SYSTEMS
Engineering Associates, Inc.

SEA Program Download / Restore
Quick Reference
Using SYSView

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This supplemental document is intended to provide a "Quick" instruction reference to downloading and restoring a SYSdev program, user data and timing channel setpoints to an SEA controller using the SYSView online utility software.

Note: Downloading (or restoring) is defined as sending (or writing) information "TO" the SEA controller from a programming device such as a laptop computer.

WARNING: **During any type of download, THE MACHINE MUST BE STOPPED**! During "Program Download", all outputs are turned off and program execution is halted.

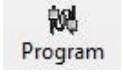
In general, when restoring a SEA processor or module to a previous condition, the following should be done in the following order:

1) "Download" the PLC program to the controller. This is the compiled machine (HEX) code that is written to the program memory space of the controller.
2) "Download" the "Target Board Data" previously saved from the processor.
3) Cycle power to the processor to re-initialize variables.
   Note: This is only necessary after downloading the "Target Board Data".
4) "Download" timing channel setpoints (separate PLS file, if one exists).
5) "Zero" machine (set resolver offset).

Note: An RS-232 cable must be connected from the computer to the **PROG** port of the SEA processor.

To "Download" a PLC program to an SEA processor, perform the following:

This function writes the compiled machine (HEX) code to the program memory space of the controller. During this process program execution is halted and all outputs are turned off.

1) From the Windows **Start** menu, select **Programs >> Systems (folder) >> SYSView**.
2) The SYSView splash screen will be displayed. **Click** the on screen with the mouse or press **Enter**.
3) On the left hand side is displayed the file directory navigation. Use this to navigate to the "**Drive**" and "**Directory**" to select a **SYSdev** PLC type program file to download. A "Double-Click" to the folder of the Directory selection will open it and display the contents.
4) Click a **SYSdev Program** with the mouse to select it, high-light the name and display the "Files" associated with the program. In the listing of the associated "Files", the Target Board "Type" will be shown in brackets [ ] next to the parent name of the file.
5) Using the tool bar at the top of the screen, click on the "**Program**" button. 

6) A message box will shown, displaying the program "Ident" (name), "Revision" and "Checksum" of the program being downloaded (on disk) as well as what is currently loaded in the controller. Click the **Yes** button to continue. This will initiate the "**Program Download**" process.
   Note: Online communications must be established before program download is initiated.

7) As the program is being downloaded, the display will show the current program memory address being written to as "Writing to Program Address: xxxxH". Once program download is done, a message box will be displayed indicating "Program Download Complete". If program download did not complete, a message box will be displayed indicating an error with the process. In either case, click the **OK** button to continue.

   WARNING: If program download did NOT complete then repeat this procedure again. DO NOT continue if program download did not complete.

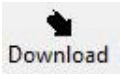
To "Download" the (previously saved) "User Data" to an SEA processor, perform the following:

This function writes the contents of the "DATA (.LDT)" file to the data memory space of the controller, overwriting any existing values.

Note: An RS-232 cable must be connected from the computer to the **PROG** port of the SEA processor.

WARNING: **During any type of download, THE MACHINE MUST BE STOPPED**!

1) From the Windows **Start** menu, select **Programs >> Systems (folder) >> SYSView**.
2) The SYSView splash screen will be displayed. **Click** the on screen with the mouse or press **Enter**.
3) On the left hand side is displayed the file directory navigation. Use this to navigate to the "**Drive**" and "**Directory**" to select a **SYSdev** PLC type program file to download. A "Double-Click" to the folder of the Directory selection will open it and display the contents.
4) Click a **SYSdev Program** with the mouse to select it, high-light the name and display the "Files" associated with the program. In the listing of the associated "Files", the Target Board "Type" will be shown in brackets [ ] next to the parent name of the file.
5) If a "Data" file exists it will be shown in the listing of the associated files as "DATA (.LDT)". If a "Data" file does NOT exist then data download can continue, however a value of ZERO will be written to the registers of the data memory space, effectively clearing the values.

