



Modbus Network (RS485 2W) Series

Overview

Maple Systems' **Silver Series** Operator Interface Terminals (Maple OITs) communicate to multiple slave devices on an RS485 network using the Modbus RTU (RS485 2W) protocol. When configured with EZware, the Maple OIT is the master in a point-to-point single master, multiple slave format. Please refer to the *Silver Series Installation and Operation Manual* for information on connecting multiple Maple OITs to a single Modbus RTU port.

Using the Modbus RTU (RS485 2W) protocol, the OIT is capable of addressing data from multiple PLCs. All PLCs must be connected to the OIT as Modbus slaves in multi-drop configuration.

Communications Cable

The Maple OIT should be connected to the device's Modbus 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.

Controller Settings

The Modbus port on each Controller must be set to RTU slave mode in order to properly communicate with the OIT.

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.

Controller Register Type	Controller Register Description
30001 - 34096	Input Registers, Read Only
40001 - 44096	Holding / Output Registers

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.

Controller Bit Type	Controller Bit Description
00001 - 09999	Discrete Coils / Outputs
10001 - 19999	Discrete Inputs, Read Only

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 PLC tab. Please note:

- the **Recommended Settings** column provides the recommended setting based upon default settings most commonly used in Modbus Devices
- the **Options** column lists EZware's options; your controller may not support every option

Name	Recommended Settings	Options	Important Notes
PLC type:	Modbus RTU (RS485 2W)		
Serial port I/F:	RS485	RS232, RS485	
Data Bits:	8	7 or 8	Must match the Controller's port setting.
Stop Bits:	2	1 or 2	Must match the Controller's port setting.

Name	Recommended Settings	Options	Important Notes
Baud Rate:	19200	9600,19200, 38400,57600, 115200	Must match the Controller's port setting. Use the fastest baud rate supported by the Controllers.
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.:	0	0-31	Does not apply to this protocol.
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)	3.0	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>

Note: To address multiple PLCs/Controllers, you must go to the Edit-Set System Parameters menu under the Editor tab. Then change Address Mode: to Extended. This allows access to multiple stations (1-16).

Specifying the station number

When the Extended Address Mode is selected, use the following syntax for entering addresses into the Address field of the Attributes dialog box:

Device Station Number#Register Address

Note that the Station Number and PLC Register Address are separated by a pound sign (#). For example, address 40100 in the PLC whose station number is 5 would be entered as:

Device Type: 4x

Device Address: 5#100