INTRODUCTION

- Drive System Designer (DSD) is the successor to the SSD *LINK* Configuration Editor.
- Its main advantage is that it can support macros, which is the form taken by all new drive configurations, such as the 590+ DC drive and the 690+ AC drive. More on macros, later in this document.
- Macros will also be generated by the "Auto Configure" option, which will be supported by DSD, not by existing versions of ConfigEd.
- DSD also incorporates functional enhancements and additional convenience features that are mentioned later in this addendum.
- There will be no subsequent releases of ConfigEd, after version 5.
- For new users, this transition is transparent. Current experienced users of ConfigEd, may continue to receive upgrades via the modem, after a small registration change is made to their Manager account files. Or, you may choose to install DSD from the CD available from our Sales Department at (704) 588-3246.

FEATURES ADDED

The File - Discard Command



Discard allows you to close a configuration without saving. You will lose all of the changes that were made since the configuration was last saved.

Previously it was impossible to close a configuration without automatically saving it.

The modification number of the configuration will not increase when **Discard** is used.

The Edit - Export Command



You can use **Export** to copy a selected group of function blocks with connections (or text) to a specified file.

It is the same as the **Copy** command, which copies only to the clipboard.

The Edit - Import Command

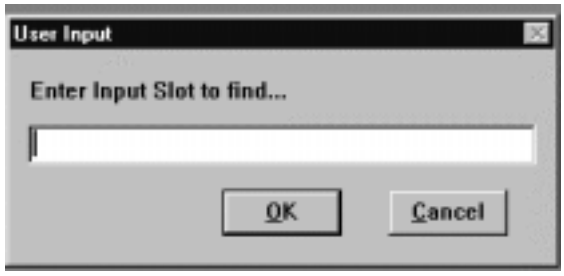


Import will paste the previously "Exported" file into the configuration.

It is the same as the **Paste** command which pastes only from the clipboard**.**

The Edit - Find Input Command (F10)





The **Find Input** command will find an Input Slot in the open configuration. Enter the desired slot number and the page with the slot number will appear.

The Edit - Find Output Command (F11)

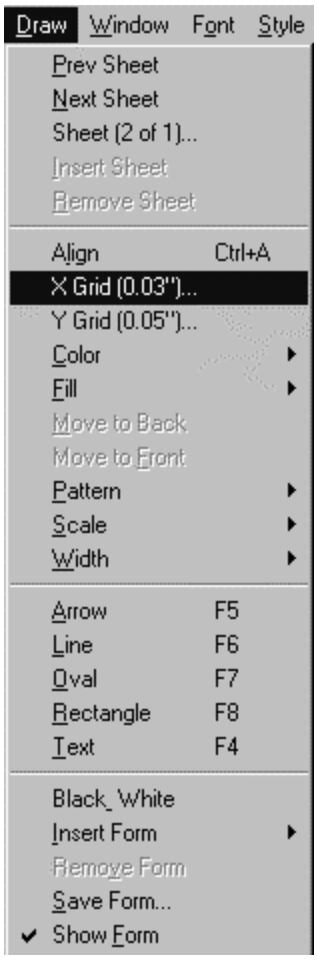




The **Find Output** command will locate an address and slot number in an open configuration. The page with the address and slot will appear automatically.

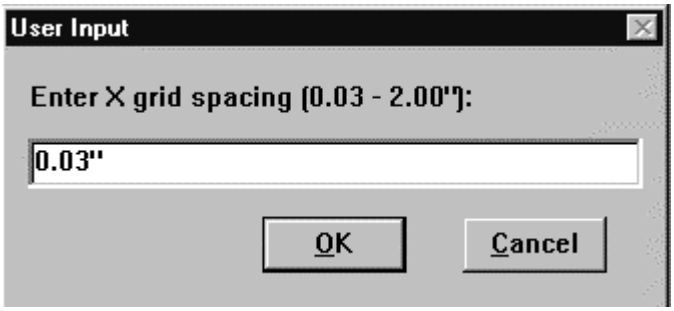
The Window X-Grid Command

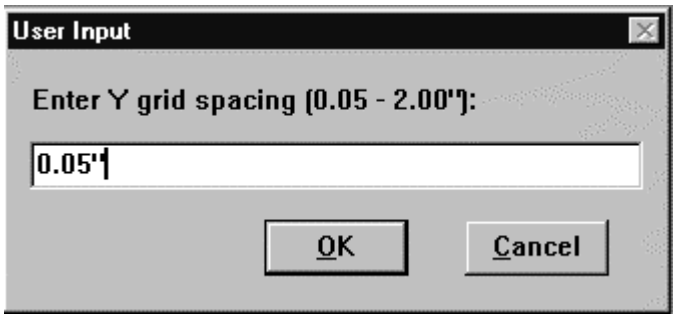
The Window Y-Grid Command



The **X-Grid** and the **Y-Grid** commands, set the placement of the Link blocks on the page.

