



# 3sigma LabVIEW Driver User Guide

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## 1.1 Computer Systems Supported

The 3sigma LabVIEW driver works on Win98, WinXP, WinME, WinNT, and Win2000 operating systems. In order to operate properly with the driver, the computer must have an available RS-232 port. A screen resolution of 1024 by 768 pixels or greater must be used to allow a VI to fit within the screen. Version 6.02 of LabVIEW or later should be installed.

## 1.2 Introduction

The 3sigma LabVIEW driver has been designed to allow the construction of a wide variety of custom applications in a small amount of time. The library only contains VIs useful for making the 3sigma function via remote—it does not contain plotting, charting, or file routines which are already available in LabVIEW.

The VIs from the library can be strung in sequence to form an application. Normally, the 3sigma Initialize VI is the first VI in the sequence. This VI configures the serial port for the host to communicate with the instrument. The 3sigma Close VI should normally be the last VI in the sequence. This VI ends the communication session with the 3sigma. A VI in driver can be examined more thoroughly by double-clicking it.

## 1.3 3sigma LabVIEW Driver VIs

This section describes each VI that is included in the 3sigma LabVIEW Driver. Each VI listed contains the following information:

- Name—The name of the VI.
- Purpose—Describes the intended use of the VI.
- Icon—The icon image used by the VI.
- Front Panel—The front panel display used by the VI.
- Inputs—Connector pane inputs of the VI. Each input has a name and a data type. If no input is defined for the VI, the text “None” will be listed. The default value and allowable range is also shown for each input.
- Outputs—Connector pane outputs of the VI. If no output is defined for the VI, the text “None” will be listed.

The data type for each input and output is displayed within the characters ‘<’ and ‘>’. The following data types may be used for the VI inputs and outputs:

- Floating Point—LabVIEW double-precision, floating-point type.
- Visa cluster—LabVIEW visa-cluster type.
- Error cluster—LabVIEW error-cluster type.
- Boolean—LabVIEW boolean type.
- Unsigned integer—LabVIEW 32-bit, unsigned-integer type.
- Text ring—LabVIEW text-ring type.
- Cluster—LabVIEW cluster type.
- Array of cluster—A LabVIEW array containing LabVIEW clusters as the elements.

The following syntax will be used for the description of inputs and outputs:

- Strings appearing in a text ring are enclosed within the characters ‘{’ and ‘}’. A comma delimiter separates the strings. Each string element is enclosed within quotes.
- Data items appearing in a cluster type are enclosed within the characters ‘[’ and ‘]’.
- Two side-by-side quote characters denote empty strings.

### 1.3.1 Tree VI

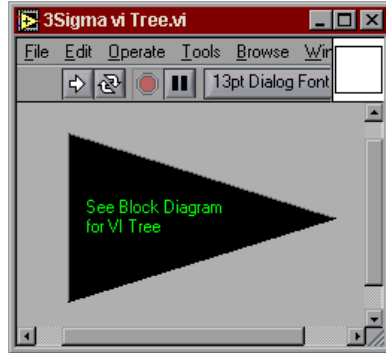
The Tree VI is a non-executable VI, designed to show the functional structure of the 3sigma driver. It contains all VIs appearing in the driver.

#### 1.3.1.1 3sigma VI Tree VI

Name: 3sigma VI Tree.vi  
 Purpose: Shows the functional structure of the 3sigma driver.  
 Icon:



Front Panel:



Inputs: None  
 Outputs: None

### 1.3.2 Application VIs

These high-level VIs perform the most commonly-used instrument configurations and measurements by calling the appropriate component-level VIs. They demonstrate high-level test and measurement functionality by configuring the 3sigma for a common mode of operation, triggering, and taking measurements.

#### 1.3.2.1 3sigma Getting Started VI –

Name: 3sigma Getting Started.vi

Purpose: This VI includes the 3sigma Initialize.vi, 3sigma Application.vi, and 3sigma Close.vi.

Icon:



Front Panel:



Inputs:

- Comm Port <text ring> {"COM1", "COM2", "COM3", "COM4"}  
Default: COM1
- Readings to Acquire <unsigned integer>  
Default: 2
- Comm Port Parameters <cluster> [Baud Rate <text ring> {"9600", "38400", "57600", "115200"}, Stop Bits <text ring> {"1", "2"}, Parity <text ring> {"NONE", "EVEN", "ODD"}]  
Default: 9600, 1, NONE
- Auto Range Enabled <boolean>  
Default: False
- Measurement Range (J, W, J/cm<sup>2</sup>, W/cm<sup>2</sup>) <floating point>  
Default: 0.0
- Area Correction Enabled <boolean>  
Default: False
- Area (cm<sup>2</sup>) <floating point>  
Default: 1.0  
Range: 1.0E-3 .. 9.999E+2
- Attenuation Enabled <boolean>  
Default: False
- Attenuation Factor <floating point>  
Default: 1.0  
Range: 1.0E0 .. 9.999E+5
- Wavelength Correction Enabled <boolean>  
Default: False
- Correction Wavelength (nm) <unsigned integer>  
Default: 0
- Trigger Level (%) <unsigned integer>  
Default: 2

Outputs:

- Error out <error cluster>

### 1.3.2.2 3sigma Example VI –

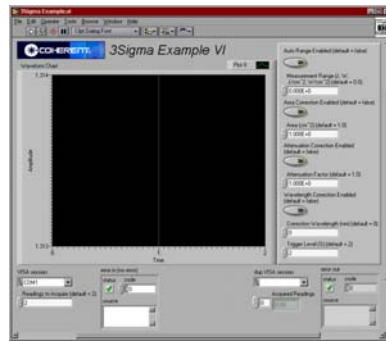
Name: 3sigma Example.vi

Purpose: Adds the main functionality to the 3sigma Getting Started VI. Acquires measurements from the 3sigma and displays the data on a stripchart.

