



Functions listed in alphabetical order

**pipx40 Clear Card.vi**

Clears all channels of all output sub-units on a card.

**instrument handle**  **instrument handle out**

**error in (no error)**  **error out**

**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**error in (no 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.



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

**pipx40 Clear Mask.vi**

Clears a sub-unit's switch mask, allowing activation of all channels by the following VI's:

"pipx40 Set Channel State.vi"

"pipx40 Set Channel Pattern.vi"



"pipx40 Set Crosspoint State.vi"



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card

**error in (no 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.

**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**error out** **error out** passes error or warning information out of a VI to be used by other VIs.

Right-click the **error out** indicator 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 out** indicator 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.

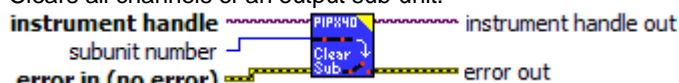
Right-click the **error out** indicator on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.

**source** **source** string describes the origin of the error or warning.


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

**pipx40 Clear Sub.vi**


Clears all channels of an output sub-unit.




**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of output sub-units available on the chosen card

 **error in (no 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.


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** **error out** passes error or warning information out of a VI to be used by other VIs.

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

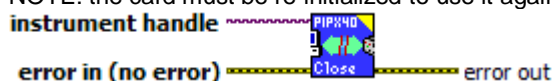
 **source** **source** string describes the origin of the error or warning.


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


### pipx40 Close.vi

Terminates the software connection to the card and deallocates system resources associated with the card.


NOTE: the card must be re-initialized to use it again.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error in (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.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Error Message.vi


Translates the numeric status code returned by other driver functions into a text description of the error.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **status code** A status value returned by another pipx40 driver function.


 **size of message** Maximum length of message

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.


 **message** Character string to receive a description of the error condition represented by the supplied status code.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.


## pipx40 Error Query.vi

Cards do not support this function, and if executed it returns the warning code VI\_WARN\_NSUP\_ERROR\_QUERY.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **size of error message** Maximum length of error message

 **error in (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.

**I32** **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.

**abc** **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.

**I70** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**I32** **error code** A numeric value indicating the nature of the reported error.

**err** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

**abc** **error message** Error message representing error code

### pipx40 Get Attenuation Value.vi

Obtains the current setting of an attenuator sub-unit, in dB.



**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to an attenuator sub-unit of the card.

**err** **error in (no 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.

**TF** **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.

**I32** **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.

**abc** **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.

**I70** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**SGL** **attenuation value** Variable to receive the current attenuation setting of the chosen sub-unit, in dB.

**FT** **error out error out** passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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 out** indicator on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.

**I32** **code code** is the error or warning code.

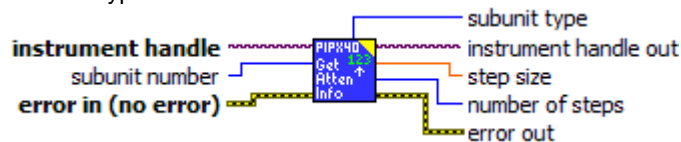
Right-click the **error out** indicator on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.

**abc** **source source** string describes the origin of the error or warning.

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

## pipx40 Get Attenuator Info.vi

Obtains type and dimensional information for an attenuator sub-unit (in numeric format).



**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to an attenuator sub-unit of the card.

**FT** **error in (no 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.

**TF** **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.


**I32** **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.


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit type** Variable to receive the numeric type code of the chosen sub-unit.


Type codes:  
8 = pipx40\_TYPE\_ATTEN Programmable Attenuator

 **number of steps** Variable to receive the number of attenuation steps of the chosen sub-unit.


 **step size** Variable to receive the attenuation step size of the chosen sub-unit.

 **error out error out** passes error or warning information out of a VI to be used by other VIs.

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

 **source source** string describes the origin of the error or warning.


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

### pipx40 Get Attenuator Pad Value.vi

Obtains the value of a single pad of an attenuator sub-unit, in dB.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to an attenuator sub-unit of the card.

 **pad number** The pad number whose value is to be obtained.

Valid Values: 1 thru the number of pads in the attenuator. This value can be found using "pipx40 Get Sub Info.vi", which returns it in its "columns" value.


 **error in (no 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**




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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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.


 **pad value** Variable to receive the attenuation value of the chosen pad, in dB.

 **error out error out** passes error or warning information out of a VI to be used by other VIs.


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


 **source source** string describes the origin of the error or warning.


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

## pipx40 Get Attenuator Type.vi

Obtains type and dimensional information of an attenuator sub-unit (in text format).




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to an attenuator sub-unit of the card.

 **size of type string** