



Emerson Network Power

EC20 Controllers

Overview

Maple Systems’ **Silver Series Plus** Operator Interface Terminals (Maple OITs) communicate with Emerson EC20 Series PLCs using the Modbus protocol. When configured with EZware, the Maple OIT is the master in a point-to-point single master, single or multiple slave format.

Compatible PLCs	
Family	CPU Model(s)
EC20	All

Communications Cable

The Maple OIT should be connected to the PLC’s COM1 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.

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 Port on the EC20 must be set to Modbus Protocol Slave Station RTU Mode.

The PLC station # in EasyBuilder must match the Station Number set in the PLC .

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
D	0-7999	dddd (d=decimal)	Data Registers
SD	0-255	ddd	Serial Data Registers
Z	0-15	dd	Offset Addressing Register
T	0-255	ddd	Timer Registers
C	0-255	ddd	Counter Registers
C_Double	200-255	ddd	32-bit Counter Registers
D_Double	0-7998	dddd	32-bit Data Registers

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
X	0-377	ooo (o=octal)	Input Relays
Y	0-377	ooo	Output Relays
M	0-2047	dddd (d=decimal)	Auxiliary Relays
SM	0-255	ddd	Special Aux Relays
S	0-1023	dddd	State Relays
T	0-255	ddd	Timer Relays
C	0-255	ddd	Counter Relays

Important 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.

The "set bit" object functions as a "momentary" button, independent of the attribute selected. This is overcome by latching the bit in the PLC logic.

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 Emerson EC20-series PLCs
- the **Options** column lists EZware’s options; your PLC may not support every option

Name	Recommended Settings	Options	Important Notes
Name:	Emerson EC20		Description label
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:	Emerson EC20		
PLC I/F:	RS232	RS-232, RS-485 2W, RS-485 4W, Ethernet	Must match the PLC port setting
PLC default station no.:	0	0-255	Must match the default station no. assigned to the PLC.
Settings: COM:	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:	Even	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
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 Operation Manual</i>

Max. read-command size (words):	32		Not Adjustable
Max. write command size (words):	32		Not Adjustable