



CONEX-IOD

Analog/Digital
I/O Module



 **Newport®**

LabVIEW Drivers

V2.0.x

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Original instructions.

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Preface

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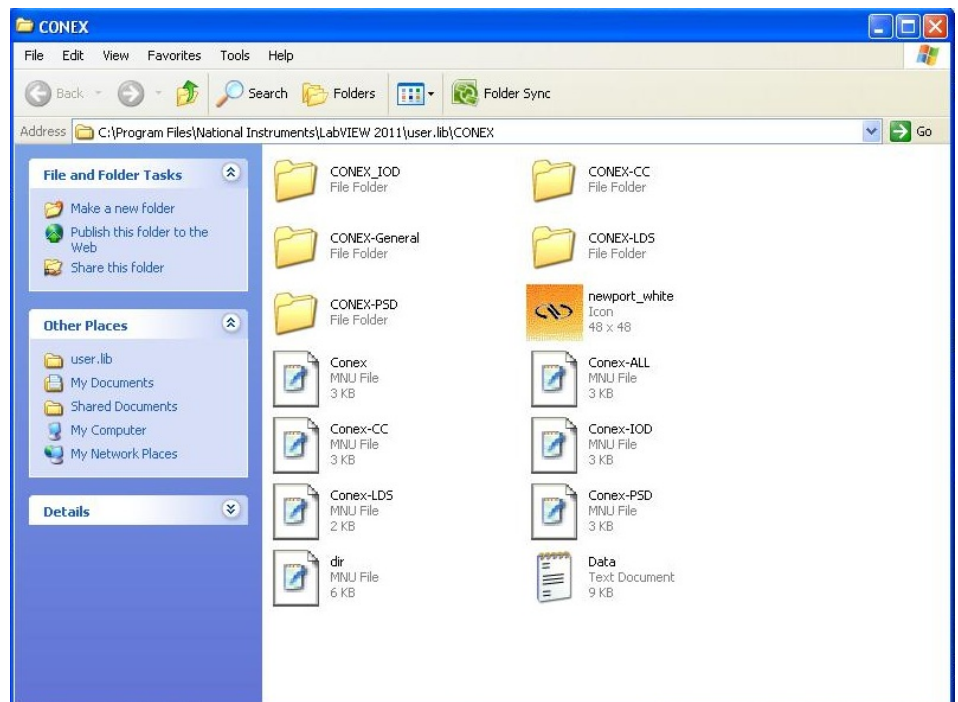
Analog/Digital I/O Module CONEX-IOD

1.0 CONEX-IOD LabVIEW Drivers

NOTE

You must use at least the 2010 of LabVIEW.

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



This general directory contains documented VIs, menu to access the different VIs and controls for CONEX instruments.

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



Connection Cluster in Connection components:

VISA Resource name - passed to low level vi's

Device name - Readable description of device

Controller address - Channel number

error - Error reporting (status = true for error)

Note on Controller Address:

(Important for other devices with multiple RS485 connections, used to match command syntax of these similar RS485 instruments, however, for USB connection only one channel is addressed per USB cable, so all addresses can be set to 1, regardless of number of connected devices).



VISA resource name



Device name



Controller address



Error: **error in** 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.

Right-click the **error in** control on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.



Status: **status** is TRUE (X) if an error occurred or FALSE (checkmark) to indicate a warning or that no error occurred.

Right-click the **error in** control on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.



Code: **code** is the error or warning code.

Right-click the **error in** control on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.



Source: **source** describes the origin of the error or warning.

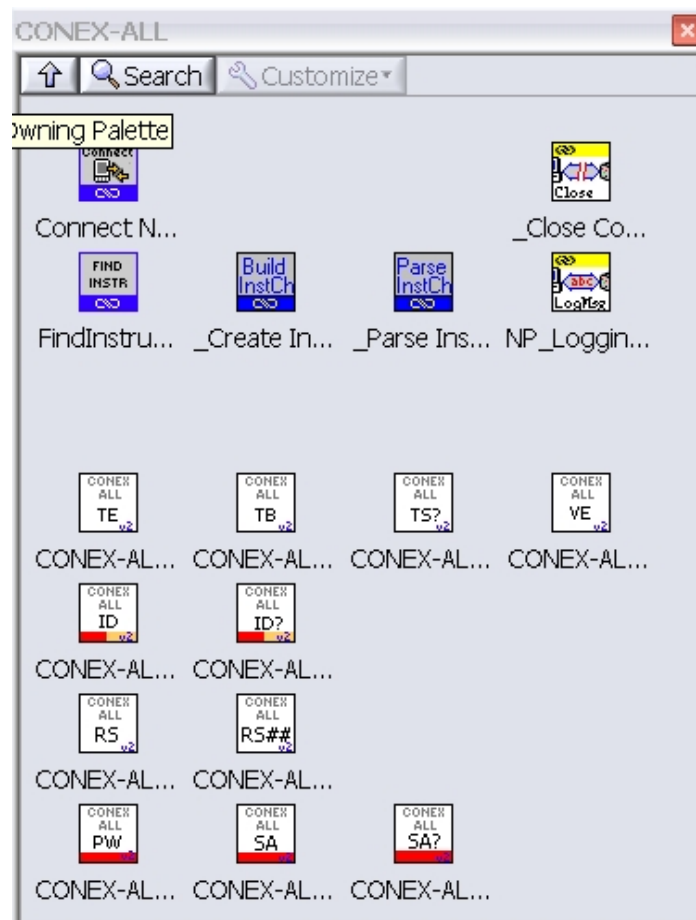
Right-click the **error in** control on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.

2.0 VI's Libraries

2.1 CONEX-ALL General Menu – Communication VI's

The Communication VISs at the top are low-level sub-VIs that talk to the device for you. The lower VIs with white background are configuration Vis common to all the CONEX family of devices.

The “Connect Newport Instrument.vi” will setup a connection and build a Connection Cluster that is all you need to pass to the other CONEX-CC specific function sub-VIs.

