



MODBUS Network-Generic Series

Overview

Maple Systems' OIT Family Operator Interface Terminals (Maple OITs) communicate with any device that uses the MODBUS RTU protocol. The Maple OIT is the master in a point-to-point single master, single slave or single master, multiple slave format.

The following are just a few of the programmable controllers and motion control devices which can be connected to a Maple Systems' OIT using the MODBUS port:

- Emerson Motion Control Axima Series or E-Series Drives
- Entertron Industries programmable controllers
- Industrial Control Links ICL-4100, ICL-4200 or ICL-4300 Series
- SAF Drives OEM SAFphire
- SIXNET SIXTRAK Gateways or VersaTRAK RTU
- WHEDCO Motion Controllers

Communications Cable

The Maple OIT should be connected to the MODBUS port located on the programmable controller. In applications requiring multiple OITs, the MODBUS Plus BM85 Bridge Multiplexer provides four additional MODBUS ports for connecting OITs. 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.

WARNING: If your communications cable is not wired exactly as shown in our cable assembly instructions, damage to the Maple OIT or loss of communications can result.

PLC Settings

The MODBUS port on the programmable controller must be set to RTU mode in order to communicate properly with the OIT.

Accessible Controller Memory

Register Memory

The following table lists the Controller's register memory ranges that Maple's OITs are able to access. Please note that your Controller's memory range may be *smaller* or *larger* than that supported by Maple's OITs. The following register memory is displayable in 16-bit or 32-bit formats on the Maple OIT.

PLC Register Address	PLC Register Description	Access
300001 to 365536	Input Registers	Read Only
400001 to 465536	Holding/Output Registers	Read/Write

Discrete Memory

The following table lists the Controller's discrete memory ranges that Maple's OITs are able to access. Please note that your Controller's memory range may be *smaller* or *larger* than that supported by Maple's OITs. The following discrete memory is displayable in single-bit or bank formats on the Maple OIT.

PLC Bit Address	PLC Bit Description	Access
000001 to 065536	Discrete Coils/Output	Read/Write
100001 to 165536	Discrete Inputs	Read Only

Important Memory Considerations

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

Do not configure the Maple OIT to write to any controller memory address which should only be written to by the controller.

Accessing the 1XXXX Coils or 3XXXX Registers

Although the OITware-200 configuration software allows the programmer to select read/write access for 1XXXX and 3XXXX memory, these controller memory areas are designed to be read only.

On using Bank 8 or Bank 16 formats

When using these formats, each controller coil (bit) is individually displayed in terms of 1 and 0, with the lowest addressed coil displayed in the left-most position in the field. Therefore, if using coils 00001-00016, then 00016 is the least significant bit displayed in the right-most position and the 00001 is the most significant bit displayed in the left-most position. The address used must start on a word boundary, which can be determined if the first coil's address, minus 1 and then divided by 16, leaves no remainder.

OITware-200 Settings

The following table lists the communications settings that must be configured in OITware-200.

Please note:

- the Default column lists OITware-200's default setting; your controller's default may be different
- the Options column lists OITware-200's options; your controller may not support every option

Name	Default	Options	Important Notes
Baud Rate	19200	19200, 9600, 4800, 2400, 1200, 600, 300	Must match the MODBUS port settings. Use the fastest baud rate supported by both.
Parity	None	Even, Odd, None, Mark, Space	Must match the MODBUS port settings.
Data Bits	8	7, 8	Must match the MODBUS port settings.
Stop Bits	2	1, 2	Must match the MODBUS port settings.
Status Coils (optional)	385	000001 to 065536 400001 to 465536	Must be within the controller's supported memory range.
Address, Source Address	N/A		
Destination Address	1	0 to 247	Must match the MODBUS port settings.
Password	N/A		
Message Request Register (optional)	400001	000001 to 065536 400001 to 465536	Must be within the controller's supported memory range.
Current Message Register (optional)	400003	000001 to 065536 400001 to 465536	Must be within the controller's supported memory range.
Function Key Coils (optional)	401	000001 to 065536 400001 to 465536	Must be within the controller's supported memory range.
Screen Dependent Function Key Coils (optional)	369	000001 to 065536 400001 to 465536	Must be within the controller's supported memory range. Applies to OITs with Screen Dependent Function Keys.
Control Key Coils (optional)	433	000001 to 065536 400001 to 465536	Must be within the controller's supported memory range.

Name	Default	Options	Important Notes
Status LED Coils (optional)	1	000001 to 065536 400001 to 465536	Must be within the controller's supported memory range. Applies to OITs with Status LEDs.
Function Key LED Coils (optional)	417	000001 to 065536 400001 to 465536	Must be within the PLC's supported memory range. Applies to OITs with Function Key LEDs.