



Allen-Bradley

MicroLogix Series (DF1)

Overview

Maple Systems' **Silver Plus Series** Operator Interface Terminals (Maple OITs) communicate with Allen-Bradley MicroLogix Series PLCs using the DF1 Full Duplex protocol. When configured with EZware, the Maple OIT is the master.

Compatible PLCs	
Family	Model
MicroLogix 1000 Series	All
MicroLogix 1100 Series	All
MicroLogix 1200 Series	All
MicroLogix 1500 Series	All

Communications Cable

The Maple OIT can be connected directly to the Programming 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.

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
Error Checking is CRC.

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.

PLC Register Type	Address Range	Format	PLC Register Description
T4SV	0 to 255	ddd (d=decimal)	Timer Preset Values
T4PV	0 to 255	ddd	Timer Accumulated Values
C5SV	0 to 255	ddd	Counter Preset Values
C5PV	0 to 255	ddd	Counter Accumulated Values
TfnSV	0 to 255255	fffnnn File No. fff: 4, 10-255 Element No. nnn: 0-255	Timer Preset Values
TfnPV	0 to 255255	fffnnn (see above)	Timer Accumulated Values
CfnSV	0 to 255255	fffnnn File No. fff: 5, 10-255 Element No. nnn: 0-255	Counter Preset Values
CfnPV	0 to 255255	fffnnn (see above)	Counter Accumulated Values
N7	0 to 255	ddd	Integer Data
N10-N15	0 to 255	ddd	Integer Data
Nfn	0 to 255255	fffnnn File No. fff: 7, 10-255 Element No. nnn: 0-255	Integer Data
F8	0 to 255	ddd	Floating Point Data
Ffn	0 to 255255	fffnnn File No. fff: 8, 10-255 Element No. nnn: 0-255	Floating Point Data
S	0 to 255	ddd	Status Data

NOTE: The device type of Ffn allows access to any data file (fff) and element address (nnn) in Floating Point (F) memory. Nfn allows access to any data file and element address in Integer (N) memory. For example to specify Integer data file 97, address 45 (N97:45), select device type a Nfn. Then enter 097045 into the device address field. Ensure that data is entered using leading zeroes when necessary.

Discrete Memory

Please note that your PLC's memory range may be **smaller or larger** than that supported by these OITs. The following discrete memory can be displayed in single bit format on the Maple OIT.

PLC Bit Type	Address Range	Format	PLC Bit Description
O0	00 to 25515	ddd bb (d=decimal,b=bit)	Discrete Outputs
I1	00 to 25515	ddd bb	Discrete Inputs
B3	00 to 25515	ddd bb	Discrete Inputs
B10-B13	00 to 25515	ddd bb	Discrete Inputs
Bfn	00300000 to 25525515	fffnn bb File No. fff: 3, 10-255 Element No. nnn: 0-255 Bit Address bb: 0-15	Bit Data
NfnBit	00700000 to 25525515	fffnn bb File No. fff: 7, 10-255 Element No. nnn: 0-255 Bit Address bb: 0-15	Integer Bit Data
S_Bit	00200 to 25515	nn bb Element No. nnn: 0-255 Bit Address bb:	Status Bit Data

NOTE: When accessing bit data, use the syntax described above in the Device Address field.

The element word and bit values must contain a leading 0 when necessary. For example, to address bit 8 in element word 5, the Device Address field would contain '508'. To address file 7, element word 3 and bit address 2 in NfnBit, the Device Address field would contain '700302'.

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 if that particular address should only be written to by the PLC (not the OIT).

EZware Settings

The following table list the communications setting that must be configured in EZware. These settings can be found in the Edit Systems 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 MicroLogix Controllers.

The **Options** column lists EZware's options – your PLC may not support every option.

Name	Recommended Settings	Options	Important Notes
Name:	Allen-Bradley SLC500 & MicroLogix (DF1)		Description of Comm Port
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 SLC500 & MicroLogix (DF1)		
PLC I/F:	RS232	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 default station no. assigned to the PLC
Settings:	COM 1	COM1-COM3	Serial port of OIT 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 PLC
Settings: Data bits:	8	7 or 8	Must match the PLC's port setting
Settings: Stop bits:	1	1 or 2	Must match the PLC's port setting
Settings: Parity:	None	Even, Odd, None	Must match the PLC's port setting
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

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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 Silver Series Plus Installation Operation Manual
Max. read-command size (words):	32		Not Adjustable
Max. write-command size (words):	32		Not Adjustable

Online Simulator	Yes
Broadcast Command	Not Supported