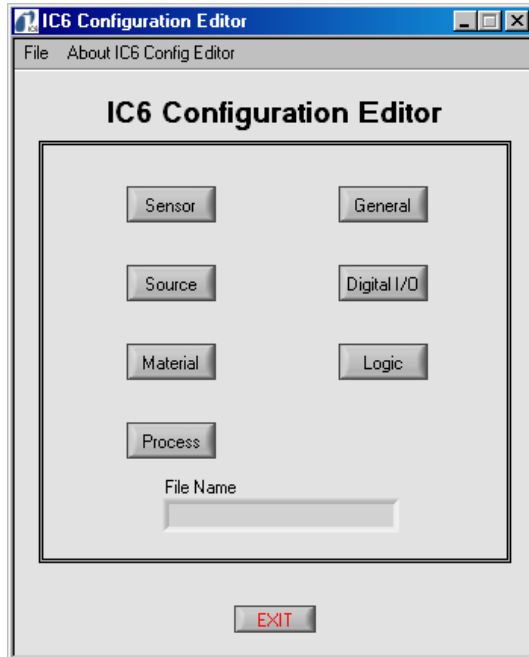


IC6 Configuration Editor Manual

Introduction

The IC6 Configuration Editor application is used to convert IC/5 configuration files to IC6 configuration files and to edit the IC6 configuration. Since there are differences in the IC/5 and IC6, some items do not convert completely. Some items are not transferred and some items are modified during the conversion. Once the conversion is finished, the user can edit the IC6 configuration to complete the configuration file.



File

Read IC6 File

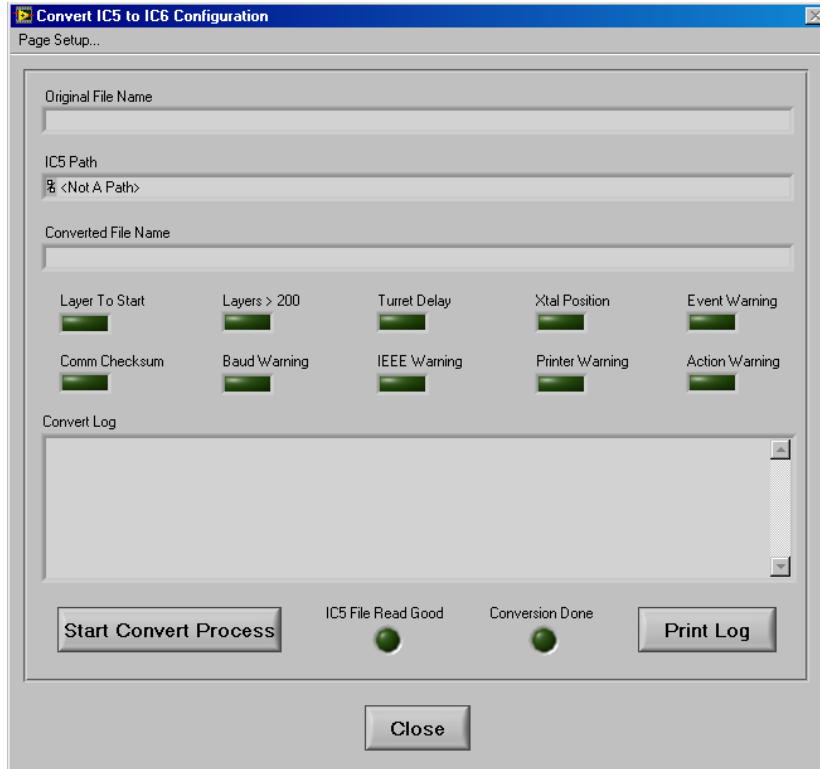
IC6 configuration to Read window will display to select the IC6 configuration (*.isc) file to be read. The file name appears in the file name box.

Write IC6 File

Creates or overwrites an IC6 configuration file (*.isc). **File to save IC6 Configuration** window will display to select the path and file name for the IC6 configuration file to overwrite or a new file name can be entered to create a new IC6 configuration file.

Convert IC5 Configuration

Convert IC5 to IC6 Configuration window will display. This list item reads an IC/5 configuration file and performs a conversion to the data to place the equivalent IC6 configuration into the application. The user can then edit the data if desired and write an IC6 configuration file.



To do conversions click the **Start Convert Process** button.

Select File to Read window will display. Select the IC/5 configuration file that is to be converted.

Click **OK** to start the conversion. The IC/5 configuration file name will appear in the **Original File Name** text box, the path will be displayed in the **IC5 Path** text box, and the new IC6 file name will be displayed in the **Converted File Name** text box.

The IC/5 configuration file is read and checked to be a valid IC/5 configuration file. If the file is valid, the conversion will take place. If there are any warnings encountered, they will be displayed in dialog boxes. Each warning dialog box needs to be closed to continue. The warning indicators will illuminate indicating the warnings found. There is also a convert log with the name of the file converted and a list of the warnings encountered. This log can be sent to a printer by clicking the **Print Log** button. **IC5 File Read Good** indicator illuminates to signify that the IC/5 file was read correctly and the **Conversion Done** indicator illuminates when the conversion is complete. The window is closed by clicking the **Close** button. The converted data is now in the application memory in a format that can be used to create an IC6 configuration file.

Page Setup is used to customize a page layout and select a printer to print the conversion log.

Warning Indicators

- Layer to Start IC/5 allows layer to start value up to 250. IC6 allows value up to 200.
- Layers > 200 IC/5 allows process with 250 layers. IC6 allows 200 layers

- Turret Delay IC/5 allows one second. IC6 allows two seconds.
- Xtal Position IC/5 allows individual crystals. IC6 allows a sequence of crystals.
- Comm Checksum RS-232 was set for checksum protocol. Not used in IC6.
- Baud Warning Baud Rate was set for 2400 or 4800. Not used in IC6.
- IEEE Warning Remote Comm Path was set for IEEE. Not used in IC6.
- Printer Warning Data Logging or Print Screen path was set for the printer. Not used in IC6.
- Action Warning Counter, Timer or Rate Watcher Actions were not transferred.
- Event Warning Counter or Timer Events were not transferred.

Conversion differences are as follows:

Layer Parameters

IC/5 has 16 layer parameters per layer and IC6 has six. The ten layer parameters in IC/5 that are not available as layer parameters in IC6 are located under material parameters. These ten IC/5 parameters are not transferred into the IC6 configuration. The material parameters in the created IC6 configuration file will reflect IC6 default values for the ten corresponding layer parameters from the IC/5 configuration. These parameters must be edited by the user after the conversion has occurred. They are:

- Rate
- Time limit
- RateWatcher Time
- RateWatcher Accuracy
- Rate Ramp 1 Rate
- Rate Ramp 1 Thickness
- Rate Ramp 1 Time
- Rate Ramp 2 Rate
- Rate Ramp 2 Thickness
- Rate Ramp 2 Time

IC/5 allows the creation of a process with more than 200 layers. IC6 will only allow 200 layers in a process. If a process has more than 200 layers, a warning message is displayed, the **Layers > 200** warning indicator illuminates, and the layers over 200 are not transferred.

Material parameters

- Recorder function

IC/5 uses one value to select the recorder function and range. The IC/5 value is transferred into separate IC6 parameters.

- Q & S

In IC/5, Quality and Stability have one value to set these parameters. In IC/5, the Quality parameter sets the percent and count, the Stability parameter sets the single count and total count. These IC/5 values are transferred into separate IC6 parameters for these parameters.

- Sensor Option

IC/5 used one value in the sensor option to set the Sensor failure trigger and failure action. The IC/5 value is transferred into separate IC6 parameters for these settings.

- Xtal Position

IC/5 allowed the user to select the individual crystals used for each material. IC6 allows the user to select a sequence of crystals. This parameter is not transferred but a warning is displayed and the **Xtal Position** warning indicator illuminates if the IC/5 value for this parameter is not zero.

Utility Parameters

The following utility parameters are transferred into IC6 general parameters:

- Layer to Start

IC/5 allows a Layer to start value of 1 to 250. IC6 allows a Layer to start value of 1 to 200. A warning message is displayed and the **Layer to Start** warning indicator illuminates if the IC/5 configuration has this parameter set above 200.

- Stop on Max Power

This is a utility parameter in IC/5. This is a material parameter in IC6. There will also be a conversion from the IC/5 Yes/No to the IC6 Stop Process or Continue. Each material in IC6 will have this parameter set to the IC/5 setting.

- Aggregate Multiplier

This is a utility parameter in IC/5. This is a material parameter in IC6. Each material will have this parameter set to the IC/5 setting.

In IC6, the DAC settings are set as general parameters. In IC/5, the voltage and polarity are set as source parameters. The source DACs are set from the source settings in the IC/5 configuration

file. The general parameter DACs not used as a source DACs will remain at their default values in IC6.

Communication Parameters

- Remote Comm Path

This parameter is not used in IC6. If it is set for IEEE in IC/5, a warning message is displayed and the **IEEE Warning** indicator illuminates.

- Data Log Path

If the IC/5 Data Log path is set to RS-232, then the IC6 RS-232 Protocol will be set to Dlog comma or Dlog Page, corresponding to the IC/5 Data log Format, otherwise the IC6 Protocol will be set to standard.

- Data Log Format

If IC/5 Data Log Path is set to 'File', then IC6 USB Data Log Format will be set to the Data Log Format used in IC/5.

- Data Logging & Print Screen Path

If either IC/5 Path, Data Logging or Print Screen, is set for the printer, a warning message is displayed and the **Printer Warning** indicator illuminates indicating a printer is not available in IC6.

- Baud Rate

2400 and 4800 Baud are not allowed in IC6. A warning message is displayed and the **Baud Warning** indicator illuminates if IC/5 is set to use either of these rates. The Baud will be set to the IC6 default value of 115200.

- Checksum

If IC/5 is programmed to use checksum, then a warning message is displayed and the **Comm Checksum** warning indicator illuminates indicating that this protocol is not used in IC6.

Sensor Parameters

- Sensor Type

IC/5 values are converted to IC6 values.

The dual sensor will convert to the Crystal Two in IC6. The second sensor used in IC/5 will be set to IC6 default values.

The rotary sensor programmed in the IC/5 configuration will be set as a generic sensor with six positions, one pulse for one second on and one second off in the IC6 configuration.

- Output Type

This is converted to an output parameter in IC6.

- Recorder function

Recorder function and range are two separate parameters in IC6. The IC/5 values will be split into two values for IC6.

Source Parameters

- Voltage Range

The IC6 voltage parameters are input as general parameters. The polarity signs will transfer from the IC/5 source parameters to the IC6 general parameters

- Output Type

This is converted from an IC/5 source parameter to an output parameter in IC6.

- Turret Delay

IC6 does not allow a delay of one second. The minimum value allowed in IC6 is two seconds. A warning message is displayed and the **Turret Delay** warning indicator illuminates if the IC/5 value is set to one second.

Logic

There are differences between IC/5 and IC6 in the use of the timers and counters.

- The timers and counters decrement in IC/5 and they increment in IC6.
- In IC/5, the timer and counter limits are programmed as Actions. In IC6, the counters are cleared and the timers are started or canceled as Actions.
- In IC/5, when the timer or counter reaches zero an event occurs. In IC6, the timer and counter values are incremented to a user defined value in order to set an event.
- The counters are incremented as Actions in IC6.

Counter and timer actions and events are not transferred in the conversion process. Thus, each logic statement where a counter or timer is used is not transferred.

The Rate Watcher actions operate differently in IC/5 and IC6. The logic statements that use RateWatcher actions will be cleared in the transfer process.

A warning message is displayed indicating the Logic statement numbers that were not transferred and the **Action Warning** indicator illuminates.

Other Action differences

There are a few actions that use the numeric input values for different parameters. See the table below.

| ACTION | IC/5 | IC6 | Conversion Setting |
|------------------------------|------------------------------------|----------------------|---|
| Final Thickness Trigger # | # = Layer in Deposit (0/1/2) | # = Material 0 to 32 | Set to zero (all) |
| Non Deposit Clock Hold | No # input | # = Material 0 to 32 | Action Set to Clock Hold. # set to zero (all) |
| Soak Hold 1 and 2 # (on/off) | # = Source (1-6) | # = Material 0 to 32 | Set to zero (all) |
| Xtal Fail Inhibit | No # input | # = Sensor 0 to 8 | Set to zero (all) |
| Zero Thickness # | # = Layer (0/1/2) | # = Material 0 to 32 | Set to zero (all) |
| Zero Time | No # input (Layer Displayed 0/1/2) | # = Material 0 to 32 | Set to zero (all) |

Differences in Events

- There is no 'Chopper Wheel' event in IC6. If the 'Chopper Wheel' event is used in the IC/5 configuration, the event is changed to 'In Deposit' in the IC6 configuration.

Clear Memory restores the configuration memory to IC6 default values.

Exit is used to close the application.

IC6 Configuration Editor Window

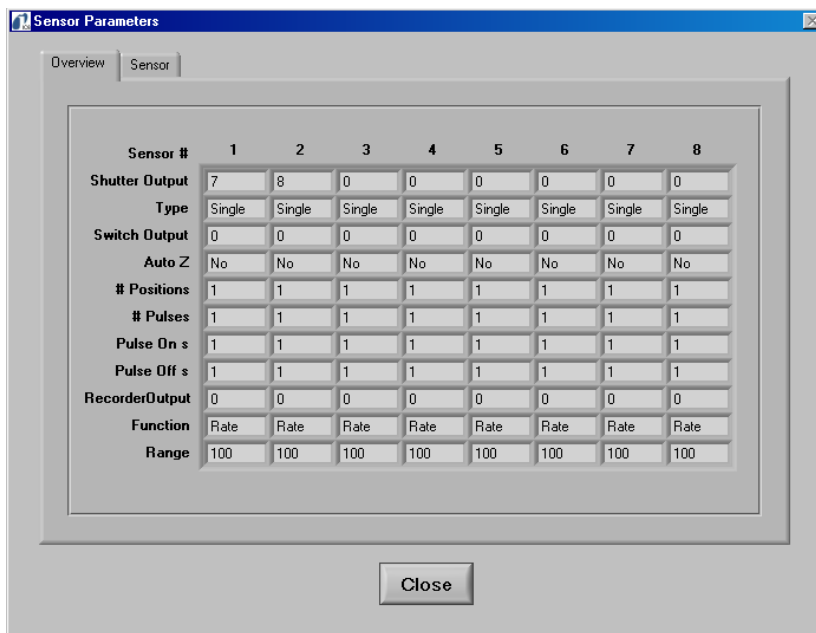
The editor is set up to resemble an IC6 configuration. The data is set up in different parameter categories. There are sensor, source, material, process, general, I/O and logic parameters.