Icon:



Front Panel:



Inputs:

VISA session <visa cluster>

Default: COM1

Readings to Acquire (default = 2) <unsigned integer>

Default: 2

Auto Range Enabled (default = false) <boolean>

Default: False

Measurement Range (J, W, J/cm<sup>2</sup>, W/cm<sup>2</sup>) (default = 0.0)<floating point>

Default: 0.0

Area Correction Enabled (default = false) <boolean>

Default: False

Area (cm<sup>2</sup>) (default = 1.0) <floating point>

Default: 1.0

Range: 1.0E-3 .. 9.999E+2

Attenuation Correction Enabled (default = false) <boolean>

Default: False

Attenuation Factor (default = 1.0) <floating point>

Default: 1.0

Range: 1.0E0 .. 9.999E+5

Wavelength Correction Enabled (default = false) <boolean>

Default: False

Correction Wavelength (nm) (default = 0) <unsigned integer>

Default: 0

Trigger Level (%) (default = 2) <unsigned integer>

Default: 2

Error in (no error) <error cluster>

Default: False, 0, ""

Outputs:

dup VISA session <visa cluster>

Error out <error cluster>

### 1.3.3 Component VIs

These VIs are organized into a modular assortment containing all of the instrument configuration and measurement capabilities. They fit into six categories: initialize, configuration, action/status, data, utility, and close.

#### 1.3.3.1 Initialize VI –

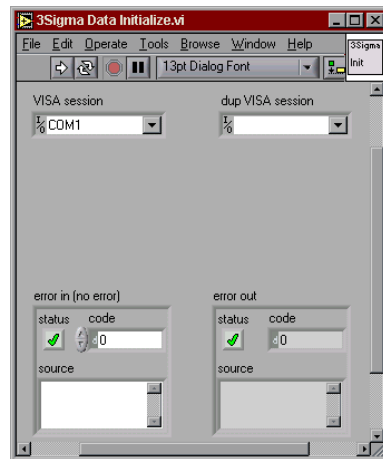
All LabVIEW instrument drivers should have an Initialize VI. It is the first instrument driver VI calls and it establishes communication with the instrument.

##### 1.3.3.1.1 3sigma Initialize VI

Name: 3sigma Initialize.vi  
 Purpose: Establishes communication with the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Comm Port Parameters (default = 9600, 1 NONE) <cluster> [Baud Rate (default = 9600) <text ring> {"9600", "38400", "57600", "115200"}, Stop Bits (default = 1) <text ring> {"1", "2"}, Parity (default = NONE) <text ring> {"NONE", "EVEN", "ODD"}]  
 Default: 9600, 1, NONE  
 Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.2 Configuration VIs–

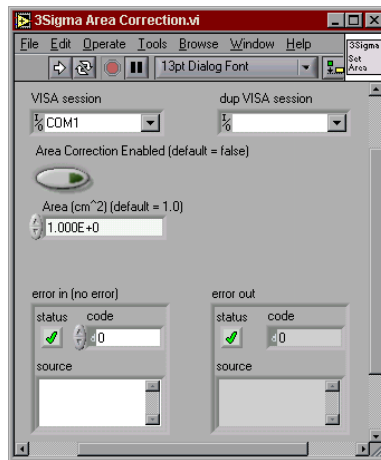
Configurations VIs are a collection of software routines that configure the instrument to perform the desired operation. Depending on the complexity of the instrument, there is usually a number of Configuration VIs. After you call these VIs, the instrument is ready to take measurements or stimulate a system.

#### 1.3.3.2.1 3sigma Area Correction VI

Name: 3sigma Area Correction.vi  
 Purpose: Sets the area correction factor of the 3sigma.  
 Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
 Default: COM1
- Area Correction Enabled (default = false) <boolean>  
 Default: False
- Area (cm^2) (default = 1.0) <floating point>  
 Default: 1.0  
 Range: 1.0E-3 .. 9.999E+2
- Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs:

- dup VISA session <visa cluster>
- Error out <error cluster>

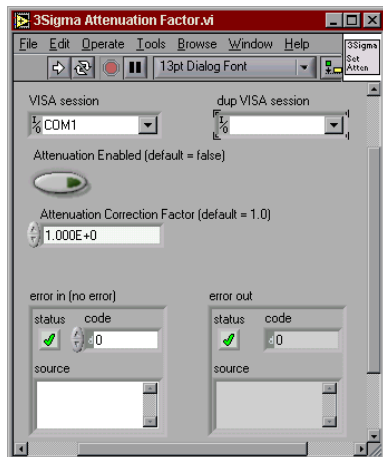


### 1.3.3.2.2 3sigma Attenuation VI

Name: 3sigma Attenuation Factor.vi  
 Purpose: Sets the attenuation factor of the 3sigma.  
 Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
 Default: COM1
- Attenuation Enabled (default = false) <boolean>  
 Default: False
- Attenuation Correction Factor (default = 1.0) <floating point>  
 Default: 1.0  
 Range: 1.0E0 .. 9.999E+5
- Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs:

- dup VISA session <visa cluster>
- Error out <error cluster>

### 1.3.3.2.3 Display Data Averaging VIs

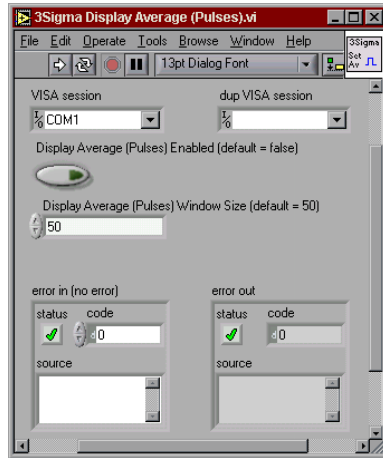
The Display Data Averaging VIs are used to configure the display data averaging of the 3sigma.