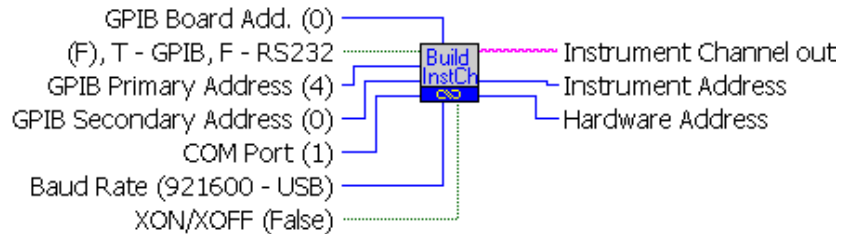


2.1.1 _Create Instrument Channel.vi

Builds the instrument channel handle (string) for an instrument connected over GPIB or RS-232. The default output String for a USB is RS-232 at a Baud Rate of 921600.

This string should be passed in and out of the library VIs to control the specified instrument. Different handles should be used for controlling multiple instruments.

This will also initialize the RS-232 port to the speed specified; which must be done manually if not using this VI.



(F), T - GPIB, F - RS232



GPIB Primary Address (4)



COM Port (1)



GPIB Secondary Address (0)



GPIB Board Add. (0)



Baud Rate (921600 - USB)



XON/XOFF (False)



Instrument Channel out

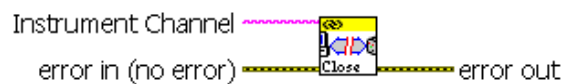


Instrument Address



Hardware Address

2.1.2 _Close Communications.vi



error in (no error)

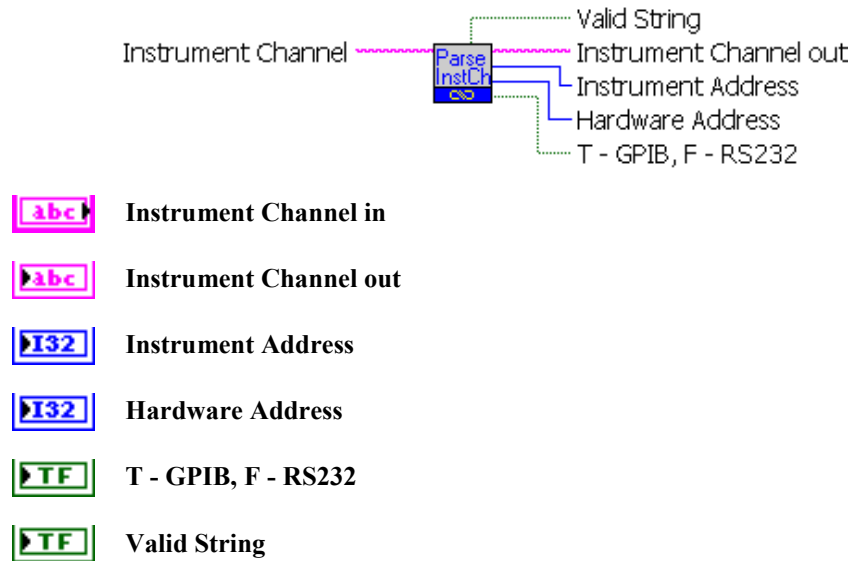


Instrument Channel



Instrument Channel

2.1.3 _Parse Instrument Channel.vi

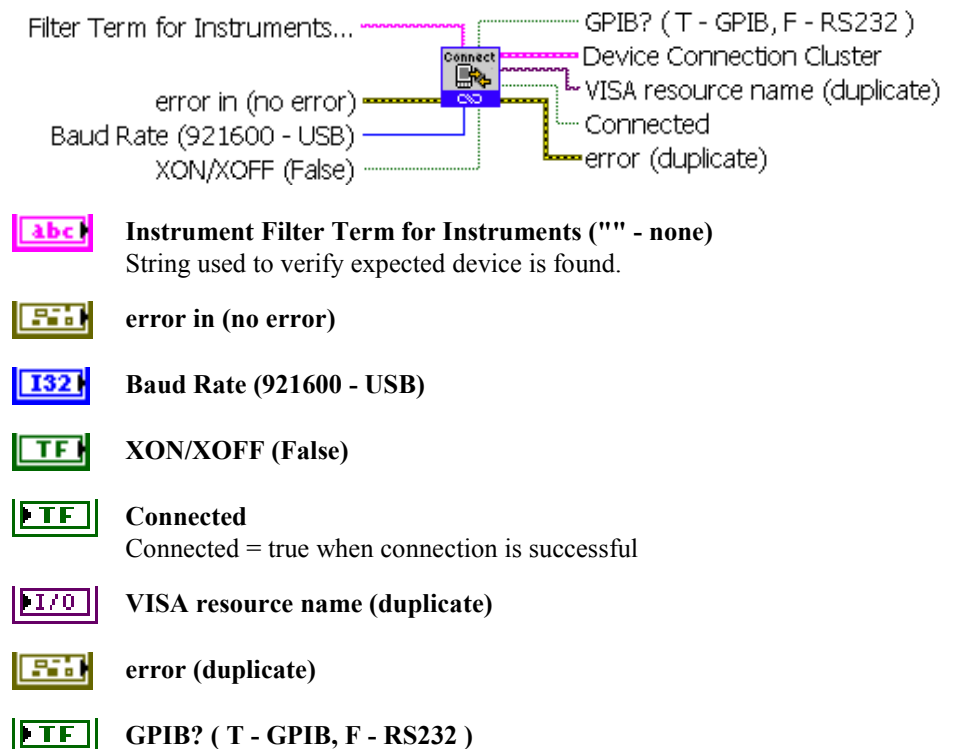


2.1.4 Connect Newport Instrument.vi

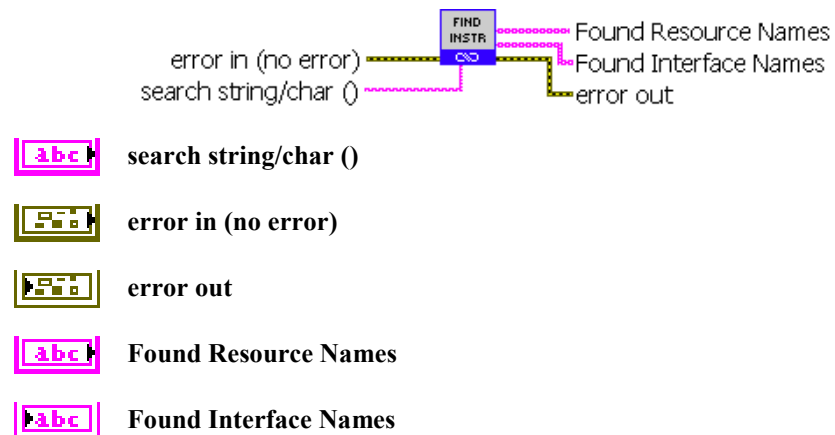
Connect Newport Device

Get list of instrument, filter (if set) and allow for selection of device to talk to.

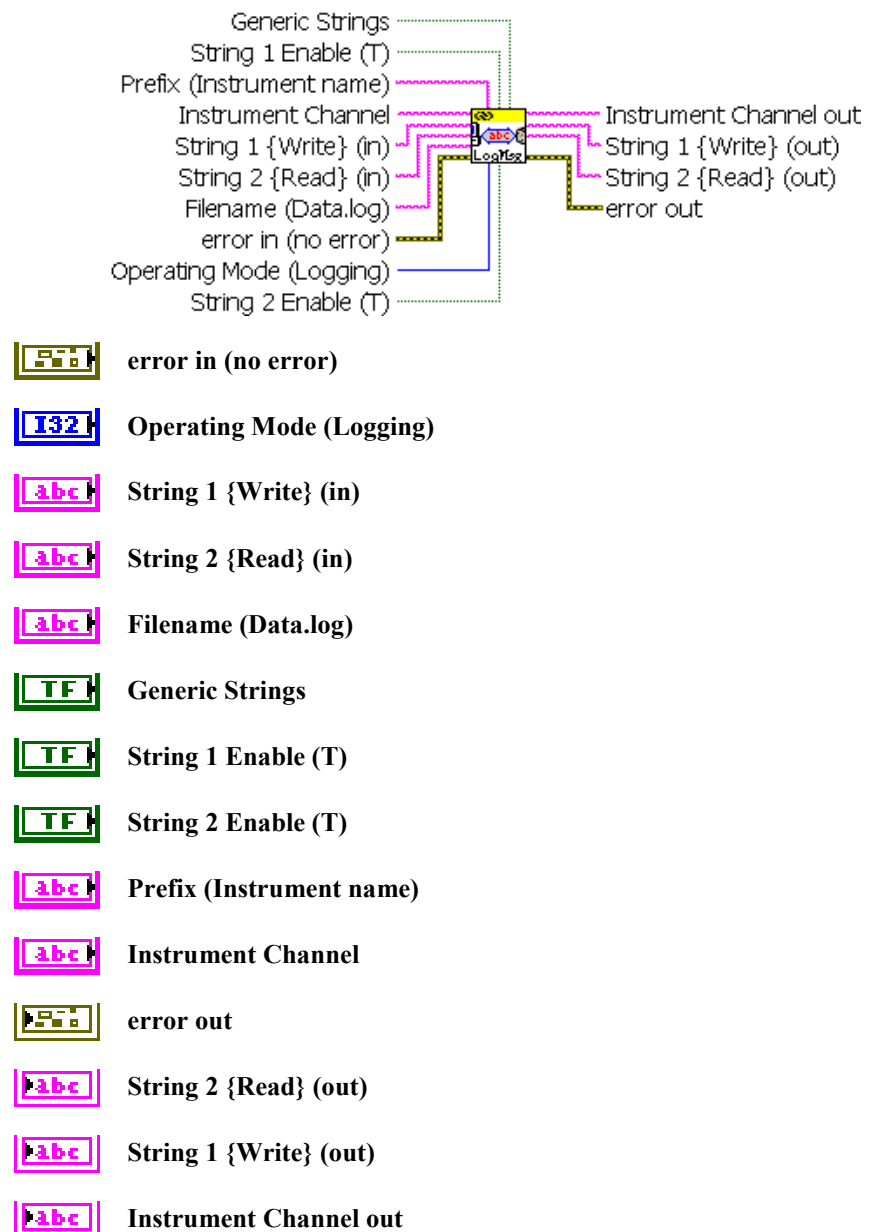
This is generic selection of the instrument to connected to, so look in system settings or on device to verify it is the correct port.



2.1.5 FindInstrument.vi



2.1.6 NP_Logging.vi



2.2 CONEX-ALL Enter-Leave CONFIGURATION State v2.vi



Go to CONFIGURATION State
 Configuration State?
 T - In Configuration State

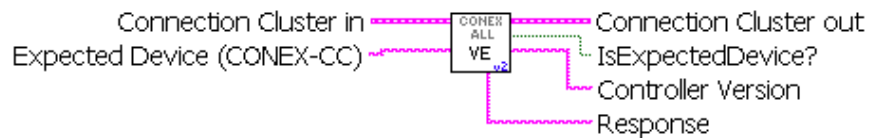
2.3 CONEX-ALL Get Command Error String v2.vi



Error code
 Error Code

Error description
 Description of input error code.

2.4 CONEX-ALL Get Controller Version v2.vi



Expected Device (CONEX-CC)

Response
 Full Response

Controller Version
 Controller Version information

IsExpectedDevice?
 Is CONEX - CC?

2.5 CONEX-ALL Get Controller's address v2.vi



Controller's address
 Controllers address

2.6 CONEX-ALL Get Identifier v2.vi



Identifier

Identification of attached hardware.