6) Using the tool bar at the top of the screen, click on the "Download" button. 

7) This will display the "**Data Download**" message box, asking the user to confirm their choice to perform a data download of the selected file. Click on the **Yes** button to continue.
8) This will display the "**Target Board Data Download**" dialog box. Note the name of the associated SYSdev file in the title bar at the top of the box. Select the option for "**Standard**" then click the **OK** button. This will initiate the data download process.
9) The value and address of the data being downloaded will be shown along with the progress of the download. This box will close once the download is complete and will then remain online with the controller.

NOTE: **After the data download is complete, cycle power to the processor to re-initialize variables.**

To "Download" the "Timing Channel" Setpoints (separate PLS file) to an SEA processor, perform the following:

Note: An RS-232 cable must be connected from the computer to the PLS **CHAN** port of the SEA processor. The M4500 processor utilizes the same PROG port to program the PLC and PLS.

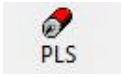
1) From the Windows **Start** menu, select **Programs >> Systems (folder) >> SYSView**.
2) The SYSView splash screen will be displayed. **Click** the on screen with the mouse or press **Enter**.
3) On the left hand side is displayed the file directory navigation. Use this to navigate to the "**Drive**" and "**Directory**" to select a **SYSdev** PLS type program file to download. A "Double-Click" to the folder of the Directory selection will open it and display the contents.
4) Click a **SYSdev Program** with the mouse to select it, high-light the name and display the "Files" associated with the program. In the listing of the associated files, the Target Board "Type" will be shown in brackets [ ] next to the parent name of the file. A PLS type file will have a "CHANNEL (.CHL)" and "PLS Config (.PCF)" file associated with it. When downloading or restoring the PLS program file, the contents of both files are downloaded.
5) Using the tool bar at the top of the screen, click on the "Download" button. 

6) This will display the "**PLS Download**" message box, asking the user to confirm their choice to perform a download of the PLS configuration and timing channel setpoints from the selected file. Click on the **Yes** button to continue.
7) This will initiate the PLS "Download" process, writing the configuration and timing channel setpoints. Depending on the number of setpoints to be programmed, this might take several minutes to complete.
8) The progress of the current channel and setpoint is displayed as the timing channels are downloaded. If an error occurs during the download, a message box will be shown indicating the problem.
9) The progress status display will close when the download is complete.

To "Zero" the machine (set the resolver offset), perform the following:

Mechanical "Machine Zero" should be checked and this function be performed anytime after the PLS configuration and timing channel setpoints have been downloaded or the PLS configuration has been reset.

Note: An RS-232 cable must be connected from the computer to the PLS **CHAN** port of the SEA processor. The M4500 processor utilizes the same PROG port to program the PLC and PLS.

1) From the Windows **Start** menu, select **Programs >> Systems (folder) >> SYSView**.
2) The SYSView splash screen will be displayed. **Click** the on screen with the mouse or press **Enter**.
3) Using the tool bar at the top of the screen, click on the "PLS" button. 

4) This will display the PLS Timing window.
5) From the Target Board drop down selection, select the PLS Target Board that is connected to the computer. **Note**: This selection is only available Offline. Be sure to select the appropriate PLS Target Board prior to going Online with the PLS.
6) From the View menu, select Online Data or press the F3 function key. This will establish online communications with the PLS Target Board and recall the current PLS configuration and timing channel setpoints.
7) Locate the machine at the mechanical "Zero" position.
8) In the box labeled "Resolver Offset" enter in the desired position for the resolver. Typically this is set to Zero, however any value between 0 and the Scale Factor - 1 can be entered.
9) Click the "Set Offset" button to reset the resolver offset.
10) A message box will be displayed to confirm the users choice to change the resolver offset. Click the **Yes** button to continue. A new offset will be calculated such that the resolver position will now be what was entered for the desired Resolver Offset. The current resolver position can be viewed in the POS field of the status bar at the bottom of the screen.