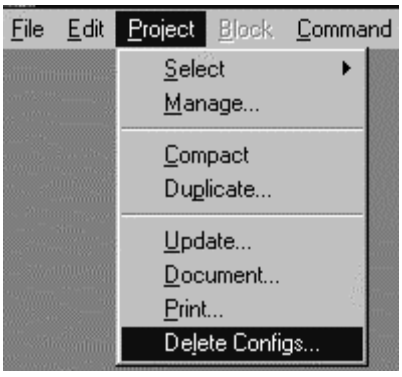
These settings are now adjustable and saved for each module.





WHAT'S CHANGED?

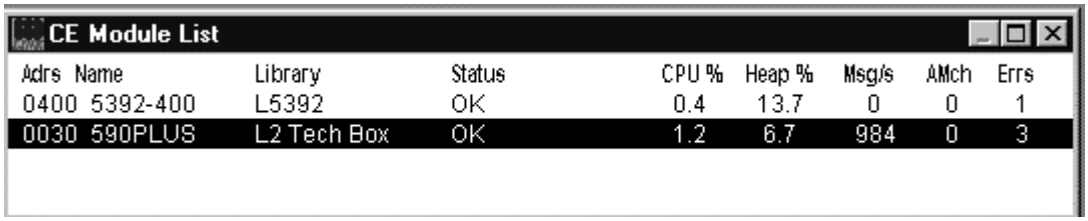
The Project- Delete Configs Command.



The **Project - Delete Configs** command used to be located under the **File** Menu.

It is used to permanently **Delete** a configuration.

The DSD Module List



The DSD Module list contains some new information.

CPU % (Peak) indicates the amount of CPU activity, or how busy the microprocessor was since the last execution of a module list. This information is also available if a **Command / Get Info** is performed.

Heap % (Peak) shows how much static RAM (SRAM) the module's CPU has used since the module last entered the OK state and began executing the installed configuration. This information is also available if a **Command / Get Info** is performed.

Msg/s (Messages/second) is the average number of messages per second of network traffic the selected module receives. This information is also available if a **Command / Get Info** is performed.

AMch (Address Matches) are errors that occur when one module sends out data to a module in the Link system that either does not exist or did not receive the data.
Module gets address matches if

- It is sending data to a module that does not exist on the Link network
- Two nodes have the same address
- The network uses a tapped ring topology and the tapped section containing the destination module is down

This information is also available if a Command / Get Info is performed and in the System Control block while in SAM mode.

Errs (Errors) is the sum of fragments, CRC Errors and overruns.

Fragments: Messages received by the module that are shorter than the 72 bits required.
CRC Errors (Cyclic Redundancy Check word) Bad checksums on messages received into the Link module.
Overruns: Messages received by the Link module are longer than the 72 bits required

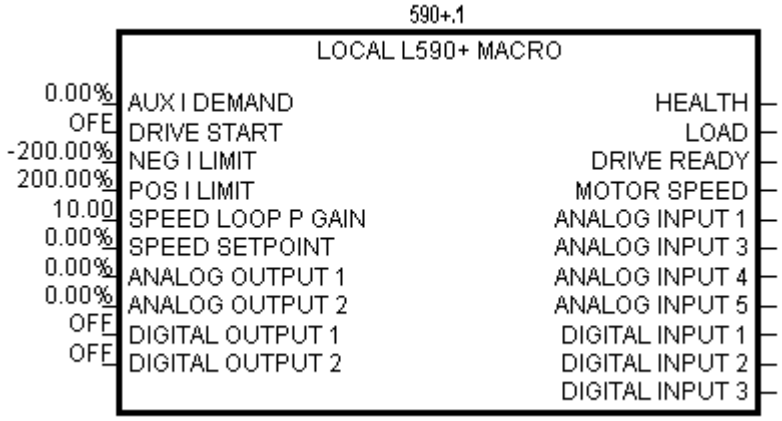
This information is also available if a **Command / Get Info** is performed.

The Address Matches, Fragments, CRC errors and Overruns values should all be zero. On occasion you may see 1 or 2, but normally the numbers in these registers should be zero. If they continually count up, there may be a problem with the fiber optic network.

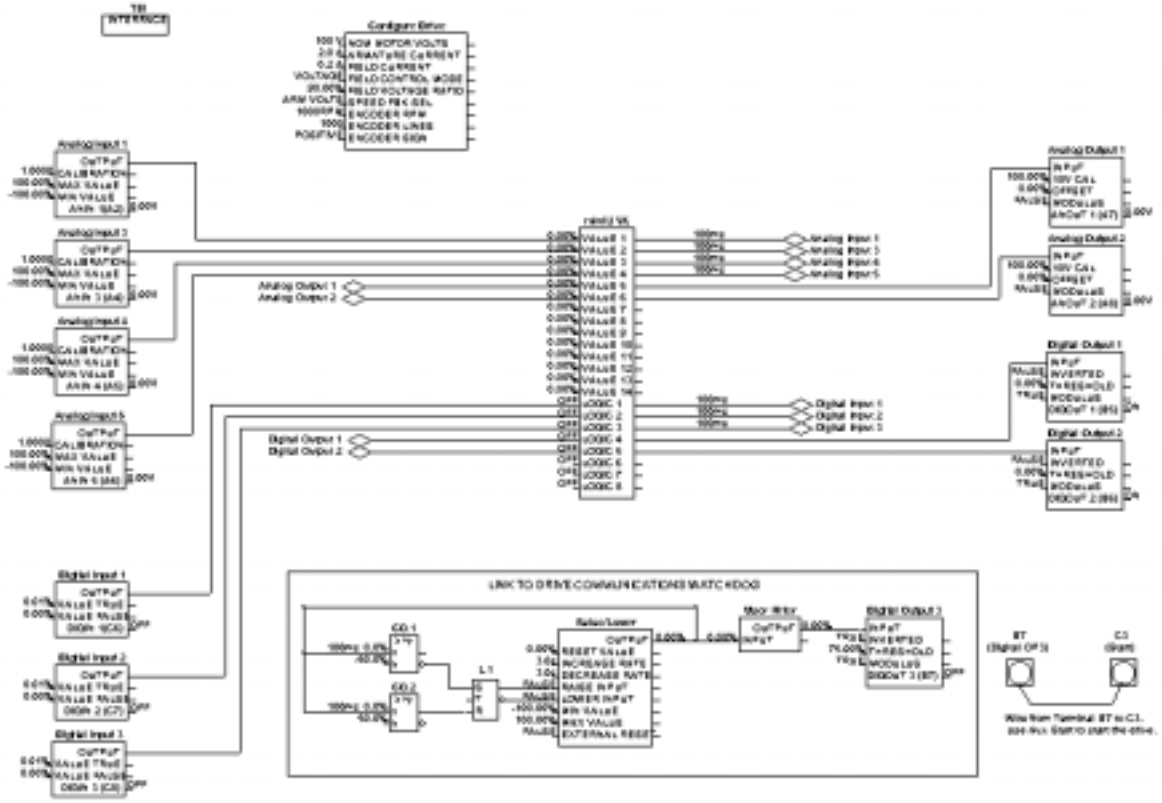
USING THE 590+ LINK *TECHBOX*

To select the 590+ Link TechBox, go **File-New** and select L590TechBox. When prompted, enter an Address and a Name.

The 590+ TechBox template will appear as a *Macro*, as shown below

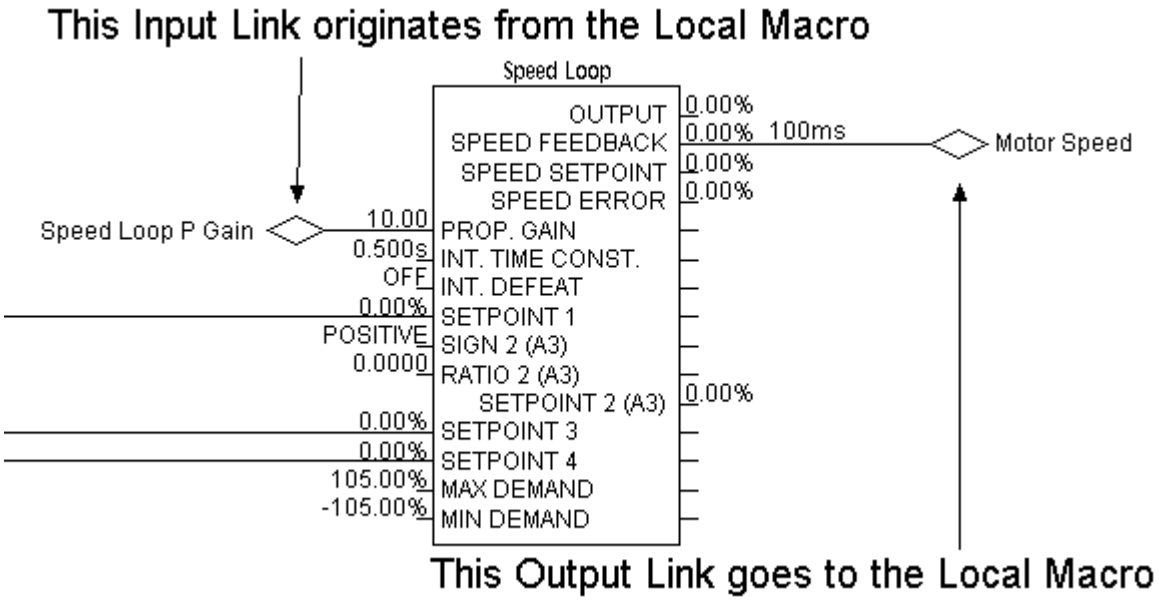


If you double-click on the *Local L590+ Macro* template, it will open as shown below.

