NSC200

NewStep Single Axis Stepper Motor Controller/Driver

LabVIEW Drivers

Newport®
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For Motion, Think Newport™

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Preface

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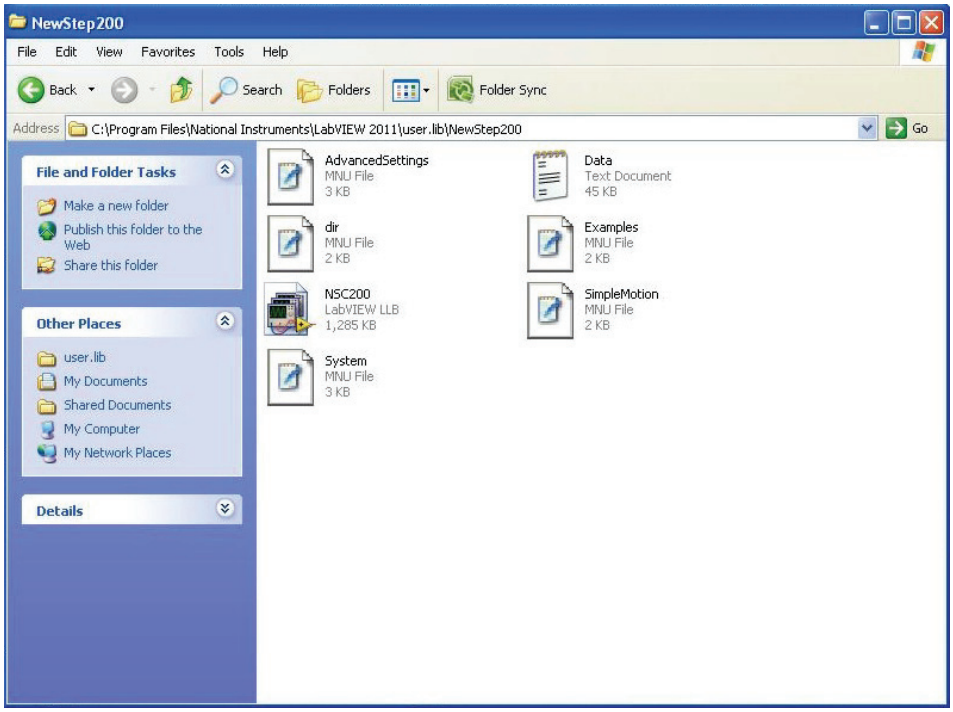
NSC200
LabVIEW Drivers

1.0 NSC200 LabVIEW Drivers

NOTE

You must use at least the 2010 of LabVIEW.

Copy the directory NewStep200 under the directory **user.lib** of LabVIEW 20xx.



In each VI, there is a connection cluster that contains the following components:

error (no error) The **error in** cluster can accept error information wired from VIs previously called. Use this information to decide if any functionality should be bypassed in the event of errors from other VIs.

The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed

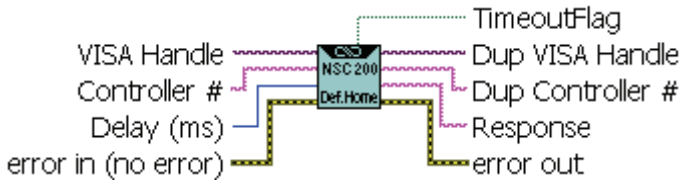
status The **status** Boolean is either TRUE (X) for an error, or FALSE (checkmark) for no error or a warning.
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

code The **code** input identifies the error or warning.
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

source The **source** string describes the origin of the error or warning.
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed

2.0 VI'S Description

2.1 Define Home.vi



VISA Handle

Controller #

Delay (ms)

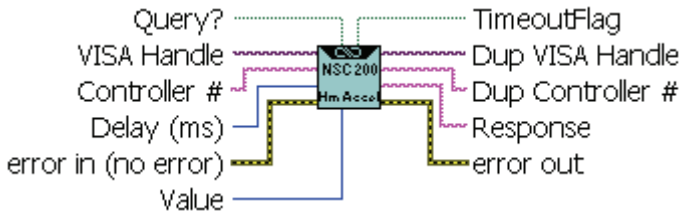
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.2 Homing Acceleration.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

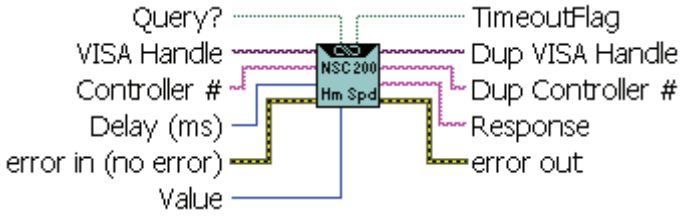
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.3 Homing Speed.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

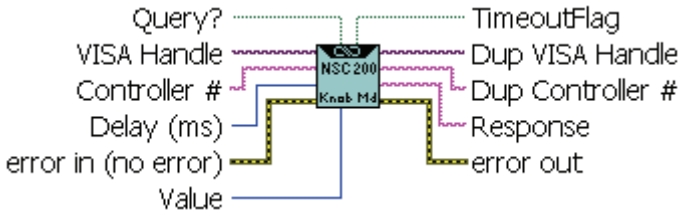
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.4 Knob Mode.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

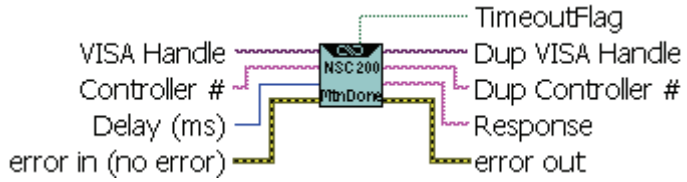
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.5 Motion Done?.vi



VISA Handle

Controller #

Delay (ms)

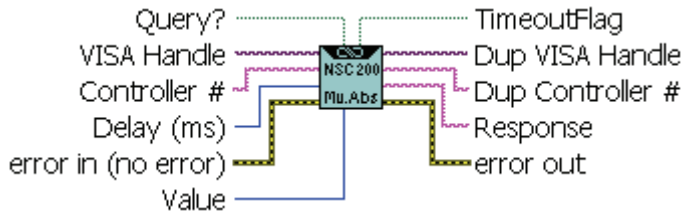
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.6 Motion, Absolute.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

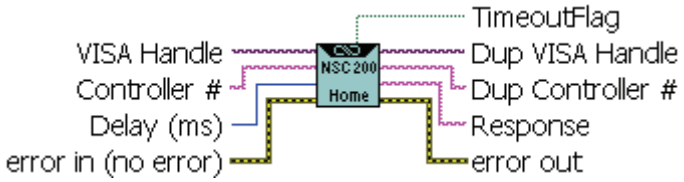
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.7 Motion, Home Search.vi



VISA Handle

Controller #

Delay (ms)

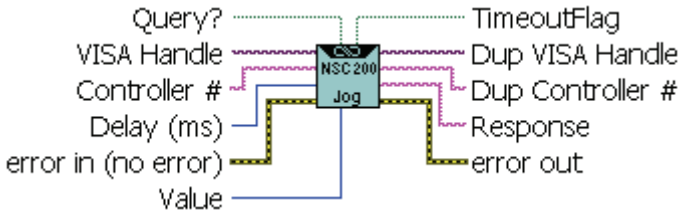
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.8 Motion, Jog.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

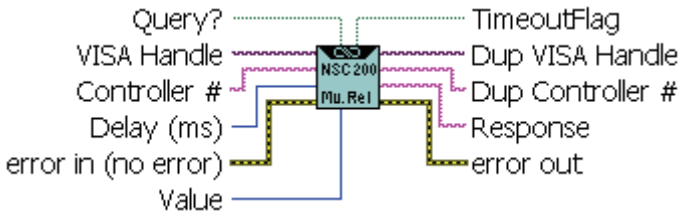
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.9 Motion, Relative.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

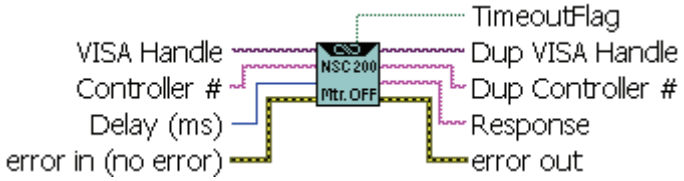
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.10 Motor OFF.vi



VISA Handle

Controller #

Delay (ms)

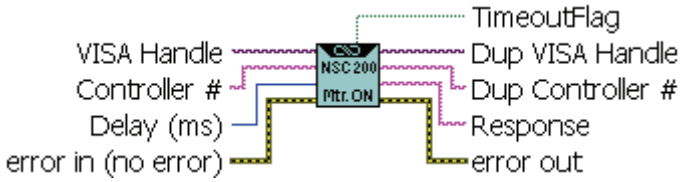
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.11 Motor ON.vi



VISA Handle

Controller #

Delay (ms)

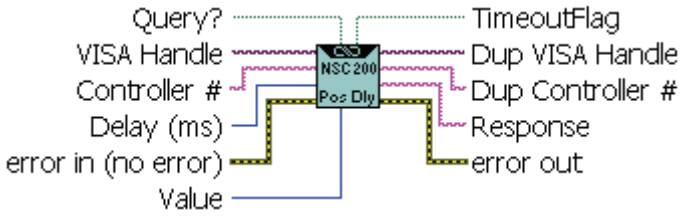
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.12 Position Delay in Knob Control.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

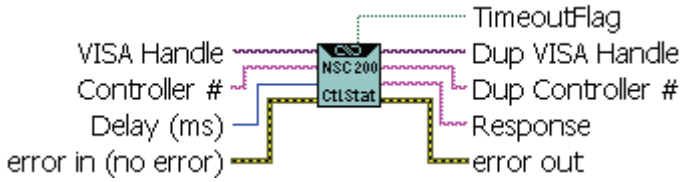
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.13 Read Controller Status.vi



VISA Handle

Controller #

Delay (ms)

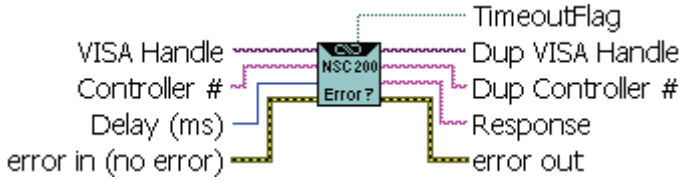
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.14 Read Error.vi



VISA Handle

Controller #

Delay (ms)

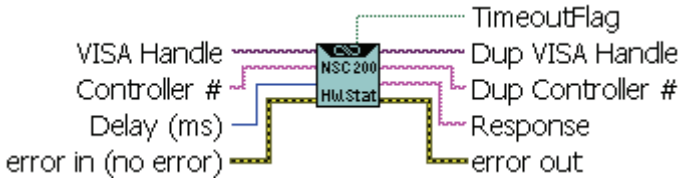
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.15 Read Hardware Status.vi



VISA Handle

Controller #

Delay (ms)

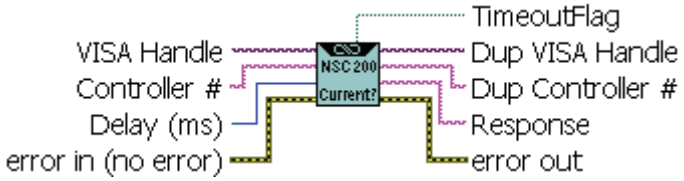
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.16 Read Motor Current.vi



VISA Handle

Controller #

Delay (ms)

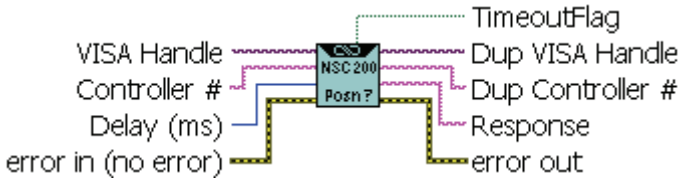
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.17 Read Position.vi



VISA Handle

Controller #

Delay (ms)

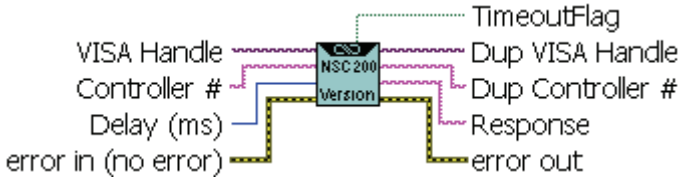
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.18 Read Version.vi



VISA Handle

Controller #

Delay (ms)

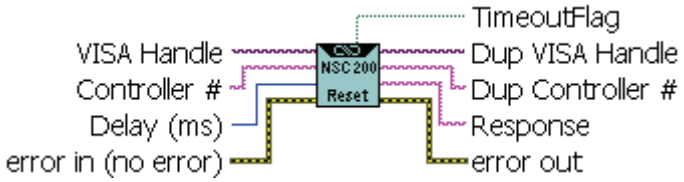
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.19 Reset Controller.vi



VISA Handle

Controller #

Delay (ms)

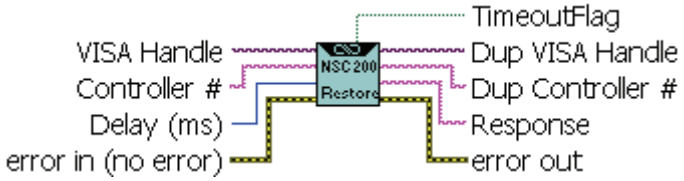
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.20 Restore EEPROM Content to Default.vi



VISA Handle

Controller #

Delay (ms)

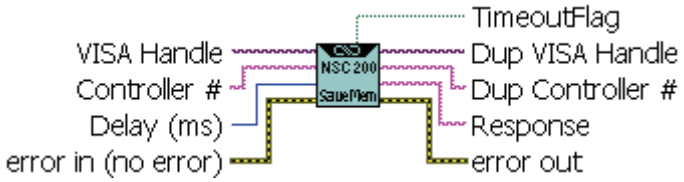
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.21 Save Memory.vi



VISA Handle

Controller #

Delay (ms)

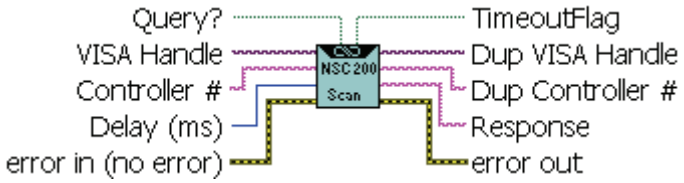
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.22 Scan Switchbox.vi



VISA Handle

Controller #

Delay (ms)

Query?

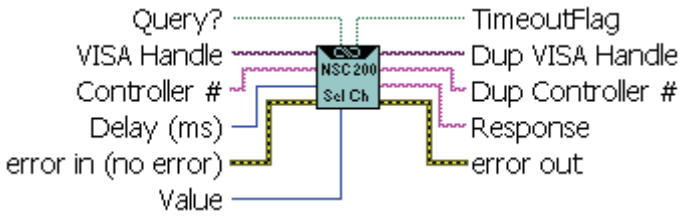
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.23 Select, Switch Box Channel.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

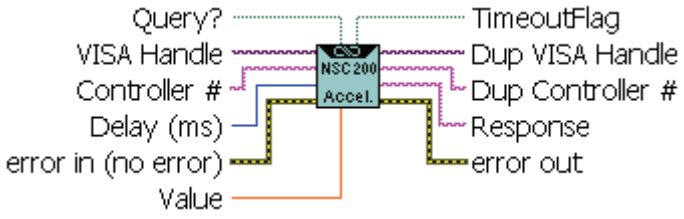
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.24 Set Acceleration.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

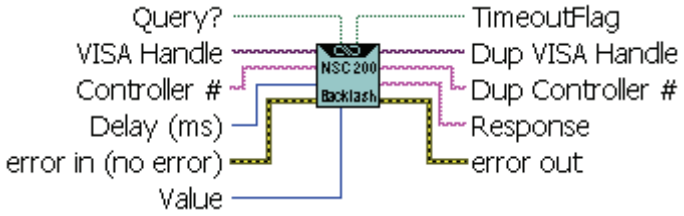
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.25 Set Backlash Compensation.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

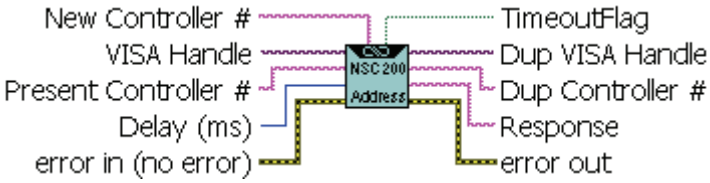
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.26 Set Controller Address.vi



VISA Handle

Present Controller #

Delay (ms)

New Controller #

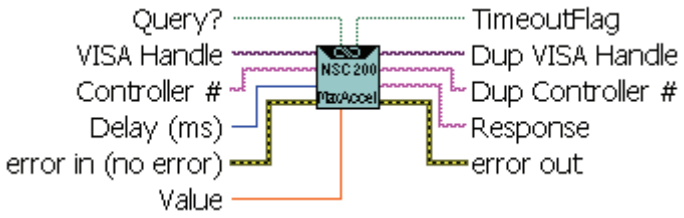
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.27 Set Maximum Acceleration.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

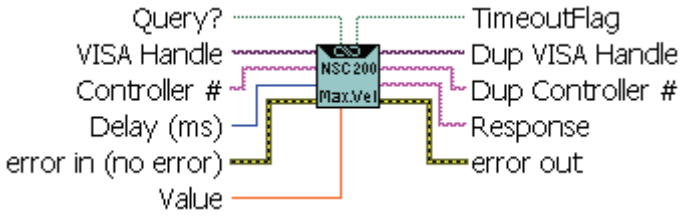
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.28 Set Maximum Velocity.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

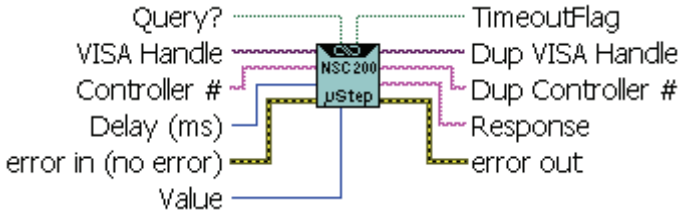
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.29 Set Microstep Factor.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

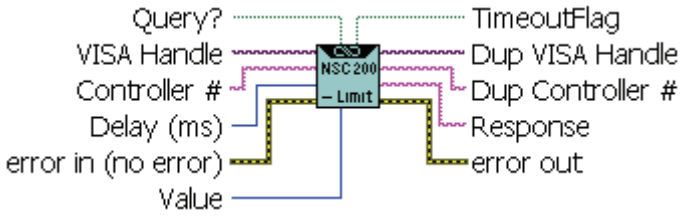
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.30 Set Negative Travel Limit.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

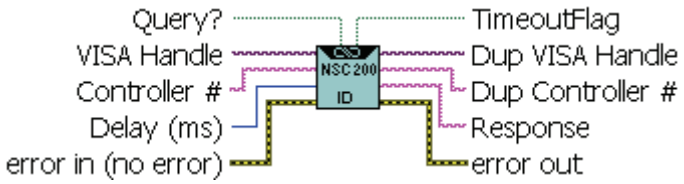
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.31 Set Positioner Identification.vi



VISA Handle

Controller #

Delay (ms)

Query?