#### 1.3.3.2.3.1 3sigma Display Average (Pulses) VI

Name: 3sigma Display Average (Pulses).vi  
 Purpose: Sets the display averaging (pulses) window size of the 3sigma.  
 Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
 Default: COM1
- Display Average (Pulses) Enabled (default = false) <boolean>  
 Default: False
- Display Average (Pulses) Window Size (default = 50) <unsigned integer>  
 Default: 50  
 Range: 2..999
- Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs:

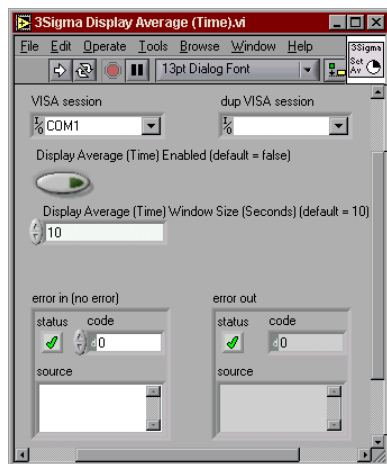
- dup VISA session <visa cluster>
- Error out <error cluster>

### 1.3.3.2.3.2 3sigma Display Average (Time) VI

Name: 3sigma Display Average (Time).vi  
 Purpose: Sets the display averaging (time) window size of the 3sigma.  
 Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
 Default: COM1
- Display Average (Time) Enabled (default = false) <boolean>  
 Default: False
- Display Average (Time) Window Size (Seconds) (default = 10)  
 <unsigned integer>  
 Default: 10  
 Range: 2..999
- Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs:

- dup VISA session <visa cluster>
- Error out <error cluster>

### 1.3.3.2.4 Measurement Data Format VI

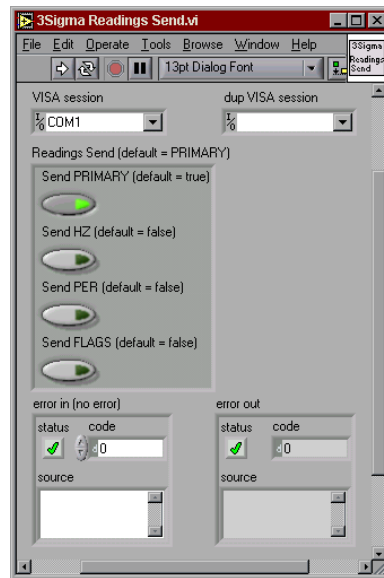
The Measurement Data format VI controls which readings are sent from the 3sigma to the host computer during data acquisition.

#### 1.3.3.2.4.1 3sigma Readings Send VI

Name: 3sigma Readings Send.vi  
 Purpose: Sets the measurement data that is read from the 3sigma.  
 Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
 Default: COM1
- Readings Send (default = PRIMARY) <cluster> {Send PRIMARY (default = true) <boolean>, Send HZ (default = false) <boolean>, Send PER (default = false) <boolean>, Sends FLAGS (default = false) <boolean>}  
 Default: {True, False, False, False}
- Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs:

- dup VISA session <visa cluster>
- Error out <error cluster>

### 1.3.3.2.5 Range VIs

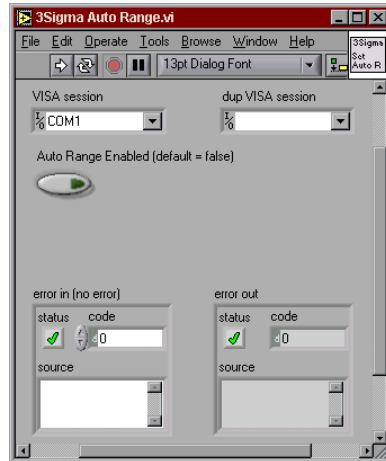
The Range VIs controls 3sigma range settings.

#### 1.3.3.2.5.1 3sigma Auto Range VI

Name: 3sigma Auto Range.vi  
 Purpose: Sets the auto range state of the 3sigma.  
 Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
 Default: COM1
- Auto Range Enabled (default = false) <boolean>  
 Default: False
- Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs:

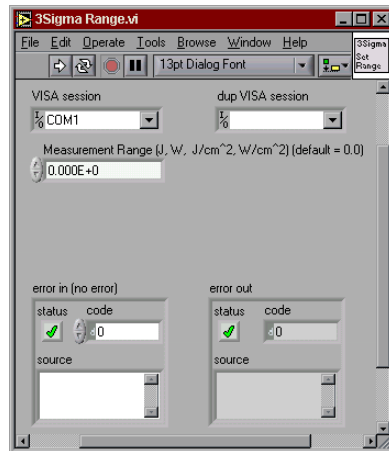
- dup VISA session <visa cluster>
- Error out <error cluster>