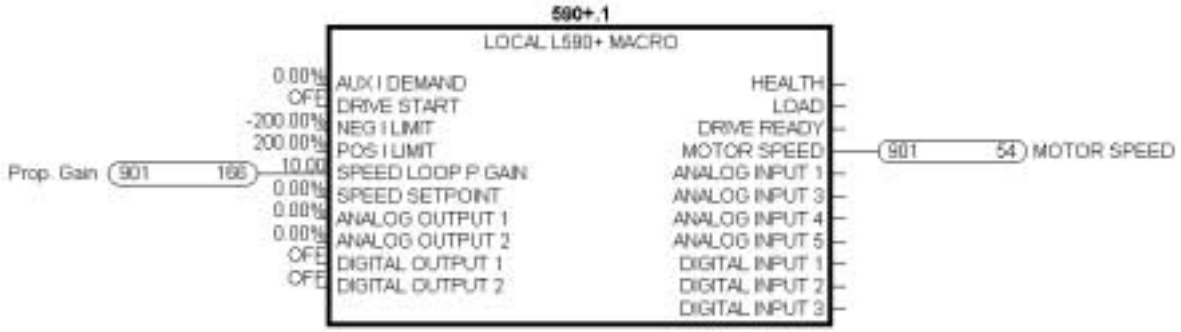


When a **Block/Output** or **Input** Link is added, it will connect to the *Local Macro* as a 

connection with the name you entered. In the example shown below, the Prop. Gain appears on the right side as an **Input** named Speed Loop P Gain and Speed Feedback appears on the right hand side as an **Output** with the name Motor Speed.



Now you can connect an **Input** link and an **Output** link to the *Local Macro,* which then will be connected to the modules on the Link network.



590+ Native Block Triggering

In the 590+ drive, there are some function blocks that do not "activate" until they are connected to another 590+ native block This saves processing power within the drive. These blocks have either a *destination tag* or *source tag* and are listed in the 590+ MMI Menu under: System/Software/Configure I/O. To "activate" these blocks, they must connect or pass through a native 590+ block. If these blocks are connected only to an **Input** link or an **Output** link, they will not trigger or turn on.

This is why the Analog Inputs, Digital Inputs, Analog Outputs and the Digital Outputs all pass through the *miniLink* block in the sample configuration.

The following blocks must have their respective *Source tag* or *Destination tag* connected to 590+ native block in order to "activate":
All Analog I/O, all Digital I/O, Raise/Lower Output, Ramp Output, Setpoint Sum 1 Output, PID Output, Diameter, Taper, Setpoint Sum 2 Output, Positive I Clamp, Negative I Clamp, 5703 Scaled Input, 5703 Output, Link 11 Input, Link 11 Aux., Link 11 Output, Link 12 Input, Link 12 Aux. and Link 12 Output.

Scaling

There is no over-range built into the *LINK* Value number. This means that the maximum value a number can take is 1.0. In drives and control systems, an over-range is necessary to allow feedback control of a variable when it is operating at full range. Therefore, an over-range must be built into the number range when the system is being configured. It is for this reason that *LINK* values for certain different variables have different scaling properties. These rules need to be followed if you are interfacing the techbox with other *LINK* function blocks as part of a *LINK* system.

Generic values

These are values that need no over-ranging.
100% of the variable = 100% in *LINK*
Example: A speed ratio signal. Range 75% to 100%
Use the Value Reader 100 and Value writer 100 blocks in your techbox configuration.

Speed values

A drive running at full line speed may need to exceed that speed to satisfy a controlled variable.
100% of drive speed = 83.3333% in *LINK* which is the same as
120% of drive speed = 100% in *LINK*
Example: A line speed signal from a LINK Master Ramp to a drive section. Range 0% to 83.3333%

When using speed values in *LINK* configurations, it is necessary to multiply the reference signal to the drive by 83.3333%.

Some special function blocks like the Master Ramp already have this multiplier built in. Refer to specific function block help sheets for details.

While it is necessary to multiply the speed reference by 83.3333%, it follows that the speed feedback signal coming back from the drive needs to be divided by 83.3333%. Use the Value Reader 120 and Value Writer 120 blocks in your techbox configuration.

Current values

A drive may occasionally need to exceed its rated continuous current and go into a short-term overload condition.

200% of drive current = 100% in *LINK*

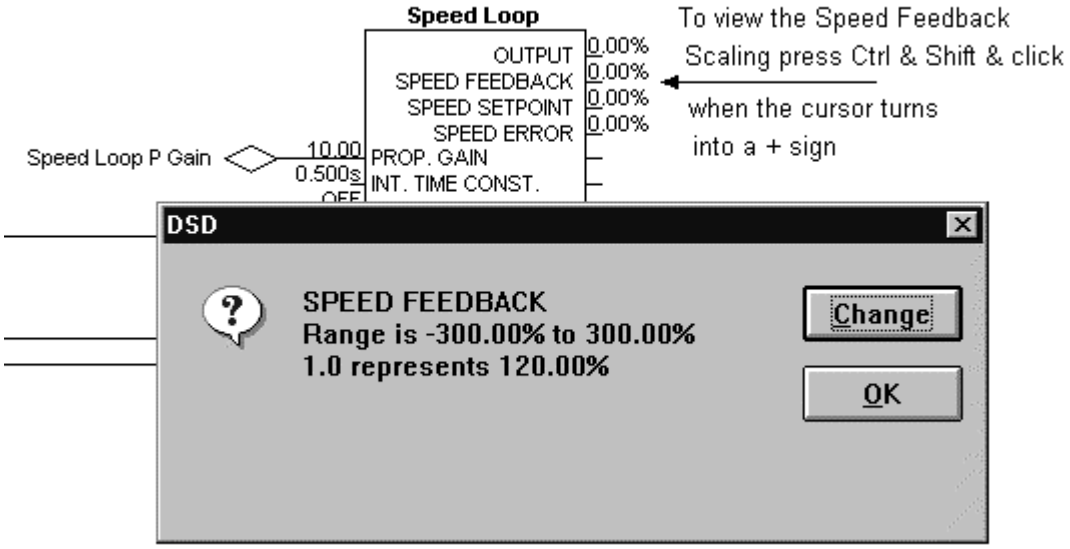
Example: A load indicating signal. Range -200% to +200%

When using current (torque/load) values in *LINK* configurations, it is necessary to multiply the reference signal to the drive by 50%.