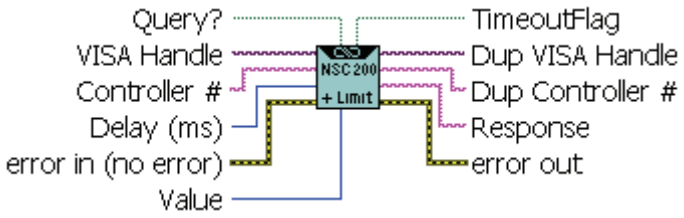
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.32 Set Positive Travel Limit.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

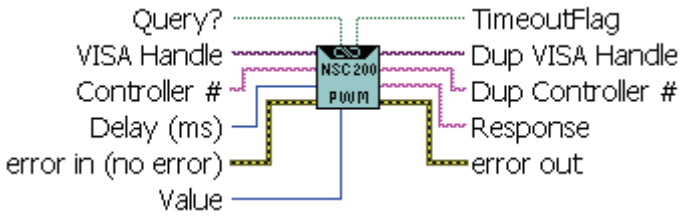
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.33 Set PWM Phase.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

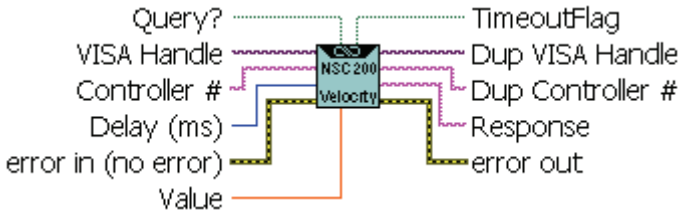
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.34 Set Velocity.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

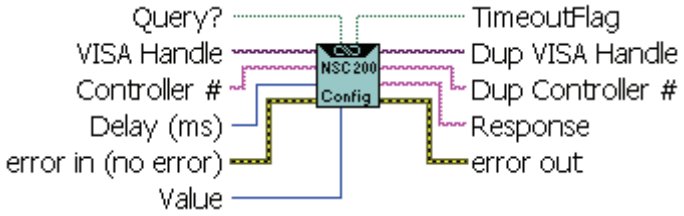
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.35 Set, Hardware Configuration.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

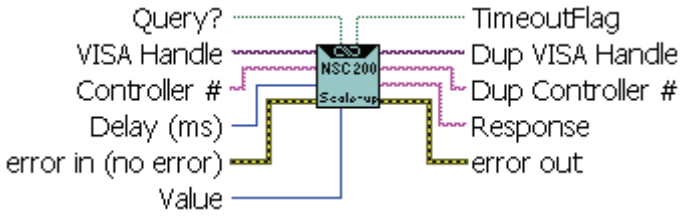
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.36 Set, Jog Scale-up Factor.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

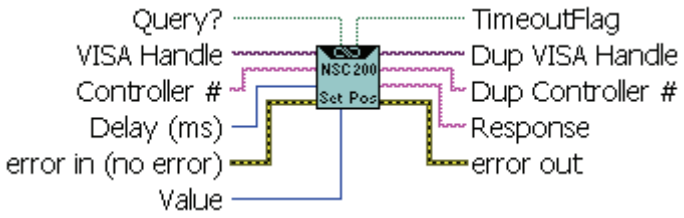
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.37 Set, Position for Knob Control.vi



VISA Handle

Controller #

Delay (ms)

Query?

Value

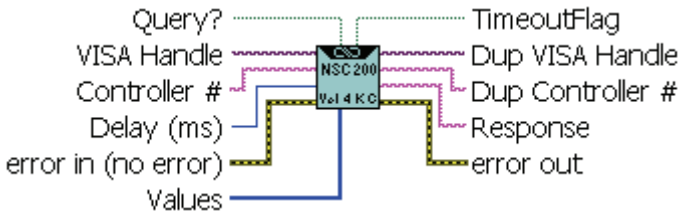
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.38 Set, Velocities for Knob Control.vi



VISA Handle

Controller #

Delay (ms)

Query?

Values

Value n1

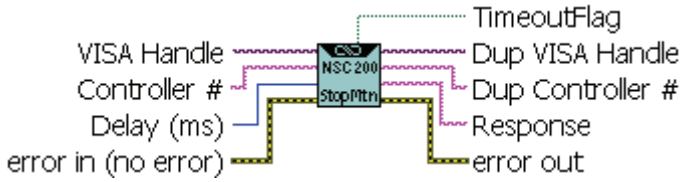
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.39 Stop Motion.vi



VISA Handle

Controller #

Delay (ms)

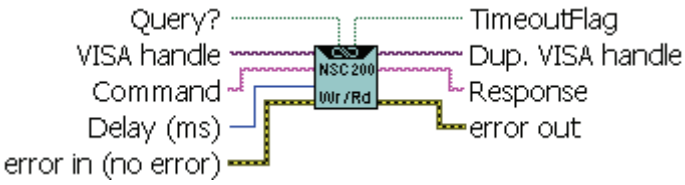
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.40 VisaCommWrapper.vi



VISA Handle

Controller #

Delay (ms)

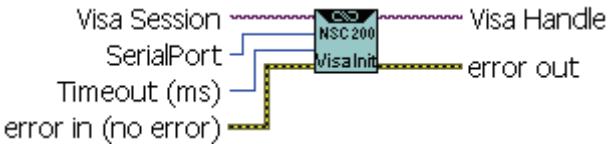
Dup VISA Handle

Dup Controller #

Response

TimeoutFlag

2.41 VisaInit.vi



Visa Session

SerialPort

Timeout (ms)

Visa Handle

2.42 NSC200 VI Tree.vi

2.43 Sample Controller Init.vi

2.44 Sample Cycle Program.vi

2.45 Sample Simple Control.vi

Controller Sample Cycle Program

- STOP button will stop sample
- MOVE button will perform relative move based on input value.

This sample program does the following:

- Initialize Controller
- Home Controller
- Convert Controller# to string and send with commands.
- Upon press of MOVE button, do a relative move for the distance specified (in counts)
- Read Position string
- Read Errors and display if found.

Inputs:

- Position 1 - Position to go to
- Move Relative Distance - Relative move amount of micro steps

NSC200 Visa Handle - Handle for RS232 port or virtual port for communication (see Control Panel -> Device Manager in Windows if unknown)

Delay (2000 ms default) - How long before reading response

Controller # - Index for controller to receive the communication.

Output:

- Num String - controller number.
- Error out - Any errors on device.

See VISACommWrapper.vi for other connection descriptions.

Service Form

Your Local Representative

Tel.: _____

Fax: _____

Name: _____

Company: _____

Address: _____

Country: _____

P.O. Number: _____

Item(s) Being Returned: _____

Model#: _____

Return authorization #: _____
(Please obtain prior to return of item)

Date: _____

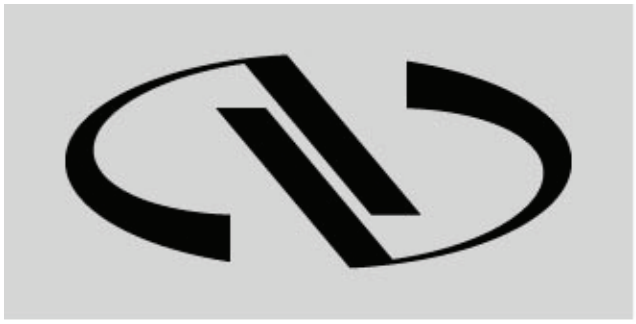
Phone Number: _____

Fax Number: _____

Serial #: _____

Description: _____

Reasons of return of goods (please list any specific problems): _____



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