### 1.3.3.2.5.2 3sigma Range VI

Name: 3sigma Range.vi  
 Purpose: Sets the range of the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Measurement Range (J, W, J/cm<sup>2</sup>, W/cm<sup>2</sup>) (default = 0.0)  
 Default: 0.0  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

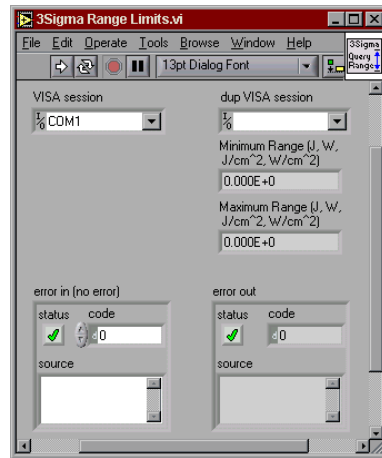
Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.2.5.3 3sigma Range Limits VI

Name: 3sigma Range Limits.vi  
 Purpose: Reads the minimum and maximum range settings that can be used with the currently-connected probe.

Icon: 

Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs: dup VISA session <visa cluster>  
 Minimum Range <floating point>  
 Maximum Range <floating point>  
 Error out <error cluster>

### 1.3.3.2.6 Statistical Batch VIs

The Statistical Batch VIs controls 3sigma statistical batch settings.

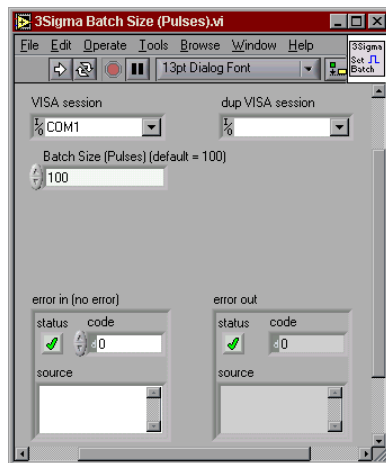
#### 1.3.3.2.6.1 3sigma Batch Size (Pulses) VI

Name: 3sigma Batch Size (Pulse).vi  
Purpose: Sets the batch size (pulses) of the 3sigma.

Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
Default: COM1
- Batch Size (Pulses) (default = 100) <unsigned integer>  
Default: 100  
Range: 2..9999
- Error in (no error) <error cluster>  
Default: False, 0, ""

Outputs:

- dup VISA session <visa cluster>
- Error out <error cluster>

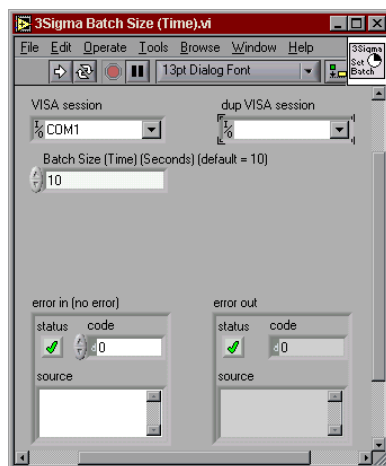


### 1.3.3.2.6.2 3sigma Batch Size (Time) VI

Name: 3sigma Batch Size (Time).vi  
 Purpose: Sets the batch size (time) of the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Batch Size (Time) (Seconds) (default = 10) <unsigned integer>  
 Default: 100  
 Range: 2..9999  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

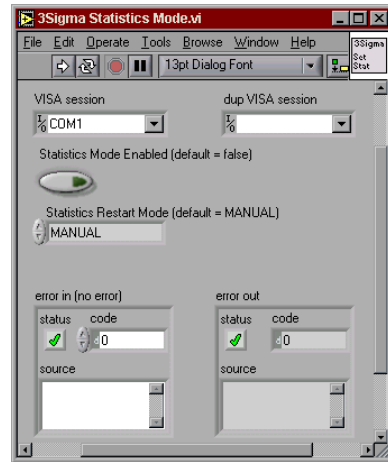
Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.2.6.3 3sigma Statistics Mode VI

Name: 3sigma Statistics Mode.vi  
 Purpose: Sets the statistics mode of the 3sigma.  
 Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
 Default: COM1
- Statistics Mode Enabled (default = false) <boolean>  
 Default: False
- Statistics Restart Mode (default = MANUAL) <text ring> {"MANUAL",  
 "AUTOMATIC"}  
 Default: MANUAL
- Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs:

- dup VISA session <visa cluster>
- Error out <error cluster>

### 1.3.3.2.7 Trigger VI

The Trigger VI controls the 3sigma trigger level.

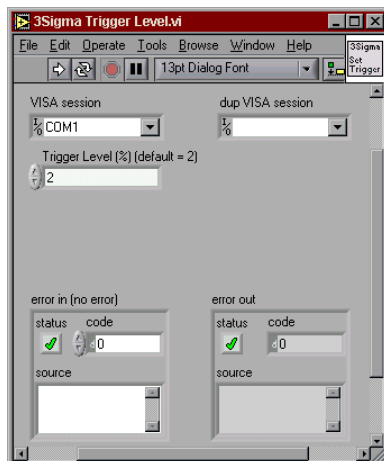
#### 1.3.3.2.7.1 3sigma Trigger VI

Name: 3sigma Trigger Level.vi  
Purpose: Sets the trigger level of the 3sigma.

Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
Default: COM1
- Trigger Level (%) (default = 2) <unsigned integer>  
Default: 2  
Range: 2..20
- Error in (no error) <error cluster>  
Default: False, 0, ""

Outputs:

- dup VISA session <visa cluster>
- Error out <error cluster>

### 1.3.3.2.8 Miscellaneous VIs

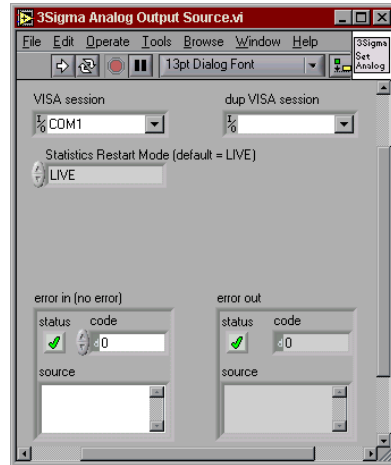
Miscellaneous VIs are used to control miscellaneous settings of the 3sigma.

#### 1.3.3.2.8.1 3sigma Analog Output Source VI

Name: 3sigma Analog Output Source.vi  
 Purpose: Sets the analog output source of the 3sigma.  
 Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
 Default: COM1
- Statistics Restart Mode (default = LIVE) <text ring> {"LIVE", "SAMPLED"}  
 Default: LIVE
- Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs:

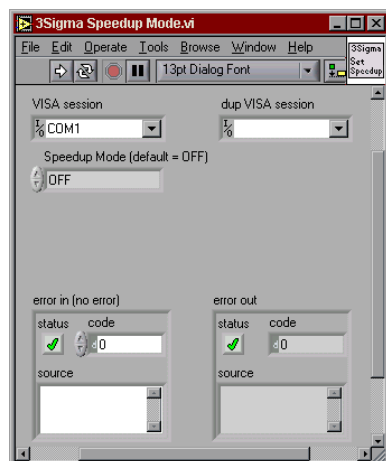
- dup VISA session <visa cluster>
- Error out <error cluster>

### 1.3.3.2.8.2 3sigma Speedup Mode VI

Name: 3sigma Speedup Mode.vi  
 Purpose: Set the speedup mode of the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Speedup Mode (default = OFF) <text ring> {"OFF", "FULL", "PARTIAL"}  
 Default: OFF  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.2.9 Wavelength Correction VIs

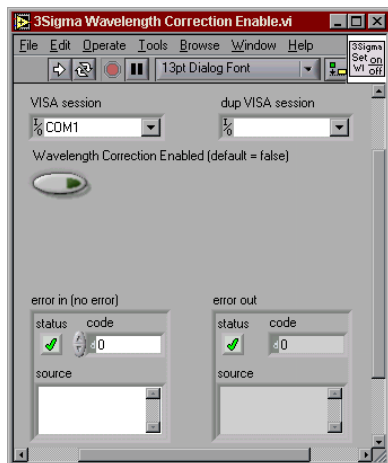
The Wavelength Correction VIs control the 3sigma wavelength correction settings.

#### 1.3.3.2.9.1 3sigma Wavelength Correction Enable VI

Name: 3sigma Wavelength Correction Enable.vi  
 Purpose: Enables or disables the state of the 3sigma wavelength correction.  
 Icon:



Front Panel:



Inputs:

- VISA session <visa cluster>  
 Default: COM1
- Wavelength Correction Enabled (default = false) <boolean>  
 Default: False
- Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs:

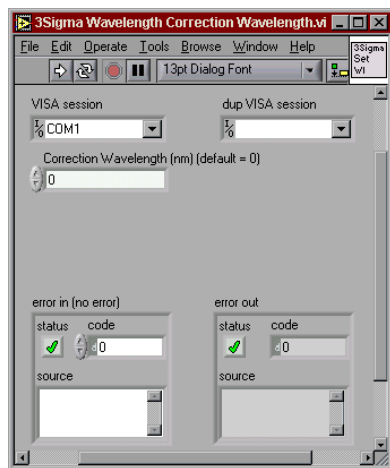
- dup VISA session <visa cluster>
- Error out <error cluster>

### 1.3.3.2.9.2 3sigma Wavelength Correction Wavelength VI

Name: 3sigma Wavelength Correction Wavelength.vi  
 Purpose: Sets the operational wavelength of the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Correction Wavelength (nm) (default = 0) <unsigned integer>  
 Default: 0  
 Range: 0..99999  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

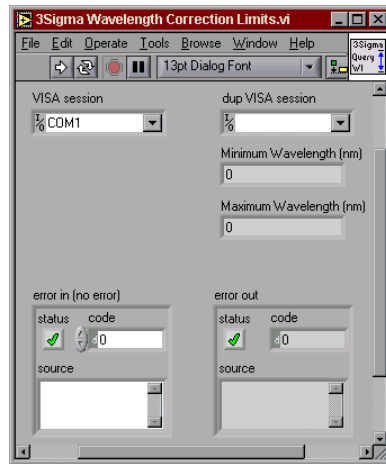
Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.2.9.3 3sigma Wavelength Correction Limits VI

Name: 3sigma Wavelength Correction Limits.vi  
 Purpose: Reads the minimum and maximum wavelength settings that can be used with the currently-connected probe.