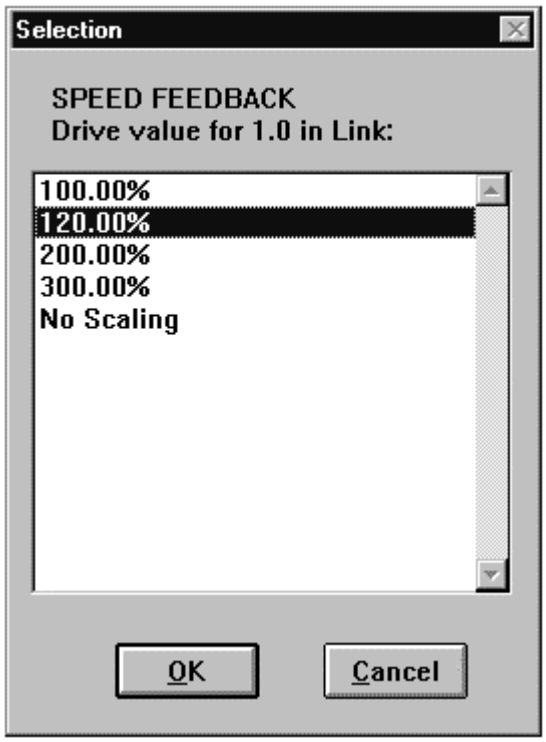
While it is necessary to multiply the current (torque) reference by 50%, it follows that the current (torque, load) feedback signal coming back from the drive needs to be divided by 50%. Use the Value Reader 200 and Value Writer 200 blocks in your techbox configuration.

VIEWING & CHANGING THE SCALING

To view the scaling on a link parameter, press *Ctrl, Shift* & *click.* A box will appear as shown below:



To change this value, click on the **Change** box a **Selection** box will appear. Select your desired value and click on the **OK** button.



INTRODUCTION

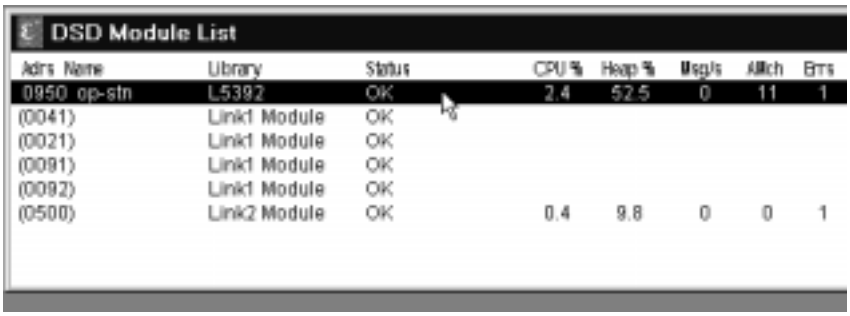
- Drive System Designer (DSD) has been updated to version 1.15.
- The user now has the option to save and restore the monitor list and also storing a text log of all the information written to the monitor window.
- Some new *SAM* monitoring test points have been added to the primary system control blocks in *LINK*. These test points can be brought out through a macro for monitoring, but will only work in a SAM mode.
- Many *LINK* function blocks have been updated with more online monitoring points in *SAM*.

SAM FEATURES ADDED

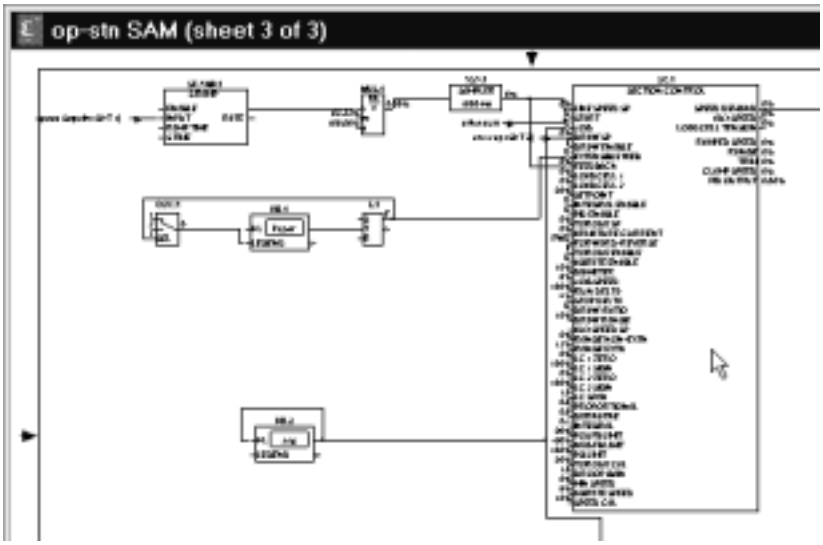
Saving and restoring Monitor lists

Saving a Monitor List

First, go online with a module by clicking on it in the `Module List`.

