-254	0-254	NA
O	0	0-30	NA
R	6, 10-254	0-254	0, LEN, POS
S	2	0-96	NA
T	04, 10-254	0-254	0, PRE, ACC

**Note:** When using File #s 10-254, you must first create the file in PLC memory before the file can be accessed by the HMI. When entering the address into the Register/Coil entry area of BlueLeaf configuration software, you must use the colon (:). For example, to access N7:50, you must select Memory Area N and type '7:50' into the Register/Coil address. Use the Extension to access other data in the C, R and T memory areas. For example, to access the Preset value of C5:50.PRE memory, enter '5:50.PRE' into the Register/Coil address of the BlueLeaf software.

## 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.

Memory Area	Register/Coil		
	File #	Register #	Coil #
B	3, 10-254	0-254	0-15
C	5, 10-254	0-254	09 or UA, UN, OV, DN, CD, CU
I	1	0-30	0-15
N	7, 10-254	0-254	0-15
O	0	0-30	0-15
R	6, 10-254	0-254	0-7 or FD, IN, UL, ER, DN, EN
S	2	0-96	0-15
T	4, 10-254	0-254	0-12 or DN, TT, EN

**Note:** When using the File #s 10-254, you must first create the file in PLC memory before the file can be accessed by the HMI. When entering the address into the Register/Coil entry area of BlueLeaf configuration software, you must use the colon (:) and slash mark (/) delimiters. For example, to access B3:50/10, you must select Memory Area B and type '3:50/10' into the Register/Coil address. To access T4:25/DN, you must select Memory Area T and type '4:25/DN' into the Register/Coil address.

## Memory Not Supported

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

- Data File 8 or 9 (of any type)

**NOTE:** Although input files (I1) and output files (O0) are listed in BlueLeaf, these are only supported for Allen-Bradley MicroLogix PLCs.

## 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.

# BlueLeaf Communication Settings

The following table lists the communications settings that must be configured in BlueLeaf configuration software. These settings can be found in the Tools...HMI-PLC Communications Settings menu. Please note:

- the **Recommended Settings** column provides the recommended setting based upon the default settings most commonly used in the Allen-Bradley SLC500 PLC
- the **Options** column lists BlueLeaf's options; your PLC may not support every option

Name	Recommended Settings	Options	Important Notes
PLC type:	AB Micrologix, SLC500(DF1, Extended)		
Com Port:	RS232	RS232, RS-422 (4-wire), RS485 (2-wire)	Tools...HMI Default Settings
Baud Rate:	9600	4800, 9600,19200, 38400,57600, 115200	Must match the DF1 port setting. Use the fastest baud rate supported by the PLC.
Data Bits:	8	7 or 8	Must match the DF1 port setting.
Stop Bits:	1	1 or 2	Must match the DF1 port setting.
Parity:	None	Even, Odd, None	Must match the DF1 port setting.
Net Addr:	1	0-31	Must match the node address assigned on the Data Highway network (configure in each object attribute or set in HMI Default Settings)