Icon: 

Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs: dup VISA session <visa cluster>  
 Minimum Wavelength <unsigned integer>  
 Maximum Wavelength <unsigned integer>  
 Error out <error cluster>



### 1.3.3.3 Action/Status VIs –

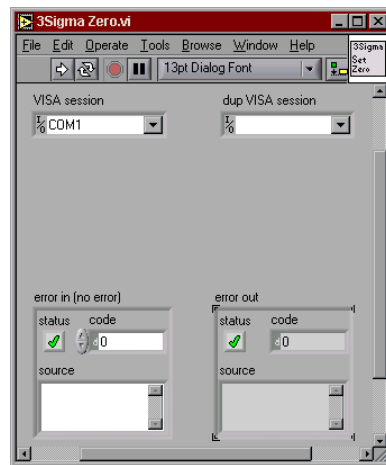
The Action/Status category contains two types of VIs: Action and Status. An *Action* VI causes the instrument to initiate or terminate test and measurement operations. These operations can include arming the triggering system or generating a stimulus. An Action VI is different from a Configuration VI because it does not change the instrument setting; it orders the instrument to carry out an action based on its current configuration. A *Status* VI obtains the current status of the instrument or the status of pending operations.

#### 1.3.3.3.1 3sigma Zero VI

Name: 3sigma Zero.vi  
 Purpose: Zeros the 3sigma.  
 Icon:



Front Panel:



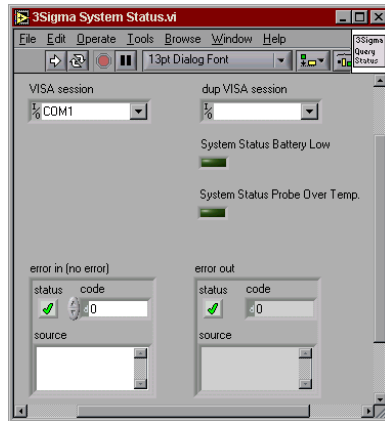
Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""  
 Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.3.2 3sigma System Status

Name: 3sigma System Status.vi  
 Purpose: Determines the system status of the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs: dup VISA session <visa cluster>  
 System Status Battery Low <boolean>  
 System Status Probe Temperature <boolean>  
 Error out <error cluster>

### 1.3.3.4 Data VIs –

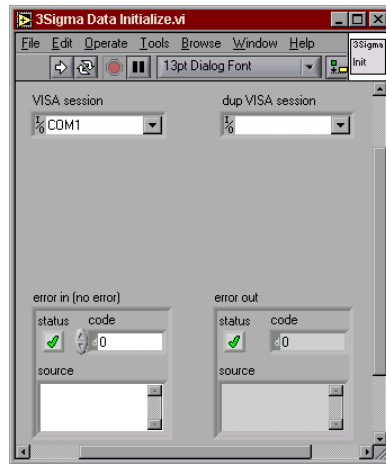
A Data VIs transfers data to or from the instrument. Examples include VIs for reading a measured value or waveform from a measurement instrument, VIs for downloading waveforms or digital patterns to a source instrument, and so on.

#### 1.3.3.4.1 3sigma Data Initialize VI

Name: 3sigma Data Initialize.vi  
 Purpose: Initializes the data transfer state of the 3sigma.  
 Icon:



Front Panel:



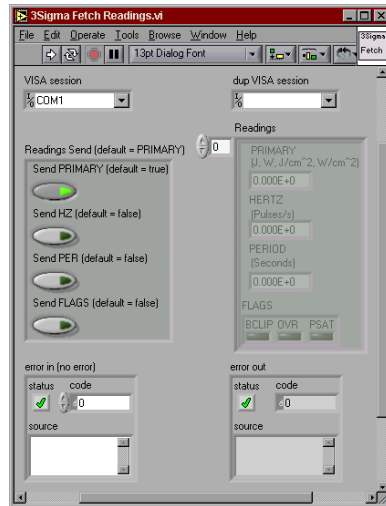
Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""  
 Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.4.2 3sigma Fetch Readings VI

Name: 3sigma Fetch Readings.vi  
 Purpose: Fetches readings from the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Readings Send (default = PRIMARY) <cluster> {Send PRIMARY (default = true) <boolean>, Send HZ (default = false) <boolean>, Send PER (default = false) <boolean>, Sends FLAGS (default = false) <boolean>}  
 Default: {True, False, False, False}  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

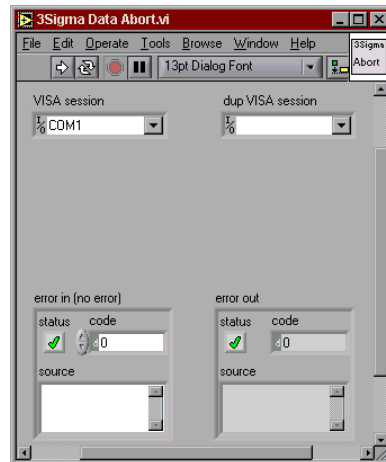
Outputs: dup VISA session <visa cluster>  
 Readings <array of cluster> [PRIMARY <floating point>, HERTZ <floating point>, PERIOD <floating point>, FLAGS <cluster> {BCLIP <boolean>, OVR <boolean>, PSAT <boolean>}]  
 Error out <error cluster>

### 1.3.3.4.3 3sigma Data Abort VI

Name: 3sigma Data Abort.vi  
 Purpose: Aborts the data transfer state of the 3sigma.

Icon: 

Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.5 Utility VIs –

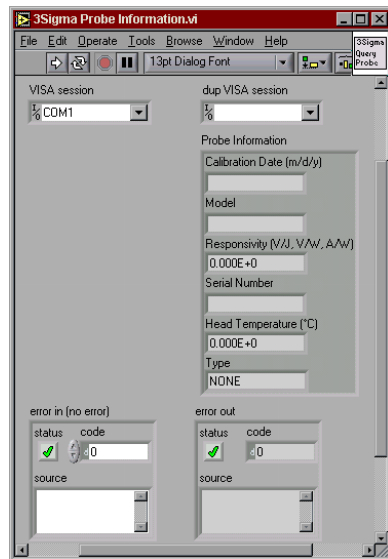
A Utility VI can perform a variety of operations that are auxiliary to the most often-used instrument driver VIs. These VIs include the majority of the template instrument driver VIs, such as reset, self-test, revision, and error query, and can include other custom routines, such as calibration or storing/recalling instrument configurations.