Minimum, maximum and default values for each parameter category are found in the IC6 manual. Refer to Chapter 4 through Chapter 9 in the IC6 Operating Manual for an explanation of parameters. Holding the mouse pointer over the input box for each value displays a short explanation along with the default, minimum and maximum values for the parameters.

Sensor

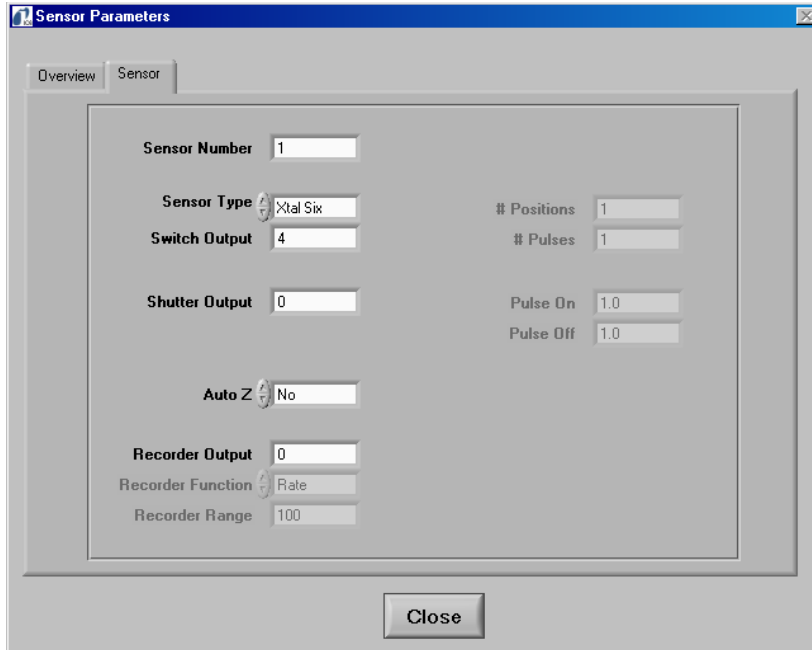
From the **IC6 Configuration Editor** window, click the **Sensor** button to display the **Sensor Parameters** window.

Overview Tab



This is an overview of all the sensor parameters. The parameters cannot be edited from this window.

Sensor Tab

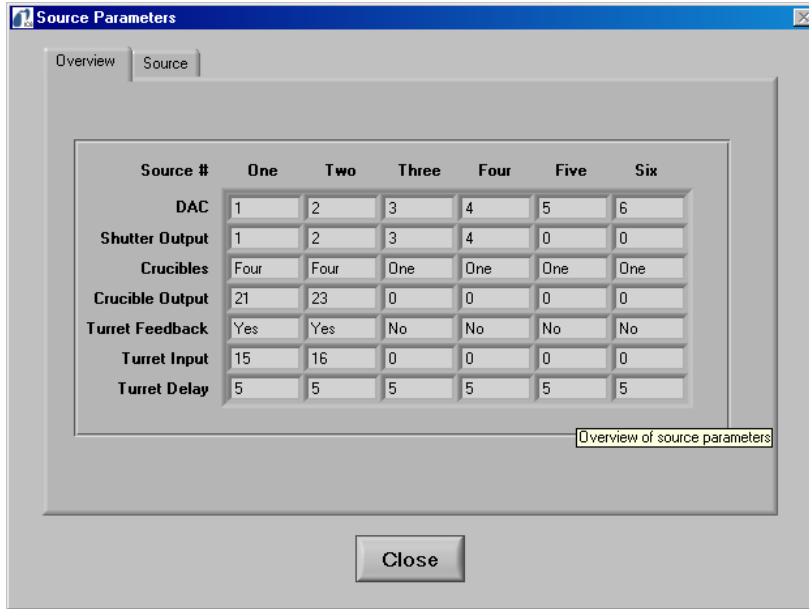


Select the **Sensor** tab to edit the parameters for the sensors. Enter the sensor number to edit the parameters for that sensor. Dimmed parameters are unavailable to be edited. Parameters are unavailable based on parameter selections made. Values entered that are above or below the acceptable range are corrected to the maximum or minimum values. If values are entered that may cause an error/conflict in the IC6 configuration, an error message will appear. Acceptable values need to be entered before closing the window.

Source

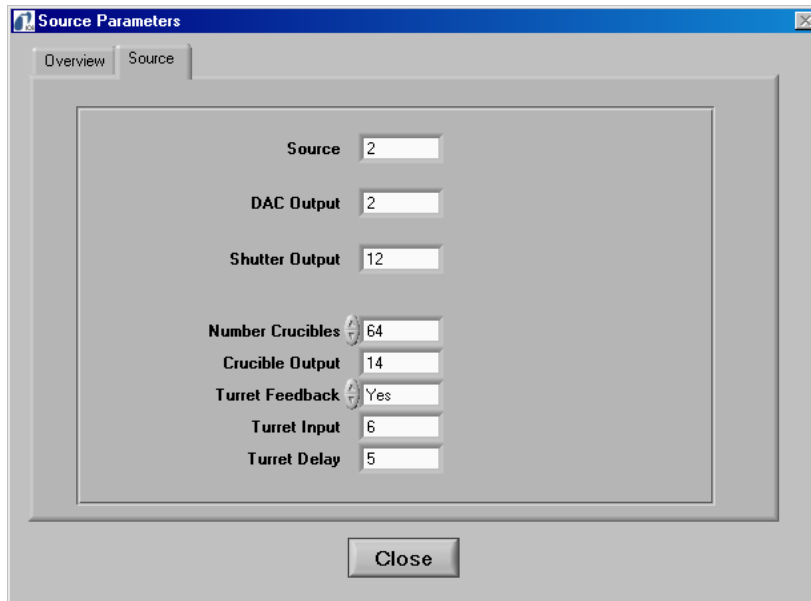
From the **IC6 Configuration Editor** window click the **Source** button to display the **Source Parameters** window.

Overview Tab



This is an overview of all the source parameters. The parameters cannot be edited from this window.