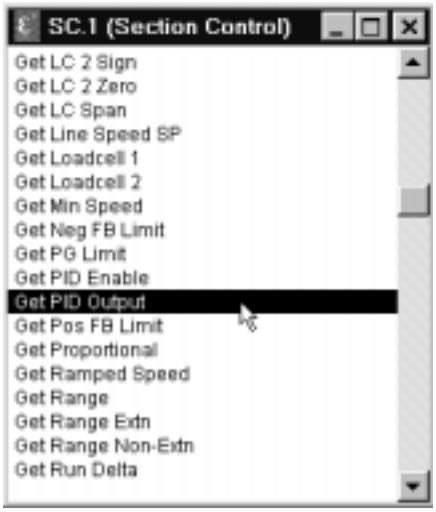


An online copy of the configuration will appear, notice the letters “SAM” after the configuration name.

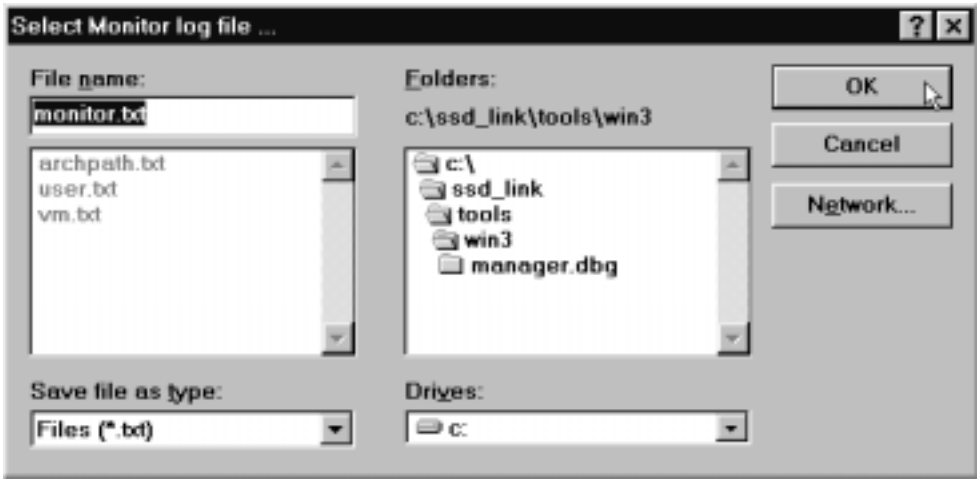


To pull up a list of parameters that can be monitored online, Click inside any *LINK* function block. For this example, the `Section Control` block was clicked.

The list is in alphabetical order starting with the gets and then the sets. The gets are for monitoring a parameter and the sets for changing it. The ones associated with the monitor list are the gets.



This list shows all the parameters inside the section control block that can be monitored online. To pull up a `Monitor list` hold the shift key and double click one of the get parameters. The program will then prompt for a name for the `Monitor Log` file. Click on `OK` when finished.



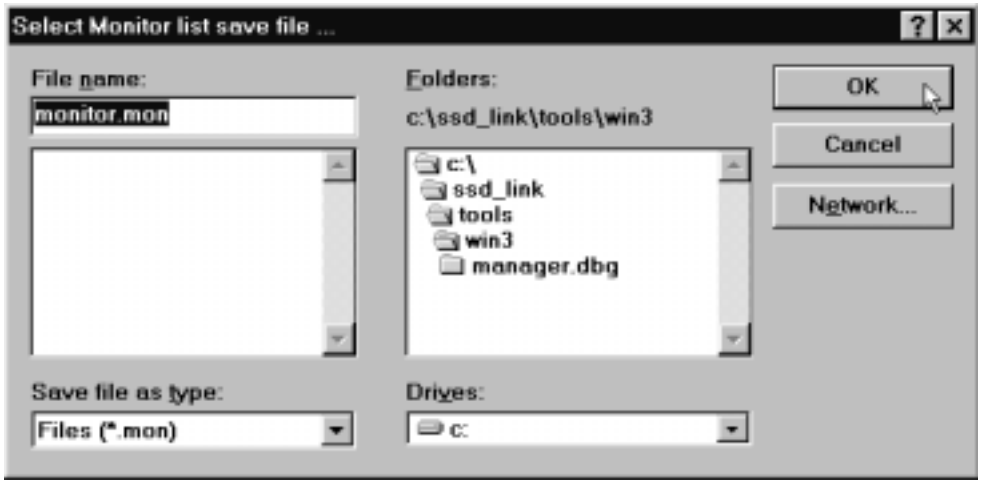
Any information displayed in the `Monitor List` will be stored in the log file. The `Monitor List` is the only window where the parameters are updated real time. The number of parameters monitored should be limited to 10 – 15 total but are not limited to a single address. The `Monitor List` now has the capability to be saved. To save the `Monitor List,` make sure it is the active window, by clicking on the title bar.



