CONTROLLER INFORMATION SHEET

Modicon (Telemecanique)

TSX Nano Series

Overview

Maple Systems' MAP Family & OIT Family Operator Interface Terminals (Maple OITs) communicate with Modicon (Telemecanique) TSX Nano Programmable Logic Controllers (PLCs) using the Modbus communications protocol. The Maple OIT is the master in a point-to-point single master, single slave format.

NOTE: You must select the Telemecanique TSX Series for PLC type in OITware-200.

Compatible PLCs	
Family	**Model**
TSX Nano	TSX 07, 10, 16 and 24 I/O

Communications Cable

The Maple OIT should be connected to the extension port located on the right-hand edge of the PLC's front. 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.

Accessible PLC Memory

Register Memory

The following table lists the PLC's register memory ranges that Maple's OITs are able to access. Please note that your PLC'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	Format	PLC Register Description
%M 0 to 127	1, 8, 16, 32	Internal Memory Relays
%MW 0 to 255	16, 32	Internal Memory Words

Important Memory Considerations

If your PLC's memory range is smaller than the range supported by Maple's OITs, it is possible to configure the Maple OIT to monitor a PLC memory address which does not exist. Since this can cause unpredictable results, when you configure the Maple OIT please ensure that all selected PLC memory addresses are valid for your PLC model.
Do not configure the Maple OIT to write to any PLC memory address which should only be written to by the PLC.
On using Bank 8 or Bank 16 formats When using these formats, each PLC coil (bit) is individually displayed in terms of 1 and 0, with the lowest addressed coil displayed in the right-most position in the field. Therefore, if using coils 0-15, the 0 is the least significant bit displayed in the right-most position and the 15 is the most significant bit displayed in the left-most position. The address used must start on a byte boundary when using these formats.

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

Name	Default	Options	Important Notes
Baud Rate	9600	19200, 9600, 4800, 2400, 1200, 600, 300	Must match the PLC port settings. Use the fastest baud rate supported by both.
Parity	Even	Even, Odd, None, Mark, Space	Must match the PLC port settings.
Data Bits	8	7, 8	Must match the PLC port settings.
Stop Bits	1	1, 2	Must match the PLC port settings.
Status Coils	%M80	%M0 to %M112	Must be within the PLC's supported memory range.
Address	7	5, 6, 7	PLC device number.
Source Address, Destination Address	N/A		
Password	N/A		
Message Request Register	%MW253	%MW0 to %MW255	Must be within the PLC's supported memory range.
Current Message Register (optional)	%MW255	%MW0 to %MW255	Must be within the PLC's supported memory range.
Function Key Coils (optional)	%M64	%M0 to %M112	Must be within the PLC's supported memory range.

Name	Default	Options	Important Notes
Screen Dependent Function Key Coils (optional)	%M0	%M0 to %M112	Must be within the PLC's supported memory range. Applies to OITs with Screen Dependent Function Keys.
Control Key Coils (optional)	%M16	%M0 to %M112	Must be within the PLC's supported memory range.
Status LED Coils (optional)	%M96	%M0 to %M112	Must be within the PLC's supported memory range. Applies to OITs with Status LEDs.
Function Key LED Coils (optional)	%M112	%M0 to %M112	Must be within the PLC's supported memory range. Applies to OITs with Function Key LEDs.

MAPware-100 Settings

The following table lists the communications settings that must be configured in MAPware-100. Please note:

- the Default column lists MAPware-100's default setting; your PLC's default may be different
- the Options column lists MAPware-100's options; your PLC may not support every option

Name	Default	Options	Important Notes
Baud Rate	9600	19200, 9600, 4800, 2400, 1200, 600, 300	Must match the PLC port settings. Use the fastest baud rate supported by both.
Parity	Even	Even, Odd, None, Mark, Space	Must match the PLC port settings.
Data Bits	8	7, 8	Must match the PLC port settings.
Stop Bits	1	1, 2	Must match the PLC port settings.
Status Coils	%M80	%M0 to %M112	Must be within the PLC's supported memory range.
Address	7	5, 6, 7	PLC device number.
Source Address, Destination Address	N/A		
Password	N/A		
Message Request Register	%MW253	%MW0 to %MW255	Must be within the PLC's supported memory range.
Function Key Coils (optional)	%M64	%M0 to %M112	Must be within the PLC's supported memory range.

PLC Error Messages

The following error messages are related to PLC protocol (indicated by “PLC: xxxx...”):

“PLC: Invalid Access of Word Register...” Attempted to access a Word (16-bit) register in a Bit or Byte wise fashion or to write to a read-only Word register. Using OITware-200, correct the screen register’s format or read/write access.
“PLC: No Connection Error...” The OIT cannot communicate with the PLC during initialization. This is most likely due to a bad connection (cable, connector or attachment faulty) or loss of proper power to the PLC. Remote possibilities include severe noise, a faulty PLC or faulty OIT.
“PLC: No Response Error...”, “PLC: Data Reception Error...”, “PLC: Parity Error...”, “PLC: CRC-16 Checksum Error...”, “PLC: Response Invalid...”, “PLC: PLC’s address didn’t match...”, “PLC: PLC’s function didn’t match....” The OIT cannot communicate properly with the PLC after initialization. This is most likely due to noise, a bad connection (cable, connector or attachment faulty) or loss of proper power to the PLC. Remote possibilities include a faulty PLC or faulty OIT.
“PLC: TSX: Function Unknown....”, “PLC: TSX: Invalid Data...”, “PLC: TSX: Error...” The PLC reported an error. For further information, refer to the Telemecanique documentation or contact Modicon technical support.
“PLC: Invalid Command...”, “PLC: Invalid Register...”, “PLC: Invalid Access of Bit Register...”, “PLC: Invalid Access of Dword Register...”, “PLC: Invalid Address...”, “PLC: Invalid Data Pointer...”, “PLC: Procedure/Data Internal Error...” An internal error occurred in the OIT. Contact Maple Systems technical support.