2.7 CONEX-ALL Get Last Command Error v2.vi



Error code

Last Command Error

2.8 CONEX-ALL Get Positioner Error And Controller State v2.vi



Positioner error

Positioner Error



Controller state

Controller State

2.9 CONEX-ALL Reset Controller v2.vi



Resets CONEX-CC

2.10 CONEX-ALL Reset Controller's Address To 1 v2.vi



2.11 CONEX-ALL Set Controller's address v2.vi



Controller's address
Controller's RS-485 address

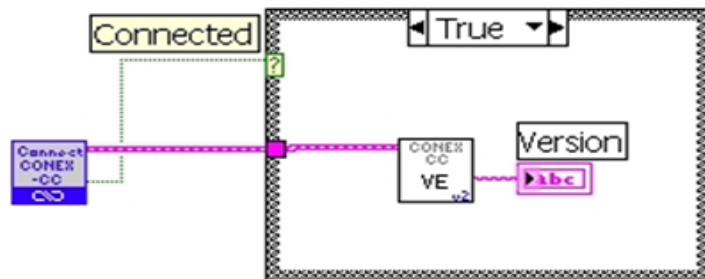
2.12 CONEX-ALL Set Identifier v2.vi



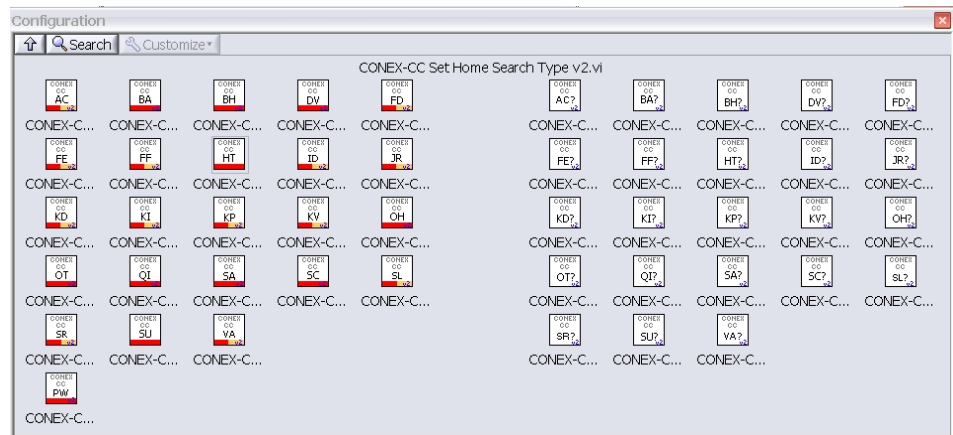
Stage Identifier
Stage Identifier

2.13 Examples

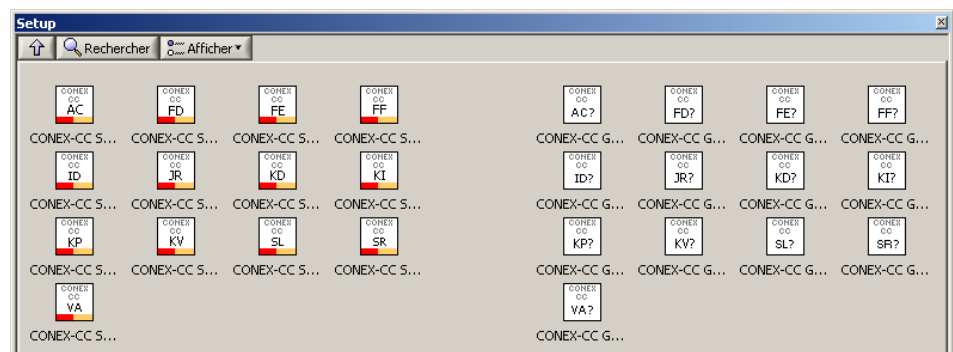
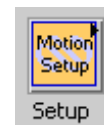
CONEX-Sample.vi shows how easy it is to find, connect and get version:



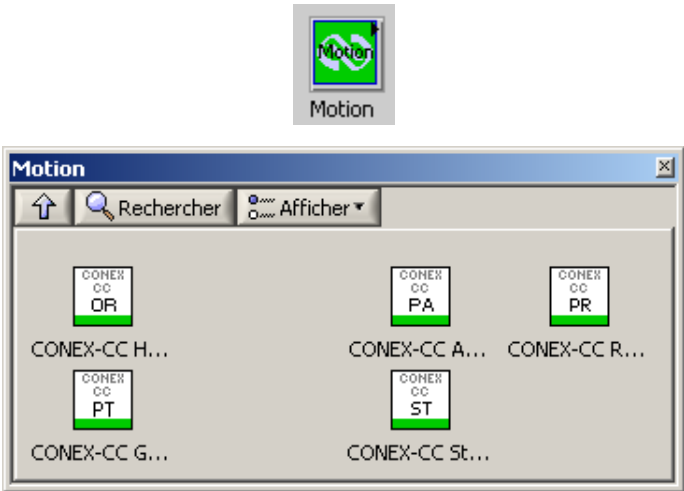
2.14 CONEX Configuration



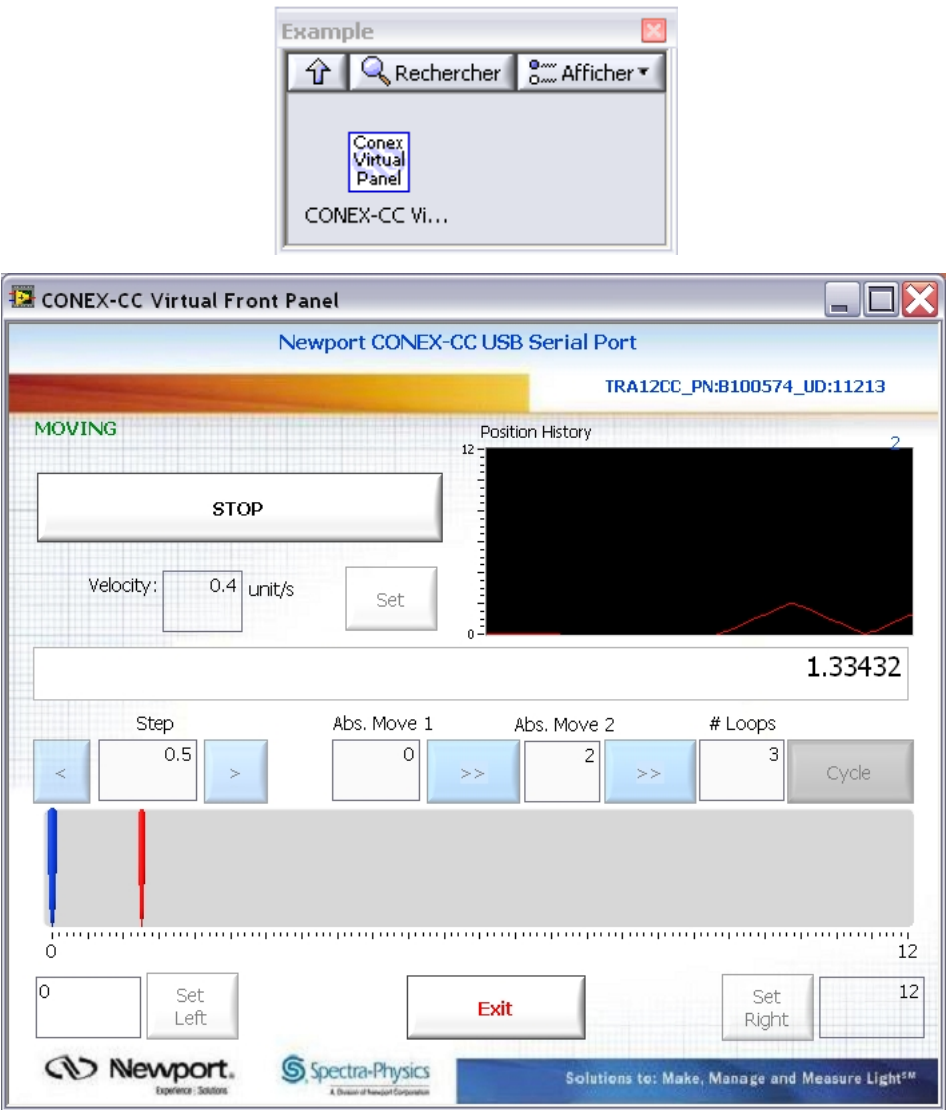
2.15 Motion Setup



2.16 Motion



2.17 Example



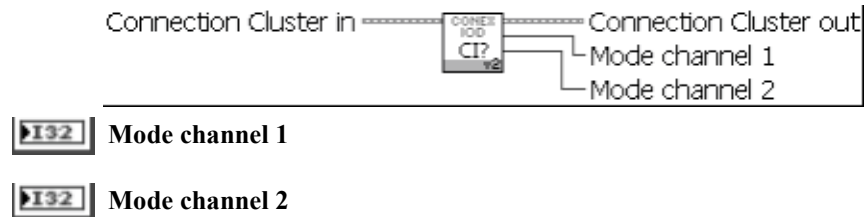
3.0 VI'S Description

3.1 CONEX-IOD Get Analog Inputs Mode v2.vi

CI? - Get analog inputs mode

Outputs:

- Analog inputs Mode channel 1
- Analog inputs Mode channel 2

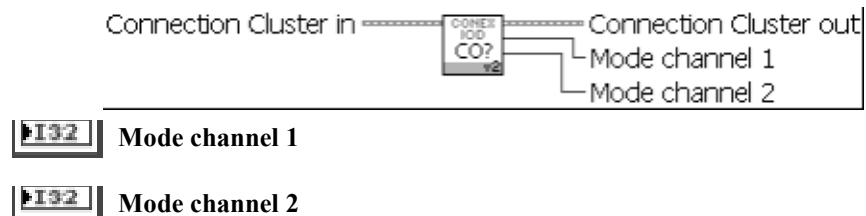


3.2 CONEX-IOD Get Analog Outputs Mode v2.vi

CO? - Get analog outputs mode

Outputs:

- Analog output mode for channel 1
- Analog output mode for channel 2

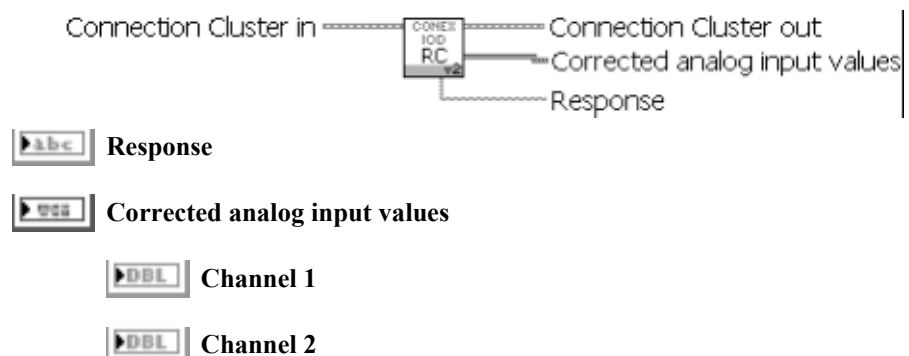


3.3 CONEX-IOD Get Corrected Analog Input Values v2.vi

RC - Get corrected analog input values

Outputs:

- Analog input values (corrected) for channel 1 & 2
- Response string

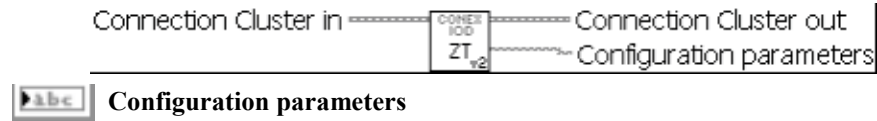


3.4 CONEX-IOD Get Current Configuration Parameters v2.vi

ZT - Get current configuration parameters

Output:

- Current configuration parameters

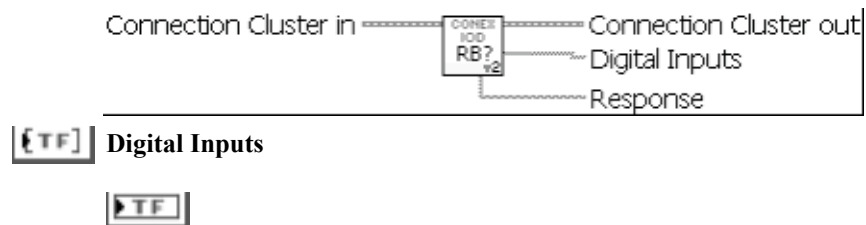


3.5 CONEX-IOD Get Digital Inputs v2.vi

RB - Get digital inputs

Outputs:

- Digital Inputs
- Response String

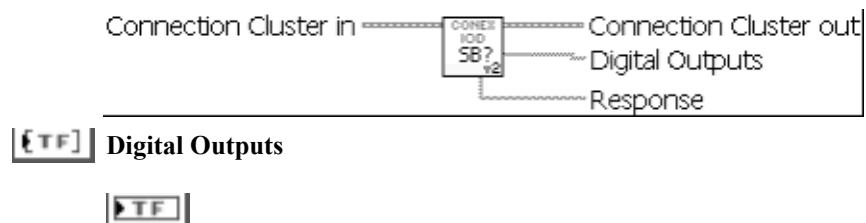


3.6 CONEX-IOD Get Digital Outputs v2.vi

SB? - Get digital outputs

Outputs:

- Digital Outputs
- Response String

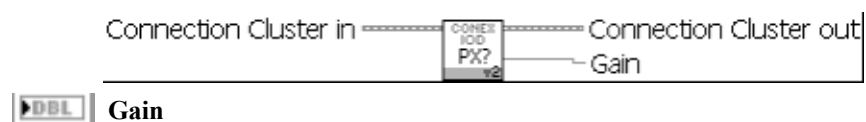


3.7 CONEX-IOD Get Gain On ADC Input 1 v2.vi

PX? - Get gain on ADC input 1

Output:

- Gain on ADC input channel 1

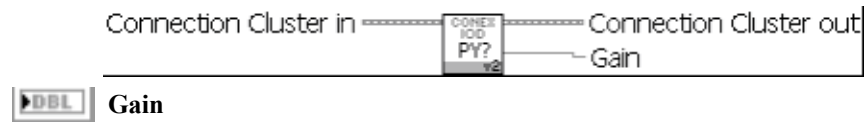


3.8 CONEX-IOD Get Gain On ADC Input 2 v2.vi

PY? - Get gain on ADC input 2

Output:

- Current ADC Gain on input 2



3.9 CONEX-IOD Get Gain On DAC Output 1 v2.vi

GA? - Get gain on DAC output 1

Output:

- Gain on DAC output 1



3.10 CONEX-IOD Get Gain On DAC Output 2 v2.vi

GB? - Get Gain on DAC input 2

Output:

- DAC Gain on input 2

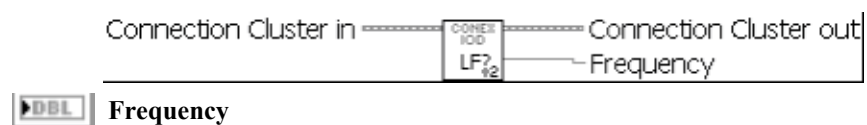


3.11 CONEX-IOD Get Low Pass Filter Frequency v2.vi

LF? - Get low pass filter frequency

Output:

- Low pass filter frequency setting

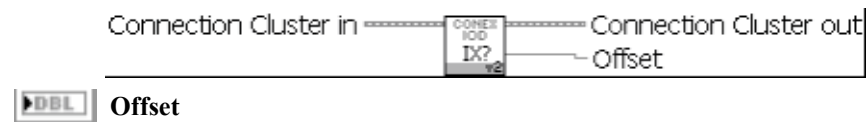


3.12 CONEX-IOD Get Offset On ADC Input 1 v2.vi

IX? - Get offset on ADC input 1

Output:

- ADC offset for input 1

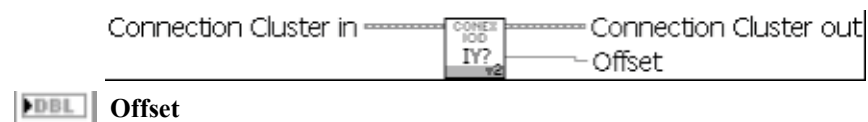


3.13 CONEX-IOD Get Offset On ADC Input 2 v2.vi

IY? - Get offset on ADC input 2

Output:

- ADC offset for input 2

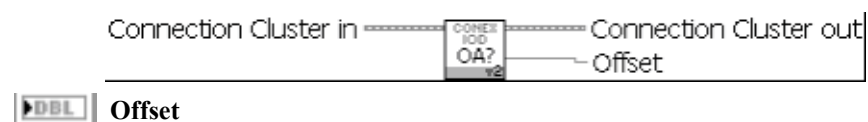


3.14 CONEX-IOD Get Offset On DAC Output 1 v2.vi

OA? - Get offset on DAC output 1

Output:

- DAC offset for output 1

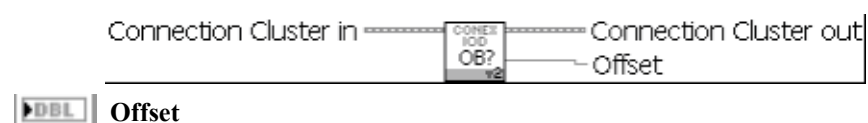


3.15 CONEX-IOD Get Offset On DAC Output 2 v2.vi

OB? - Get offset on DAC output 2

Output:

- DAC offset for output 2

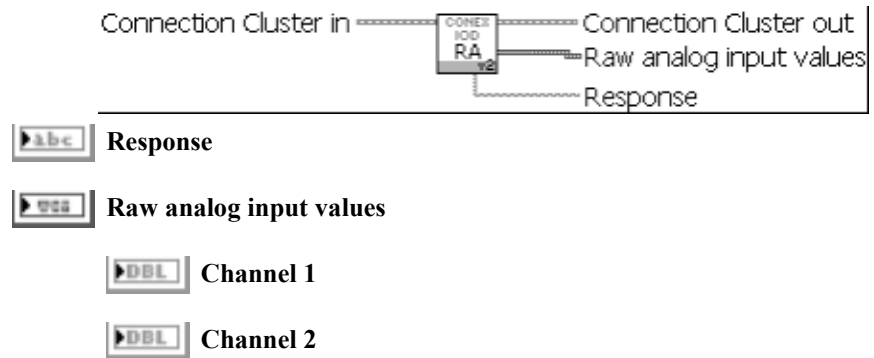


3.16 CONEX-IOD Get Raw Analog Input Values v2.vi

RA - Get analog input values

Outputs:

- Raw analog values bundle for Channel 1 & 2
- Response string

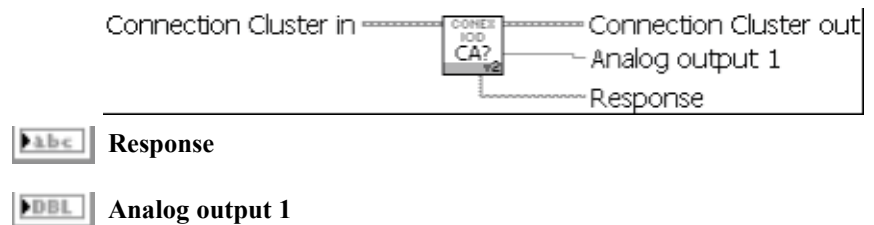


3.17 CONEX-IOD Get Value Of Analog Output 1 v2.vi

CA? - Get the value of analog output 1

Outputs:

- Analog output 1
- Response String

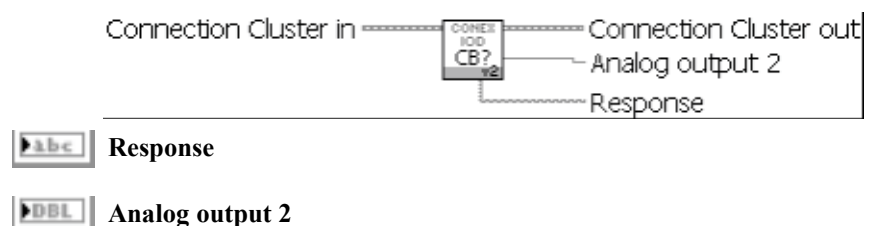


3.18 CONEX-IOD Get Value Of Analog Output 2 v2.vi

CB? - Get the value of analog output 2

Outputs:

- Value of analog output 2
- Response string

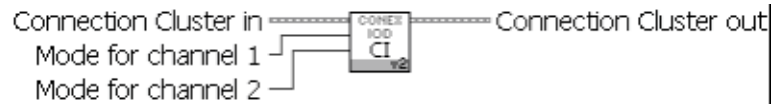


3.19 CONEX-IOD Set Analog Inputs Mode v2.vi

CI - Set analog inputs mode

Inputs:

- Analog Mode for channel 1
- Analog Mode for channel 2



Mode for channel 1



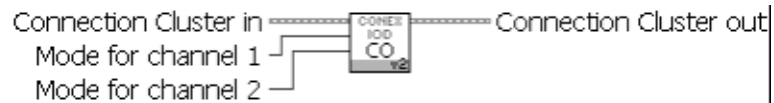
Mode for channel 2

3.20 CONEX-IOD Set Analog Outputs Mode v2.vi

CO - Set analog outputs mode

Inputs:

- Analog Output mode channel 1
- Analog Output mode channel 2



Mode for channel 1



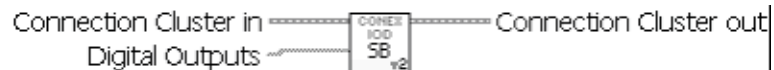
Mode for channel 2

3.21 CONEX-IOD Set Digital Outputs v2.vi

SB - Set digital outputs

Input:

- New Digital output setpoints



Digital Outputs

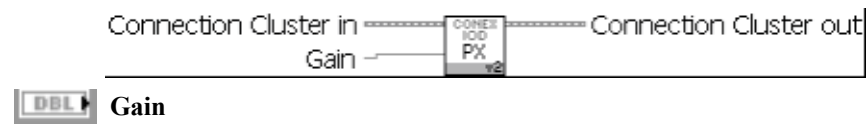


3.22 CONEX-IOD Set Gain On ADC Input 1 v2.vi

IX - Set gain on ADC input 1

Input:

- ADC gain for input 1

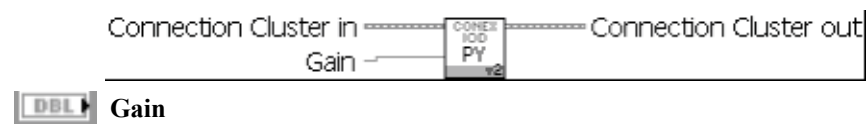


3.23 CONEX-IOD Set Gain On ADC Input 2 v2.vi

PY - Set gain on ADC input 2

Input:

- ADC Gain for input 2

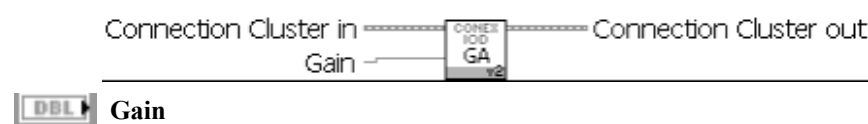


3.24 CONEX-IOD Set Gain On DAC Output 1 v2.vi

GA - Set gain on DAC output 1

Input:

- DAC gain for output 1

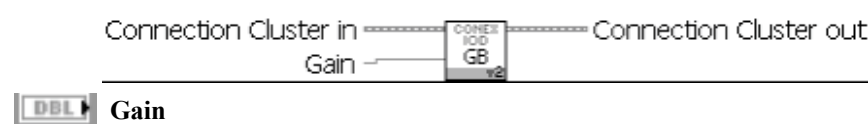


3.25 CONEX-IOD Set Gain On DAC Output 2 v2.vi

GB - Set Gain on DAC input 2

Input:

- DAC Gain on input 2

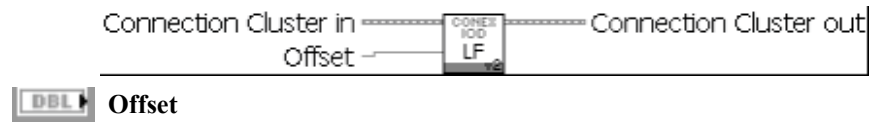


3.26 CONEX-IOD Set Low Pass Filter Frequency v2.vi

LF - Set low pass filter frequency

Input:

- Low pass filter frequency

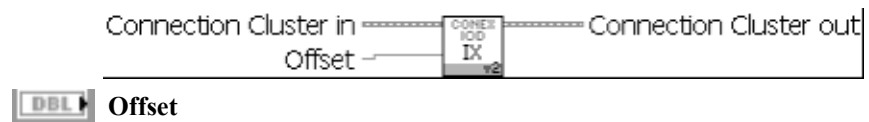


3.27 CONEX-IOD Set Offset On ADC Input 1 v2.vi

IX - Set offset on ADC input 1

Input:

- ADC offset for input 1

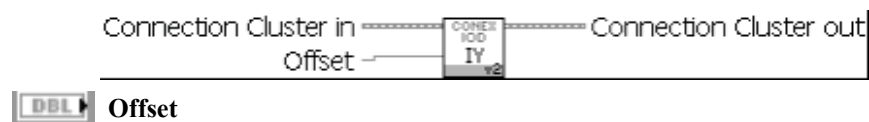


3.28 CONEX-IOD Set Offset On ADC Input 2 v2.vi

IY - Set offset on ADC input 2

Input:

- ADC offset for input 2

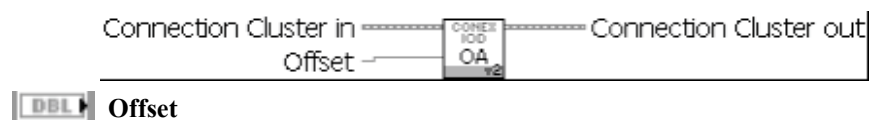


3.29 CONEX-IOD Set Offset On DAC Output 1 v2.vi

OA - Set offset on DAC output 1

Input:

- DAC offset for output 1

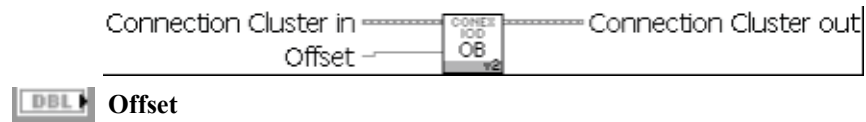


3.30 CONEX-IOD Set Offset On DAC Output 2 v2.vi

OB - Set offset on DAC output 2

Input:

- DAC offset for output 2

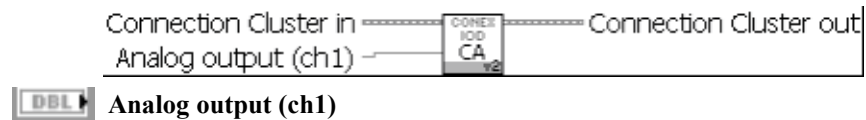


3.31 CONEX-IOD Set Value of Analog Output 1 v2.vi

CA - Set the value of analog output 1

Input:

- New value for analog output 1

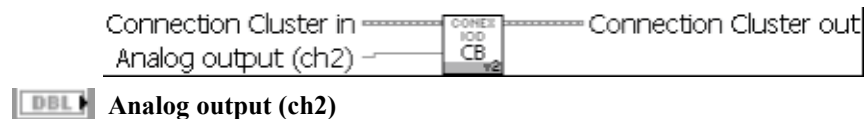


3.32 CONEX-IOD Set Value of Analog Output 2 v2.vi

CB - Set the value of analog output 2

Input:

- New value for analog output 2

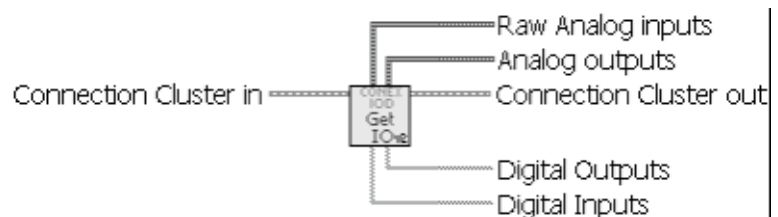


3.33 CONEX_IOD Get Analog IO and Digital IO v2.vi

Get Analog and Digital IO values

Outputs:

- Analog inputs
- Analog outputs
- Digital inputs
- Digital outputs



[TF] Digital Inputs



[TF] Digital Outputs



[DBL] Raw Analog inputs

[DBL] IN 1

[DBL] IN 2

[DBL] Analog outputs

[DBL] OUT 1

[DBL] OUT 2

Your Local Representative

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Return authorization #: _____

(Please obtain prior to return of item)

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Fax Number: _____

Serial #: _____

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

[illegible]



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