Go to `File` and click on `Save As`.



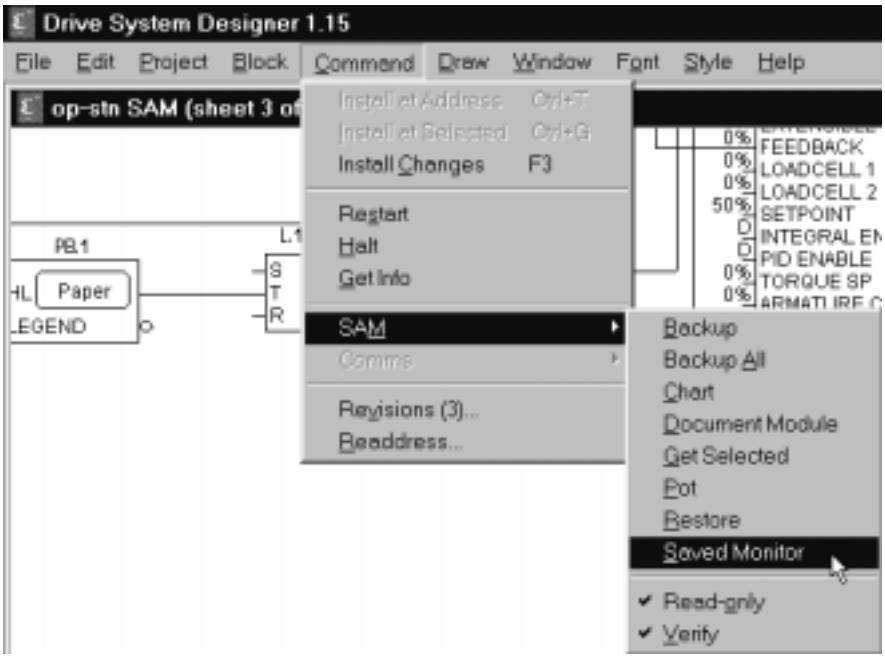
Type in a name for the `Monitor List`, or use the default. When finished click on `OK`.



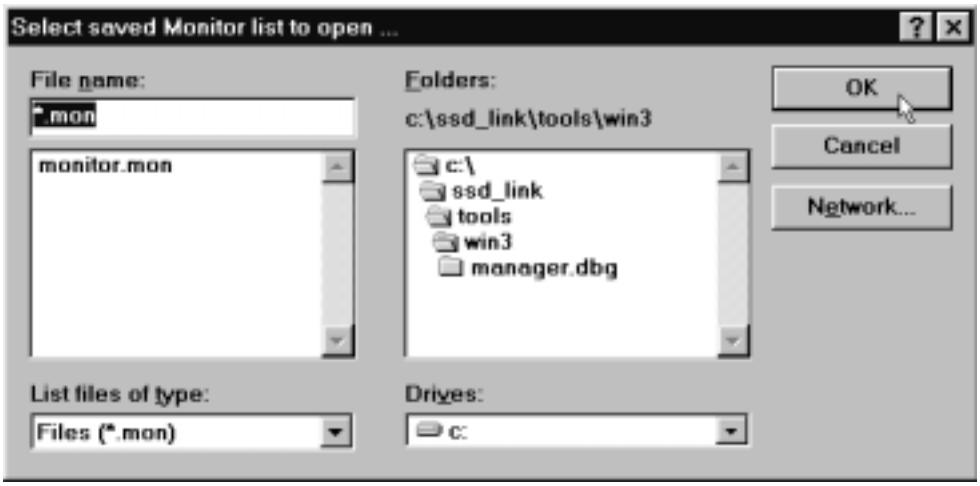
The `Monitor List` will be saved to the last folder opened in the above window. For this example the `Win3` folder. Once it has been save it can be reopened any time in *SAM*, by following the directions in the following section.

Restoring a monitor list

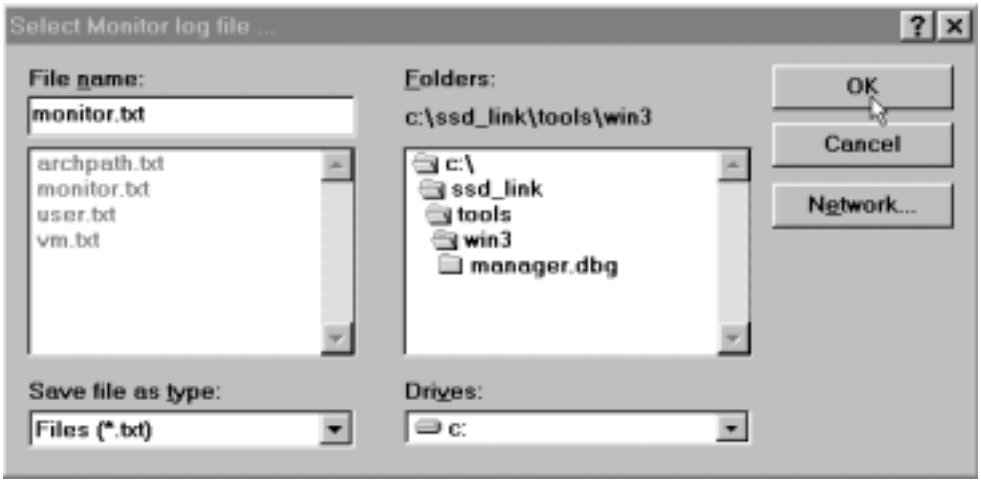
Follow the previous section on going online with a module. Once online, a saved `Monitor List` can be restored. Click on `Command`, then `SAM`, then `Saved Monitor`.