#### 1.3.3.5.1 3sigma Probe Information VI

Name: 3sigma Probe Information.vi  
 Purpose: Determines information about the probe connected to the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

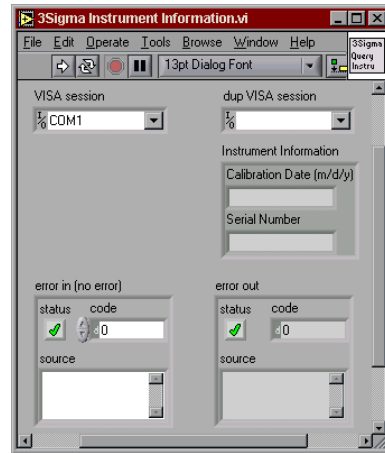
Outputs: dup VISA session <visa cluster>  
 Probe Information <cluster> [Calibration Date <string>, Model <string>, Responsivity <floating point>, Serial Number <string>, Head Temperature <floating point>, Type <text ring> {"NONE", "THERMO", "PYRO", "SILICON"}]  
 Error out <error cluster>

### 1.3.3.5.2 3sigma Instrument Information VI

Name: 3sigma Instrument Information.vi  
 Purpose: Determines information about the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

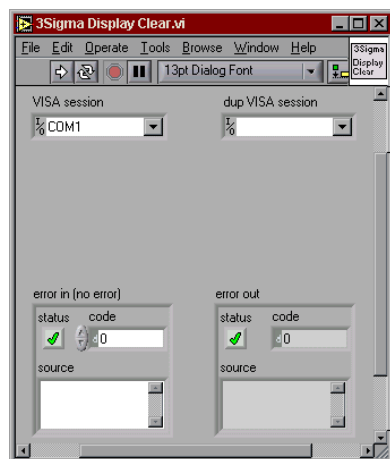
Outputs: dup VISA session <visa cluster>  
 Instrument Information <cluster> {<string> Calibration Date, <string> Serial Number}  
 Error out <error cluster>

### 1.3.3.5.3 3sigma Display Clear VI

Name: 3sigma Display Clear.vi  
 Purpose: Removes the 3sigma from the state of displaying user-defined text.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

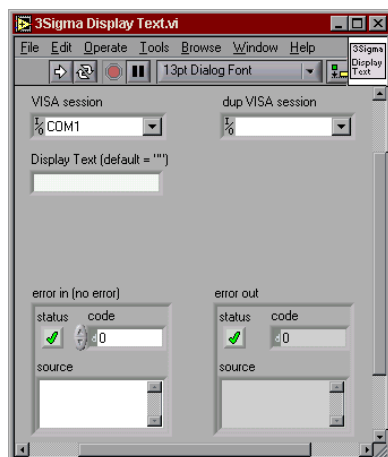


#### 1.3.3.5.4 3sigma Display Text VI

Name: 3sigma Display Text.vi  
 Purpose: Allows user-defined text to be displayed on the 3sigma LCD.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Display Text (default = \") <string>  
 Default: \")  
 Error in (no error) <error cluster>  
 Default: False, 0, \")

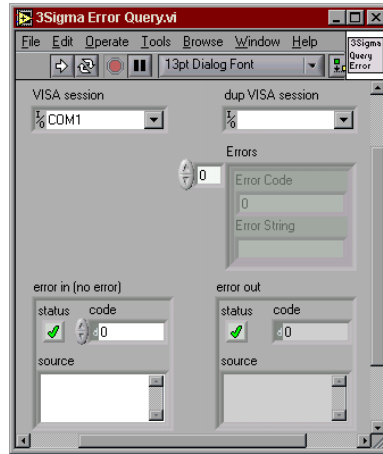
Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.5.5 3sigma Error Query VI

Name: 3sigma Error Query.vi  
 Purpose: Queries the 3sigma for errors.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

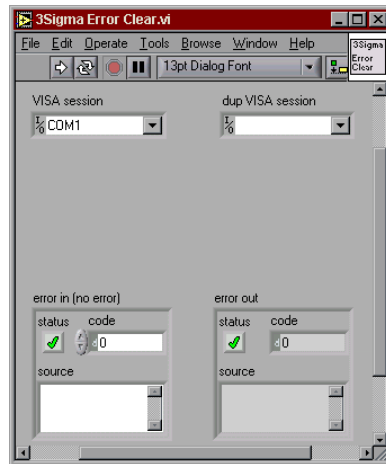
Outputs: dup VISA session <visa cluster>  
 Errors <array cluster> [Error Code <unsigned integer>, Error String <string>]  
 Error out <error cluster>

### 1.3.3.5.6 3sigma Error Clear VI

Name: 3sigma Error Clear.vi  
 Purpose: Clears the 3sigma of any errors in its error buffer.  
 Icon:



Front Panel:



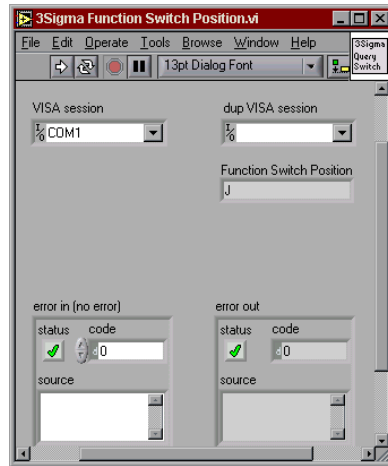
Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""  
 Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.5.7 3sigma Function Switch Position VI

Name: 3sigma Function Switch Position.vi  
 Purpose: Determines the position of the 3sigma function switch.  
 Icon:



Front Panel:




Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

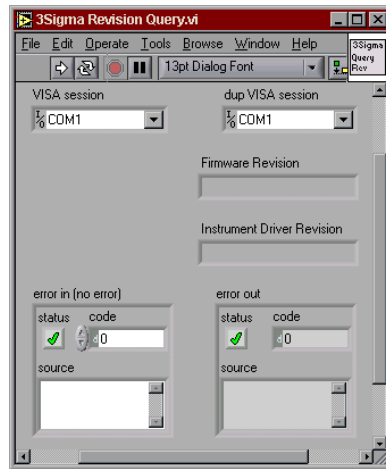
Outputs: dup VISA session <visa cluster>  
 Function Switch Position <text ring> {"J", "W", "TUNE", "SETUP"}  
 Error out <error cluster>

### 1.3.3.5.8 3sigma Revision Query VI

Name: 3sigma Revision Query.vi  
 Purpose: Determines the firmware revision of the 3sigma and the revision of the instrument driver.

Icon: 

Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

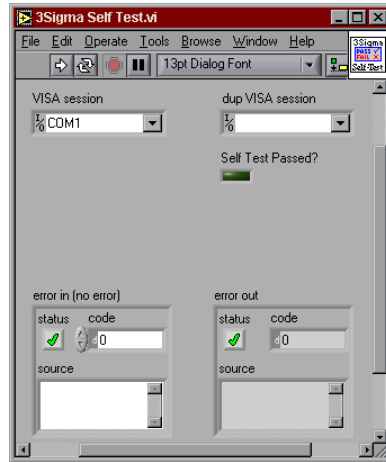
Outputs: dup VISA session <visa cluster>  
 Firmware Revision <string>  
 Instrument Driver Revision <string>  
 Error out <error cluster>

### 1.3.3.5.9 3sigma Self Test VI

Name: 3sigma Self Test.vi  
 Purpose: Performs a self-test of the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

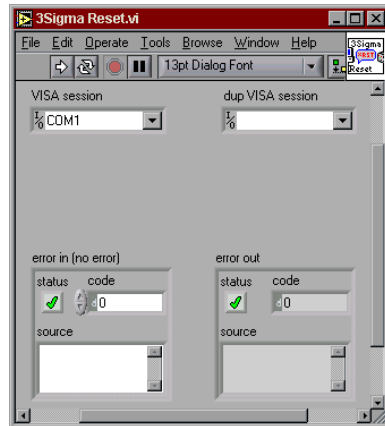
Outputs: dup VISA session <visa cluster>  
 Self Test Passed? <bool>  
 Note: A result of true will always be returned. This output will be  
 hardwired to a true constant.  
 Error out <error cluster>

### 1.3.3.5.10 3sigma Reset VI

Name 3sigma Reset.vi  
 Purpose: Resets the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs: dup VISA session <visa cluster>  
 Error out <error cluster>

### 1.3.3.6 Close VI –

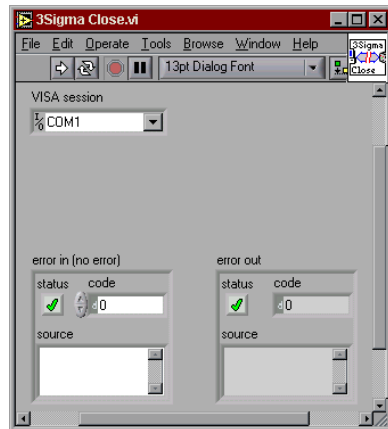
All LabVIEW instrument drivers should include a Close VI. The close VI terminates the software connection to the instrument and de-allocates system resources.

#### 1.3.3.6.1 3sigma Close VI

Name: 3sigma Close.vi  
 Purpose: Closes the communication session with the 3sigma.  
 Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Error in (no error) <error cluster>  
 Default: False, 0, ""  
 Outputs: Error out <error cluster>



### 1.3.4 Support VI

The Support VI reduces frequently-used code into one VI to prevent adding the block diagram of the code to many VIs.

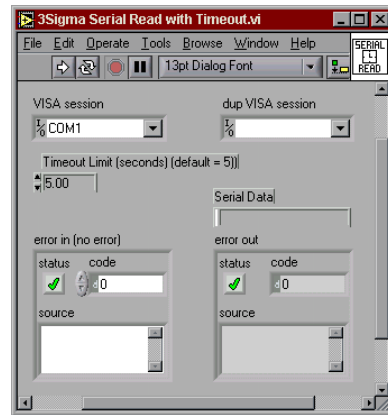
#### 1.3.4.1 3sigma Serial Read with Timeout VI

Name: 3sigma Serial Read with Timeout.vi  
 Purpose: Reads data over the serial port and provides timeout capabilities during the reading.

Icon:



Front Panel:



Inputs: VISA session <visa cluster>  
 Default: COM1  
 Timeout Limit (seconds) (default = 5)) <floating point>  
 Default: 5  
 Error in (no error) <error cluster>  
 Default: False, 0, ""

Outputs: Serial Data <string>  
 Error out <error cluster>