Source Tab

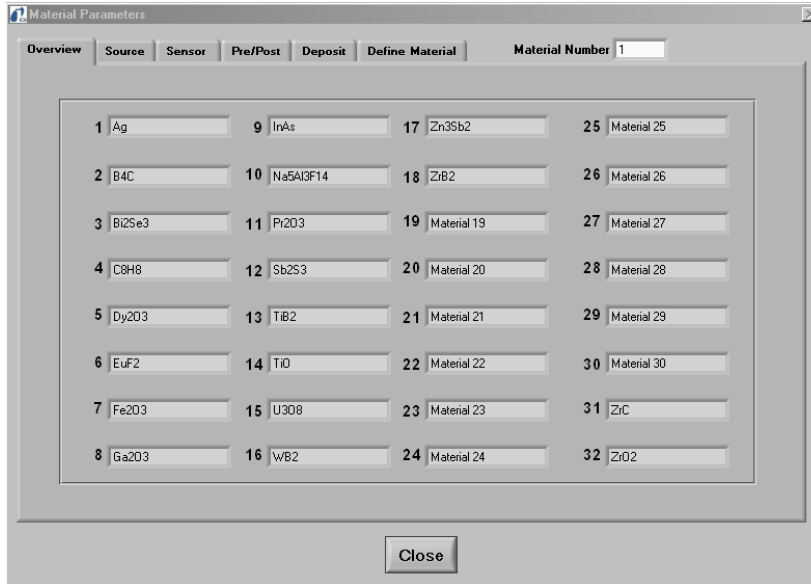


Enter the source number to edit the parameters for that source. Dimmed parameters are unavailable to be edited. Parameters are unavailable based on parameter selections made. Values entered that are above or below the acceptable range are corrected to the maximum or minimum values. If values are entered that may cause an error/conflict in the IC6 configuration, an error message will appear. Acceptable values need to be entered before closing the window.

Material

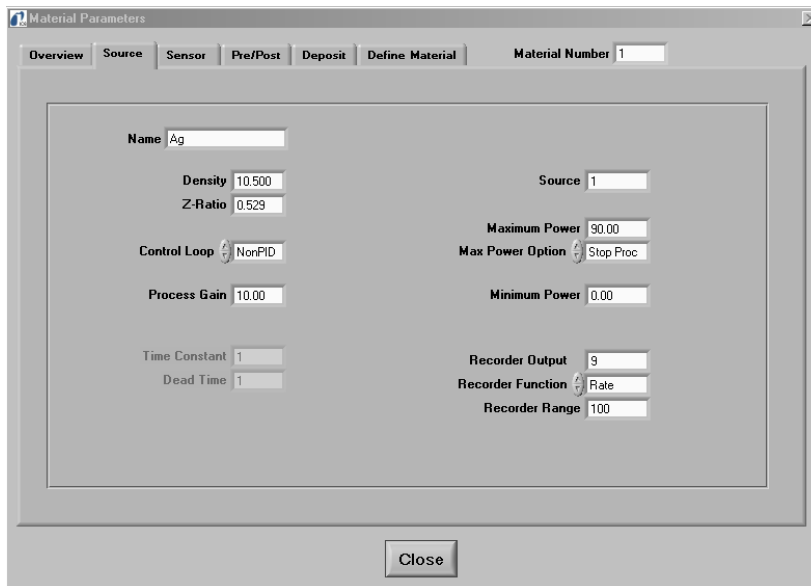
From the **IC6 Configuration Editor** window click the **Material** button to display the Material Parameters window.

Overview Tab



This is an overview of the material names defined. Undefined materials display the name Material #. Enter the material number for the material parameters to be edited.

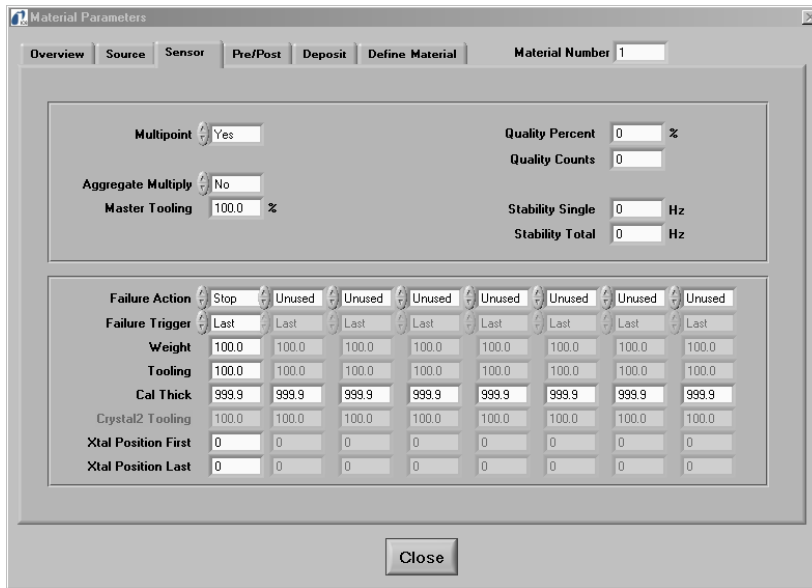
Source Tab



Select the **Source** tab to edit selected material source parameters.

Dimmed parameters are unavailable to be edited. Parameters are unavailable based on parameter selections made. Values entered that are above or below the acceptable range are corrected to the maximum or minimum values. If values are entered that may cause an error/conflict in the IC6 configuration, an error message will appear. Acceptable values need to be entered before closing the window.

Sensor Tab



Select the **Sensor** tab to edit selected material sensor parameters.

Dimmed parameters are unavailable to be edited. Parameters are unavailable based on parameter selections made. Values entered that are above or below the acceptable range are corrected to the maximum or minimum values. If values are entered that may cause an error/conflict in the IC6 configuration, an error message will appear. Acceptable values need to be entered before closing the window.

Pre/Post Tab



Select the **Pre/Post** tab to edit the selected material predeposit and postdeposit parameters.

Dimmed parameters are unavailable to be edited. Parameters are unavailable based on parameter selections made. Values entered that are above or below the acceptable range are corrected to the maximum or minimum values. If values are entered that may cause an error/conflict in the IC6 configuration, an error message will appear. Acceptable values need to be entered before closing the window.

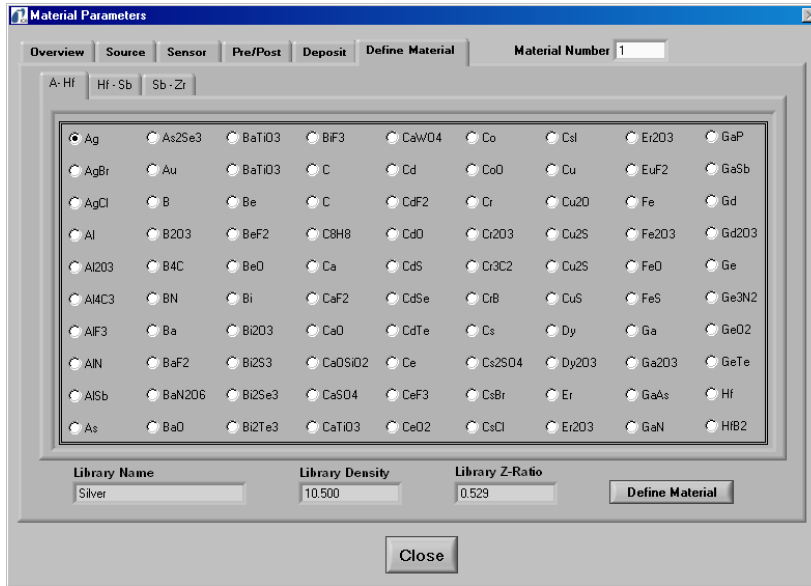
Deposit Tab



Select the **Deposit** tab to edit the selected material deposit parameters.

