



QuickSilver

SilverMax “S” Series

Overview

Maple Systems’ 3100/4100 Series Operator Interface Terminals (Maple OITs) communicate with QuickSilver servo controllers using the SilverMax 8-bit ASCII protocol. When configured with OITware-200, the Maple OIT is the master in a point-to-point single master, single slave format.

Compatible Controllers	
Family	Model
SilverMax “S” Series	All

Communications Cable

The Maple OIT should be connected via 3-wire RS-232 to the “Comm” connector on QuickSilver’s Y-cable. 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 you 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:	19200	19200 9600 4800 2400	Must match the OIT Configuration setting. Use the fastest baud rate supported by both. To change the SilverMax use QuickControl software’s Tools/Initialize/Baud.
Data Bits:	8	No options	Must match the OIT Configuration setting.
Parity:	None	No options	Must match the OIT Configuration setting.
Stop Bits:	2	No options	Must match the OIT Configuration setting.
Node Addr:	16	1 to 31	Must match the OIT Configuration setting.

Accessible Controller Commands and Memory

Accessible Controller Commands and Memory

The following tables list the Controller commands and 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.)

For Register Monitors:

Command	Address	Sub-Element	Access	Recommended Format
ARI (Analog Read Input)	10 to 40	1 = Analog#1 2 = Analog#2 3 = Analog#3 4 = Analog#4 5 = Analog#1 & #2 6 = Analog#3 & #4 7 = V+(unCal) 8 = Temp(ADC) 9 = V+ Scale	Read	Signed
POL (Poll)	None	0 to 7	Read	Bit, Decimal, Bank16
RIO (Read I/O States)	None	0 to 15	Read	Bit, Bank16
RIS (Read Internal Status Word)	None	0 to 15	Read	Bit, Bank16
RRG/WRI (Read/Write Register)	0 to 40 200 to 205	None	R/W for addresses 10-40; Read for 0-9 & 200-205	Long

For Recipe Presets:

Command	Address	Sub-Element	Recommended Format
CIO (Configure I/O)	1 = Input 2 = Output	1-7	Bit
CPL (Clear Poll)	0 to 65535	None	Decimal
STP (Stop)	0: Decel=PreviousAccel 1-536870910: Decel 536870911: Immediate	None	Long
WRI (Write Register, Immediate)	10 to 40	None	Long

For Screen-Dependent Function Keys and Function Keys:

Command	Address	Sub-Element	Preferred Action
CIO (Configure I/O)	1 = Input 0 = Output	1 to 7	Input: Latch Output: Any
CIS (Clear Internal Status)	None	None	Latch
CKS (Check Internal Status)	Cond.Enable 0 to 65535	Cond.State 0 to 65535	Latch
DMT (Disable Multi-task)	None	None	Latch
EMT (Enable Multi-task)	None	None	Latch
HLT (Halt)	None	None	Latch
LPR (Load Program)	0 to 3839	0 to 199	Latch
LRP (Load and Run Program)	0 to 3839	None	Latch
PMC (Profile Move Continuous)	Stop Enable 0 to 65535	Stop State 0 to 65535	Latch
PMO (Profile Move Override)	Stop Enable 0 to 65535	Stop State 0 to 65535	Latch
PMV (Profile Move)	Stop Enable 0 to 65535	Stop State 0 to 65535	Latch
PMX (Profile Move Exit)	None	None	Latch
RST (Restart)	None	None	Latch
RUN (Run Program)	None	None	Latch
STP (Stop, Immediate)	0: Decel=PreviousAccel 1-536870910: Decel 536870911: Immediate		Latch
TTP (Set Target To Position)	None	None	Latch
ZTG (Zero Target)	None	None	Latch
ZTP (Zero Target and Position)	None	None	Latch

Important Controller 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: $(\text{discrete memory address} - 1) / 8$.

OITware-200 Settings

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

- the Settings 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

Name	Settings	Options	Important Notes
Baud Rate	19200	19200, 9600, 4800, 2400, 1200, 600, 300	Must match the controller’s configuration settings. Use the fastest baud rate supported by both.
Parity	None	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	2	1, 2	Must match the controller’s configuration settings.
Node Address	16	1 to 31	Must match the controller’s configuration settings.
Message Request Register (optional)	40	10 to 40	Must be within the controller’s supported memory range.
Current Message Register (optional)	39	10 to 40	Must be within the controller’s supported memory range.

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.

“Communication Error”

The OIT did not receive a response or a valid response. Check the cable and connectors for integrity. Move cables away from noise sources. Check for proper grounding and power supply.

“Error: Cannot Write!”

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.

“Error: Cannot Read!”

A read command was sent to the controller to read data from a register that is write only. Using OITware, remove the register from the screen.

“Protocol Error”

The controller responded that the request was invalid. Check that the register is available and the type of access is allowed for the particular controller or for the mode the controller is in.

“Invalid Command”

The protocol driver was requested to perform an invalid command. Contact Maple Systems technical support.