

LabVIEW Control

Associated files:

SilverMax Read Register.vi

SilverMax R-W test.vi

SilverMax Serial Port Init.vi

SilverMax Write Register.vi

SM_Command.vi

Overview

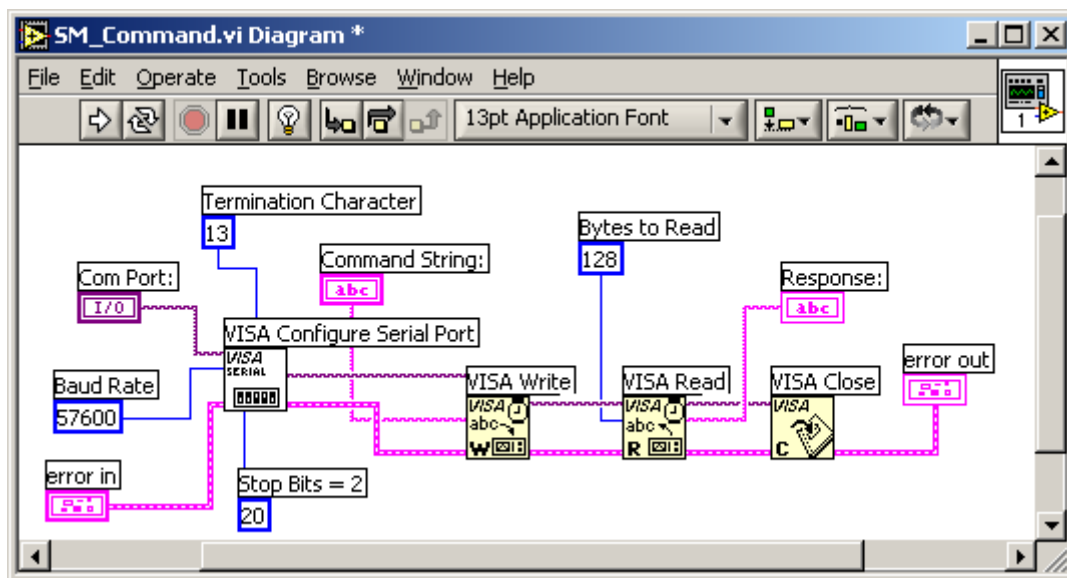
The SilverLode servo can accept commands through RS-232 or RS-485 serial communication interface. This application note discusses how to use LabVIEW VIs to communicate with SilverLode servo.

SM_Command and SilverLode servo operate with the following parameters for this application:

1. Serial Interface – RS-232
2. Communication Protocol – 8-bit ASCII
3. Parity – None
4. Stop bits – 2
5. Baud Rate – 57.6K

Programming in LabView

It is assumed the SilverLode servo is initialized and ready. Refer to the SilverLode User Manual 'Getting Started' for information regarding configuration and initialization. LabView creates programs graphically using two standard windows, panel and diagram.



The screen above is the diagram window (panel not shown). Visa Configure Serial Port is the serial communication device, the backbone of the program. Visa Write, Read and Close are functions that enable writing, reading and closing of the COM port. All other items are inputs, outputs and constants labels.

Items are created from the control and function palettes and edit with the tools palette. Items placed in the diagram window do not appear in the panel window. However, items placed in the panel window appear in the diagram window.

Creating the SM_Command.vi

1. Open LabView and start a new vi program file.
2. Select the diagram window and in the workspace right click the mouse for the function palette.
3. Find and select Instrument I/O – Serial – Visa Serial.
4. Now, select Visa W, R, C and place them in the workspace.
5. To wire the connection, select the tools palette under Window – Show tools palette then choose the wire icon.
6. Turn to the panel window and in the workspace right click for the control palette.
7. Find the labels and constants and place them in the workspace. Notice they automatically appear in the diagram window.

Note: You can search for the items by clicking on the search icon on the control or function palette. To show the search icon, if not already available, click on the pin on the upper left corner of the palette.

Make sure all items are connected or the program will not compile and run. Set the COM port's parameters by clicking the Visa Configure Serial Port icon. The parameters must match the SilverLode servo parameters.

SM_Command.vi

The panel window is the user interface. The program sends a string of characters (data) to the SilverLode servo. Data must be in ASCII and in SilverLode command format.

Example: Sending a stop (STP) command: @16 3 0 (CR)
Consult the SilverLode command reference for more information.

Characters in vi require special attention. A space is designed as '\s' while a carriage return is represented by '\r'. Contact LabView for information regarding formatting strings.

The actual string using this program is as follow: @16\s3\s0\r

For more information concerning LabView, please contact National Instruments at www.ni.com/labView. Questions concerning QuickControl and SilverLode servo can be addressed to Support@QuickSilverControls.com.