Dimmed parameters are unavailable to be edited. Parameters are unavailable based on parameter selections made. Values entered that are above or below the acceptable range are corrected to the maximum or minimum values. If values are entered that may cause an error/conflict in the IC6 configuration, an error message will appear. Acceptable values need to be entered before closing the window.

Define Material



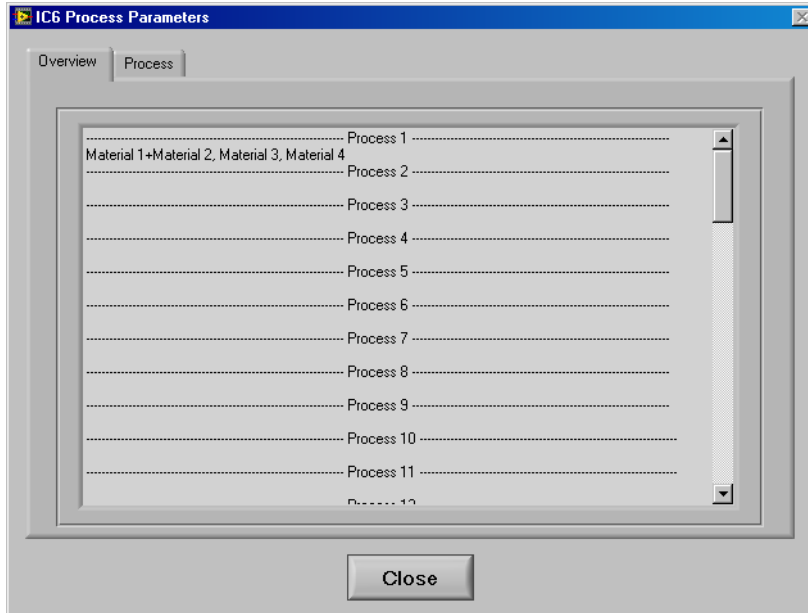
Select the **Define Material** tab to define the selected material.

Selecting a material displays the Density and Z-Ratio for that material. There are three tabs of materials to select from. Clicking the **Define Material** button inputs the Density and Z-Ratio of the selected material. The Material name is listed as the chemical formula for that material.

Process

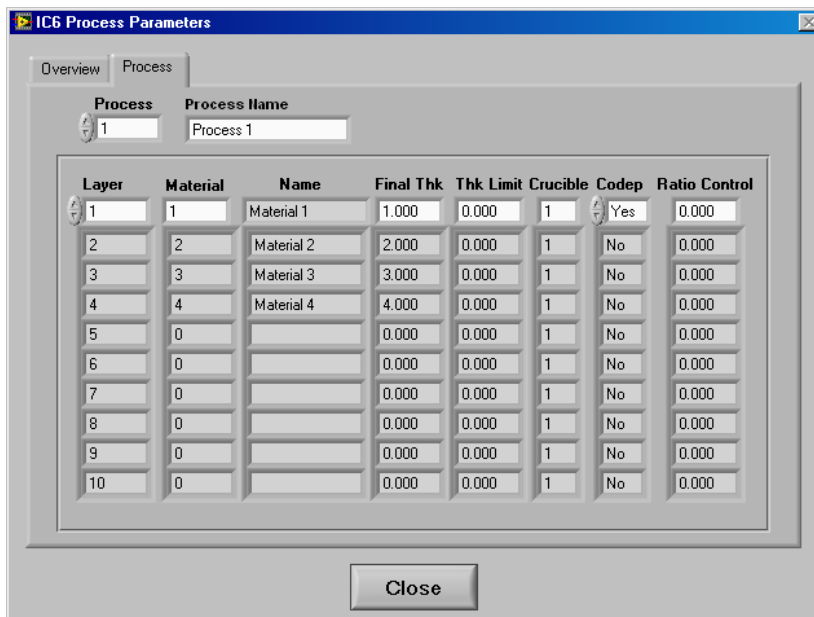
From the **IC6 Configuration Editor** window, click the **Process** button to display the **IC6 Process Parameters** window.

Overview Tab



This is an overview of all the Processes defined. The materials are listed in the sequence they will be active, separated by commas designating layers. A plus sign indicates the materials are set for codeposition. If the materials have been named, those names are used in the list.

Process Tab



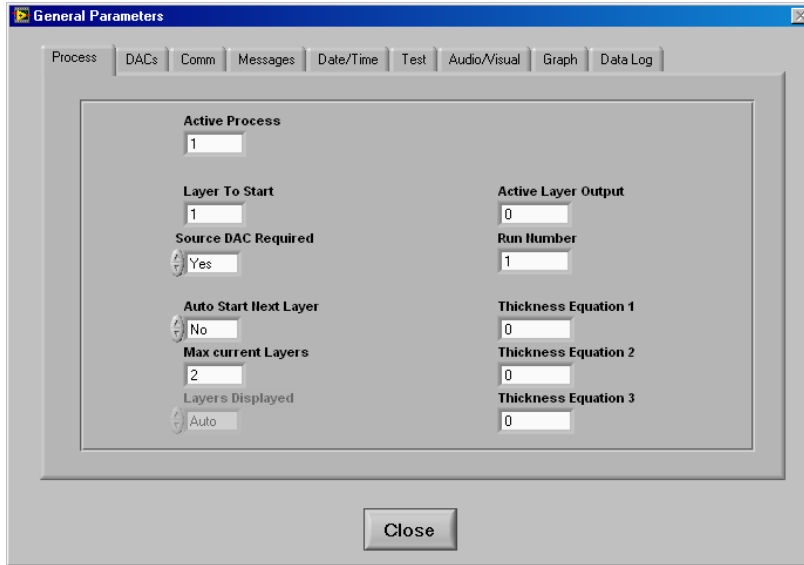
Enter the Process number or use the spin box to select the process to be displayed or edited. Enter the Layer number or use the spin box to select the layer to be edited. Enter the material number for the material to be active in the selected layer. The Final Thickness, Thick Limit, Crucible, Codeposition and Ratio Control parameters can be edited for that layer. Ten layers are displayed at a time. Dimmed parameters are unavailable to be edited. Parameters are unavailable based on parameter selections made. Values entered that are above or below the acceptable range are corrected to the maximum or minimum values. If values are entered that may cause an error/conflict in the IC6 configuration, an error message will appear. Acceptable values need to be entered before closing the window.

Layers must be input sequentially without blank layers.

General

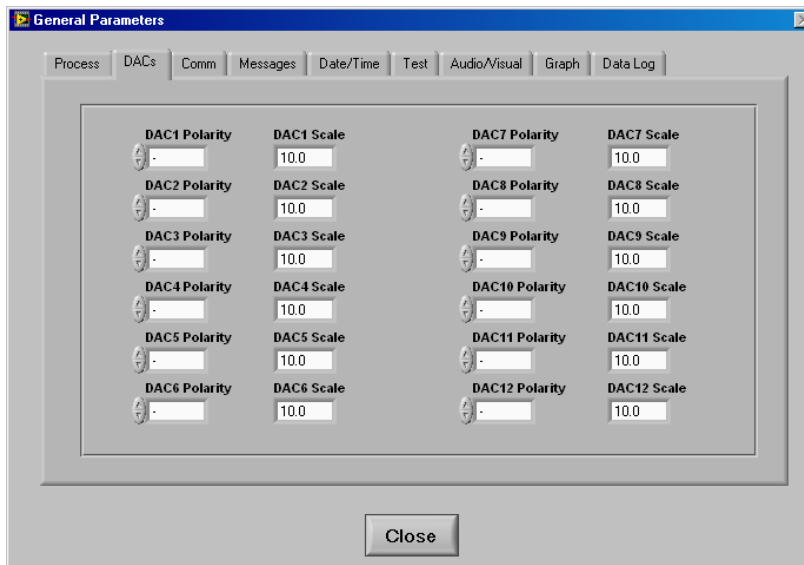
From the **IC6 Configuration Editor** window, click the **General** button to open the **General Parameters** window.

Process Tab



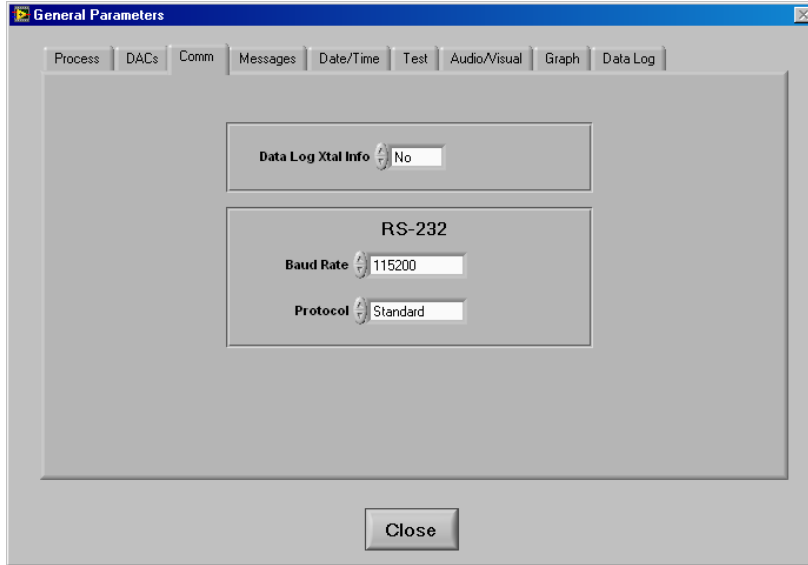
The **Process** tab is used to edit the process type parameters. Dimmed parameters are unavailable to be edited. Parameters are unavailable based on parameter selections made. Values entered that are above or below the acceptable range are corrected to the maximum or minimum values. If values are entered that may cause an error/conflict in the IC6 configuration, an error message will appear. Acceptable values need to be entered before closing the window.

DACs Tab



Select the **DACs** tab to edit the DAC settings. The user can select the polarity and max voltage for each DAC. Values entered that are above or below the acceptable range are corrected to the maximum or minimum values.

Comm Tab



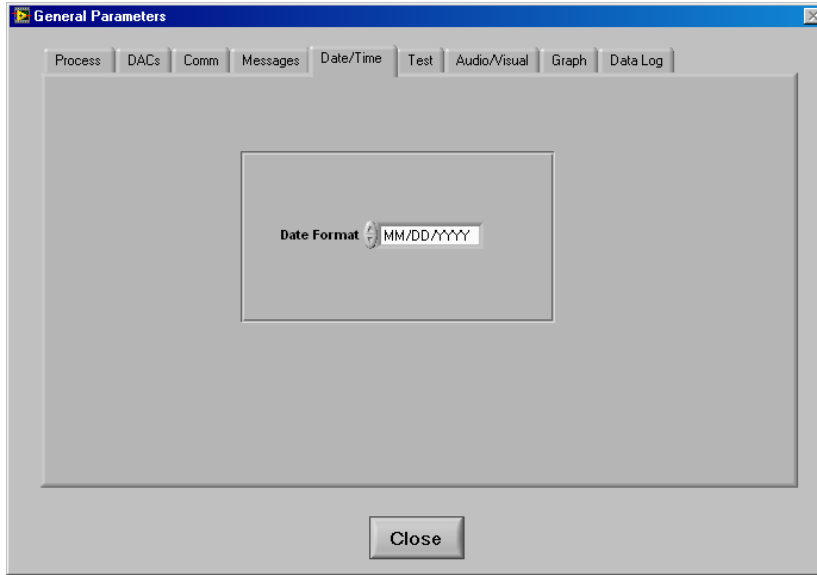
Select the **Comm** tab to edit the communications parameters. In the **RS-232** pane, select the Protocol and baud rate using the spin boxes. Use the spin box in the **Data Log Xtal Info** pane to select if the data log will include crystal history. Refer to Chapter 3 in the IC6 Operating Manual for an explanation of crystal history data.

Messages Tab



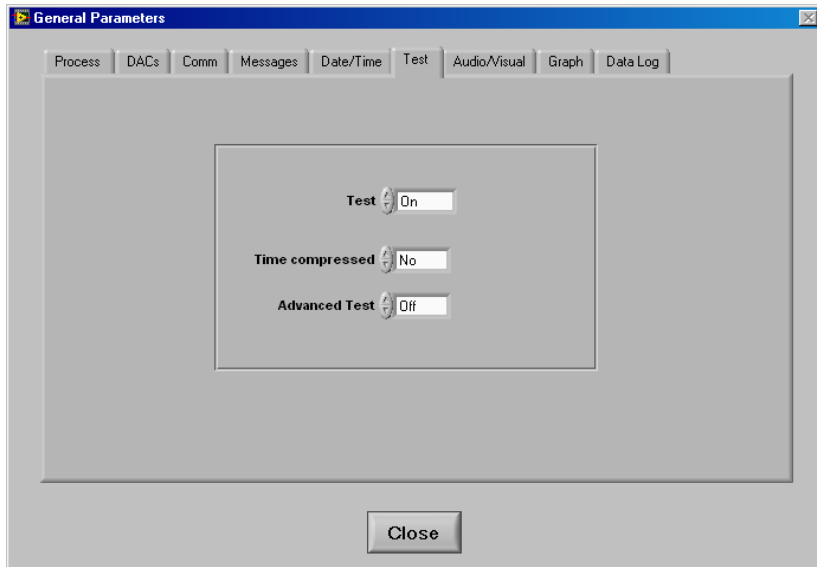
Select the **Message** tab to edit the user messages.

Date/Time Tab



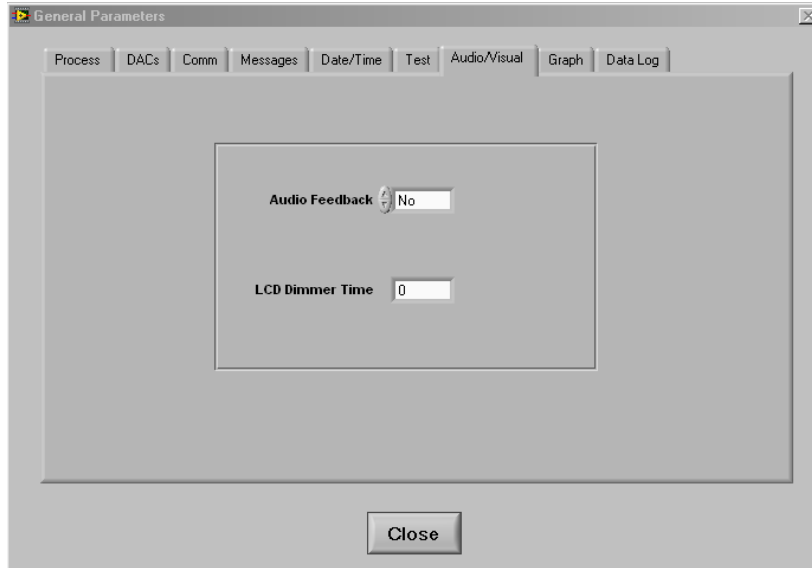
Select the **Date/Time** tab and use the spin box to select the date format.

Test Tab



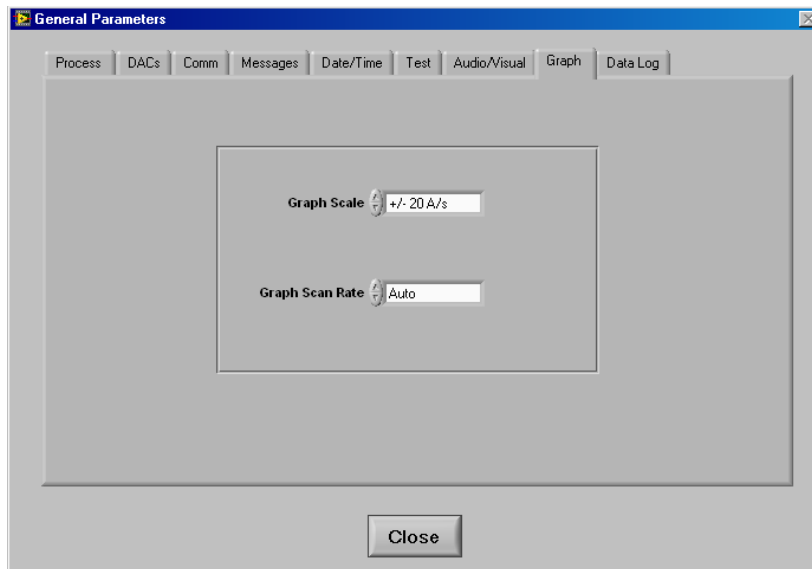
Select the **Test** tab to edit the test parameters. Dimmed parameters are unavailable to be edited. Parameters are unavailable based on parameter selections made.

Audio/Visual Tab



Select the **Audio/Visual** tab to edit the keyboard audio feedback and LCD dimmer timer on IC6.

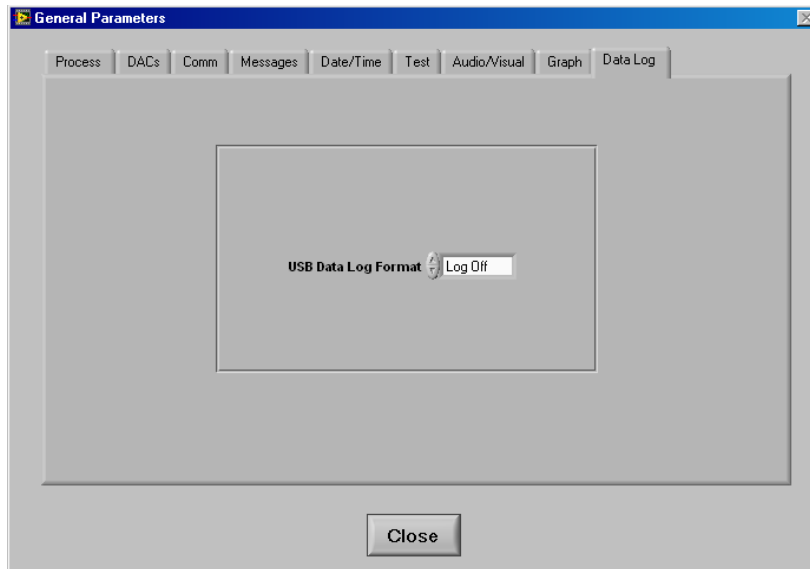
Graph Tab



Select the **Graph** tab to edit the graph settings on the IC6 Operate screen.

Data Log Tab

IC6 Configuration Editor Manual

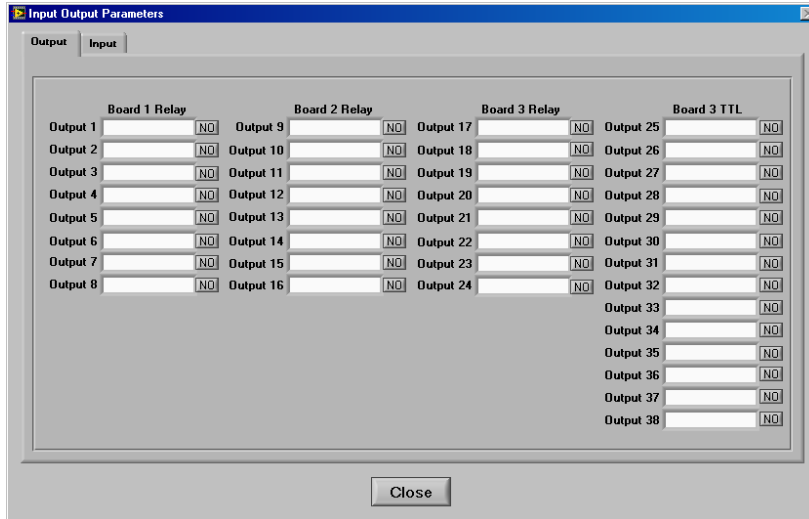


Select the **Data Log** tab to select the USB data log format.

Digital I/O

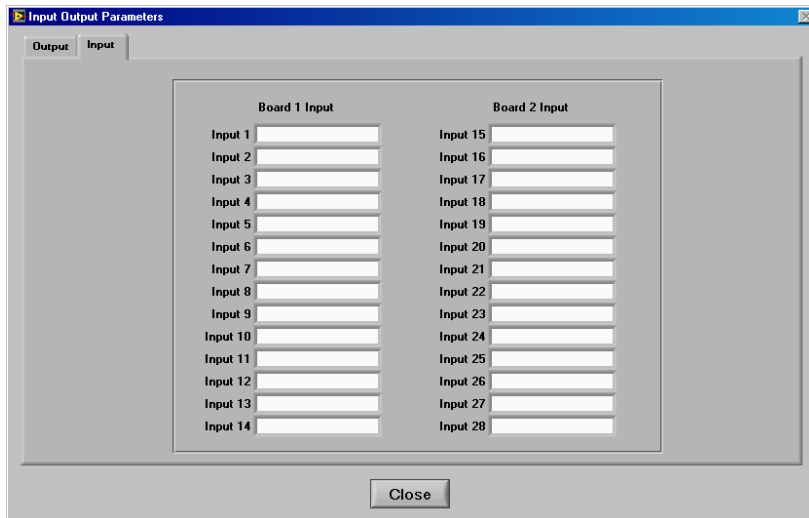
From the **IC6 Configuration Editor** window, click the **Digital I/O** button to display the **Input Output Parameters** window.

