Yaskawa MP Series Controllers

Overview

Maple Systems' OIT Family Operator Interface Terminals (Maple OITs) communicate with Yaskawa MP series Controllers using the Memobus protocol in a point-to-point single master, single slave format.

Compatible Controllers	
Family	**Model**
MP Series	MP920, MP930, MP940

Communications Cable

The Maple OIT should be connected to the Port2 serial communications port on the Yaskawa Controller. Refer to Technical Note 1061 for information on communication cable part numbers and cable assembly instructions. If you will be assembling your own communications cable, cable assembly instructions are also available on our web site at www.maple-systems.com.

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.

Controller Settings

Name	Setting	Options	Important Notes
Baud Rate:	9600	1200, 2400, 4800, 9600, 19200	Must match the OIT Configuration setting. Use the fastest baud rate supported by both.
Data Bits:	8	No options	Must match the OIT Configuration setting.
Parity:	None	No options	Must match the OIT Configuration setting.
Stop Bits:	1	No options	Must match the OIT Configuration setting.

Accessible Controller Memory

Register Monitors

The following tables list the Controller 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.)

Register	Address	Sub-Element	Preferred Format(s)	Access	Data Range
ML	0-32766	None	Long 8 digit BCD	R/W R/W	2,147,483,648 00000000-99999999
MW	0-32767	None	Signed Bank8 Bank16 4 digit BCD	R/W R R R/W	±32,767 00000000-11111111 (lower 8 bits) 0000000000000000- 1111111111111111 0000-9999
MB	0-4095	0-F	1/0, On/Off or ASCII String	R/W	0 = On 1 = Off
IL	0-FFE	None	Long 8 digit BCD	R R	±2,147,483,648 00000000-99999999
IW	0-FFF	None	Signed Bank8 Bank16 4 digit BCD	R R R R	±32,767 00000000-11111111 (lower 8 bits) 0000000000000000- 1111111111111111 0000-9999
IB	0-FFF	0-F	1/0, On/Off or ASCII String	R	0 = On 1 = Off
MF	These are accessed using ML registers with the "Floating Point" format				

Recipe Presets

Register	Address	Sub-Element	Preferred Format(s)	Access	Data Range
ML	0-32766	None	Long 8 digit BCD	R/W R/W	2,147,483,648 00000000-99999999
MW	0-32767	None	Signed Bank8 Bank16 4 digit BCD	R/W R R R/W	±32,767 00000000-11111111 (lower 8 bits) 0000000000000000- 1111111111111111 0000-9999
MB	0-4095	0-F	1/0, On/Off or ASCII String	R/W	0 = On 1 = Off
MF	Not directly supported since "Floating Point" format is not supported in Recipe presets.				

Screen-Definable Function Keys and Function Keys

Register	Address	Sub-Element	Action	Data Range
MB	0-4095	0-F	Latched, Push, On/Off, Momentary	0 = On 1 = Off

OITware-200 Settings

The following table lists the communications settings that must be configured in OITware-200.
Please note:
- the Setting column lists OITware-200's recommended setting; your controller's default may be different
- the Options column lists OITware-200's options; your controller may not support every option
- The value(s) in the "["and"]" brackets correspond to the controller address(es)

Name	Setting	Options	Important Notes
Baud Rate	9600	19200, 9600, 4800, 2400, 1200, 600, 300	Must match the controller's configuration settings. Use the fastest baud rate supported by both.
Parity	Even	Even, Odd, None, Mark, Space	Must match the controller's configuration settings.
Data Bits	8	7, 8	Must match the controller's configuration settings.
Stop Bits	1	1, 2	Must match the controller's configuration settings.
Controller Address	1	1 to 31	Must match the controller's configuration settings.
Status Coils	MB6140	MB00 - 40950	Must be within the controller's supported memory range.
Message Request Register (optional)	MW32767	MW0 - 32767	Must be within the controller's supported memory range.
Current Message Register (optional)	MW32766	MW0 - 32767	Must be within the controller's supported memory range.
Function Key Coils (optional)	MB6180	MB00 - 40950	Must be within the controller's supported memory range.
Screen Dependent Function Key Coils (optional)	MB6200	MB00 - 40950	Must be within the controller's supported memory range. Applies to OITs with Screen Dependent Function Keys.
Control Key Coils (optional)	MB6220	MB00 - 40950	Must be within the controller's supported memory range.
Status LED Coils (optional)	MB6120	MB00 - 40950	Must be within the controller's supported memory range. Applies to OITs with Status LEDs.
Function Key LED Coils (optional)	MB6160	MB00 - 40950	Must be within the controller's supported memory range. Applies to OITs with Function Key LEDs.

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 memory address which should only be written to by the controller.
When using the Bank 8 or Bank 16 register monitor formats to display information from discrete memory, the bits displayed must start on a byte boundary. The byte boundaries leave no remainder when the following formula is used: (discrete memory address -1)/8.

Error Messages

"Can not connect ...."
The OIT could not communicate with the controller during initial communications. Check for consistent communication parameters between the controller and the OIT. Check the cable and connectors for integrity and correctness. Move cables away from noise sources. Check for proper grounding and power supply.

"OIT Address Table Fault"
A write command was sent to the controller to write data to a register that is read only. Using OITware, make the register read-only access. If problem persists, contact Maple Systems technical support.

"Buffer Pointer Null"   or
"OIT Issued INVALID COMM command"
The protocol driver was requested to perform an invalid command. Contact Maple Systems technical support