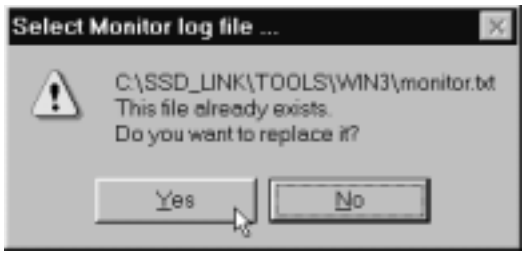
Now select one of the saved monitor lists and click `OK`.



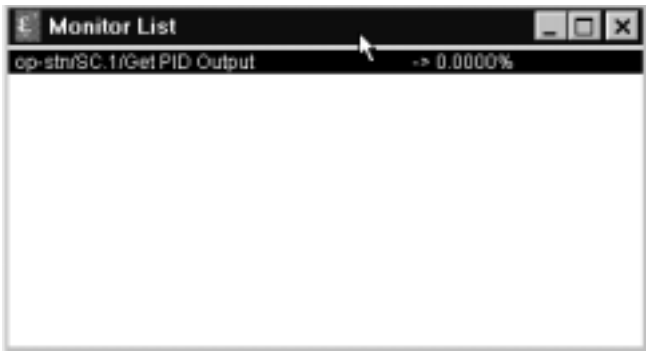
The program will also ask u what text file (txt) to save the monitor log too.



If the log file already exists, the program will ask if the existing file should be overwritten. Click `Yes` or `NO`.



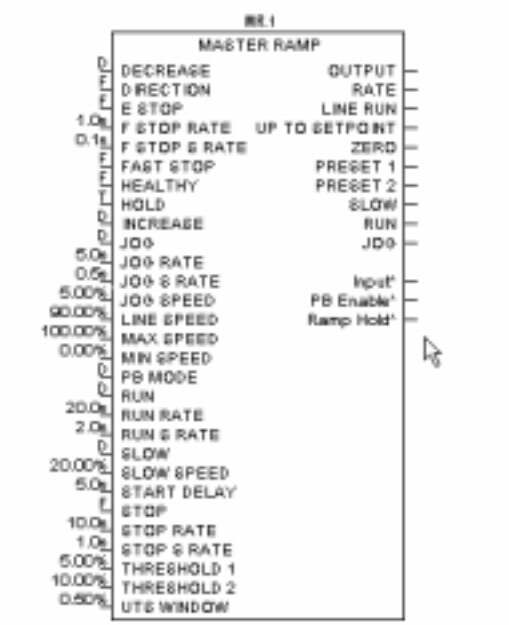
If `No` is clicked, a new log file name will need to be entered.



If `Yes` is clicked, the saved `Monitor List` will appear, the way it was originally saved.

SYSTEM FUNCTION BLOCK ENHANSEMENTS

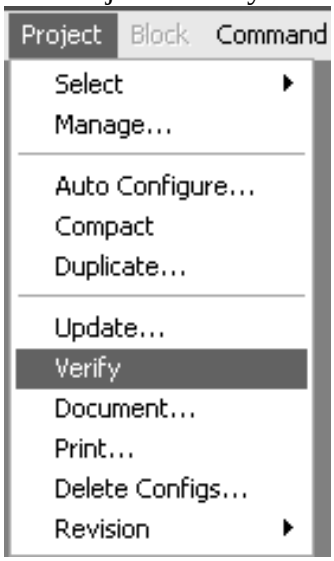
There are 4 LINK system blocks that have been updated with new *SAM* functions, they are the `Master Ramp`, `Section Control`, the `SPW3` winder block and the `CPW` winder block. These new *SAM* functions will allow the user to send out the information to be monitored through a macro, but will only work when in a *SAM* mode.



The new *SAM* functions appear on the output side of the blocks, and the connection names have a smaller font, and are followed by an asterisk. They look like regular outputs, but will only function when in a *SAM* mode. An output connection can be tagged to these new outputs and sent out of a macro, for monitoring on the outside of a macro.

FEATURES ADDED

The Project - Verify Command



This command only applies to project that use an Overview module to map the configuration connections.

“OvrVw” module can be created either through AutoConfigure wizard [Project | AutoConfigure] or manual generation.

In order to execute this command the Link project must contain a module which its name starting with “Ovrvw”.
Verify command simply looks at Overview modules and make sure all link connections are based on the Overview mapping. The “Ovrvw” is the mapping::master configuration. If a connection is made in the “Ovrvw” but it is not in the individual Link configuration, it will get drawn in the Local module. This command can work successful if connections are not updating.

Always check the scratch pad for list of deleted connections.