Output Tab



Displays the outputs for internal conditions programmed in the IC6 configuration.

Input Tab

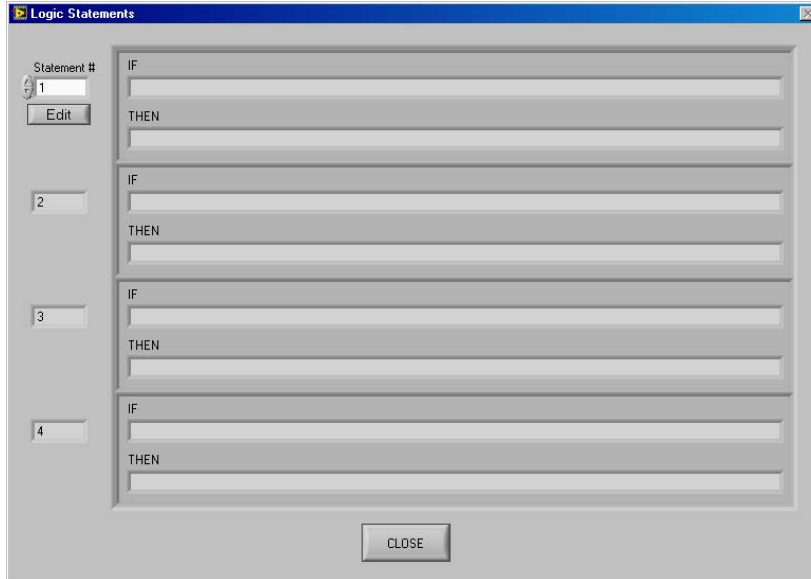


Displays the inputs for internal conditions programmed in the IC6 configuration.

Outputs/Inputs that are dimmed have been programmed as hardware in the Source, Sensor and General parameters of the IC6 configuration. Those names are unavailable to be edited. Any other Output and Input names can be edited. The output at rest state, normally open or normally closed, is edited on the Output window.

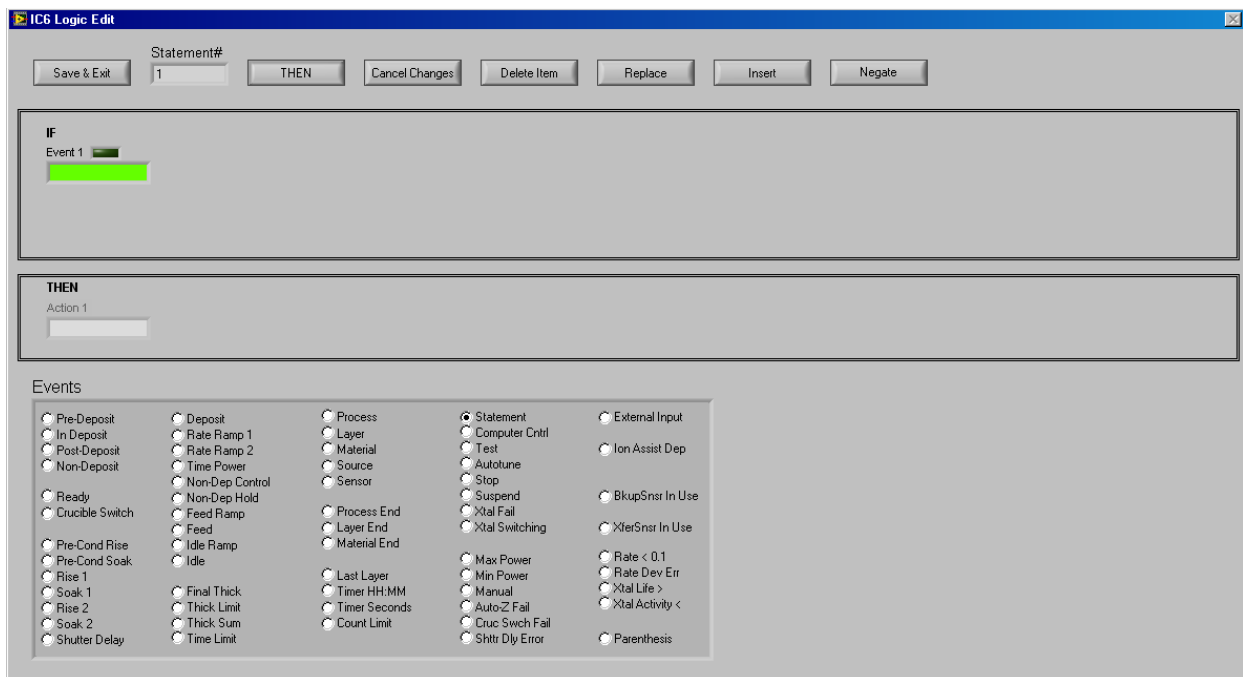
Logic

From the **IC6 Configuration Editor** window, click the **Logic** button to display the **Logic Statements** window.



This window displays four logic statements. Enter a new statement number or use the spin box to select a statement number to display that statement and the next three statements. To edit a statement, select the statement number and click the Edit button.

IC6 Logic Edit



The **IF/THEN** button is used to toggle between the portions of the statement. The Event list is displayed for the IF statement. The Actions list is displayed for the THEN statement. The active portion will have one event/action highlighted.

If more than one event/action is shown, a mouse can be used to select any event/action. The selected event/action will be highlighted.

Select from the Events/Actions list the event or action to be placed in the selected event or action text box.

Click **Replace** to overwrite the current selection. Click **Insert** to insert the selection and move the other events or actions.

If the selected event/action requires a numeric value to be entered, a spin box is displayed to select a numeric, or one can be entered. Default values are programmed to display

As events are added, connector boxes appear. Use the spin box to select the desired connectors.

If the event is to be negated, select the event and click the **Negate** button. An indicator will appear above the negated event.

An event/action can be deleted by selecting the event or action and clicking the **Delete** button.

Actions cannot be negated. In the THEN portion of the statement, all connectors are AND.

To add or delete parenthesis select Parenthesis in the event list. Pressing **Insert** or **Replace** will add a parenthesis before or after the highlighted event in the statement. If a parenthesis is already there, **Insert** and **Replace** will act as a toggle, removing the parenthesis.

Click **Save and Exit** to save the statement. A check for errors is performed. If there is an error in the statement, an error message appears. This error will need to be corrected before the statement is saved. The **IC6 Logic Edit** window will close after the statement is saved.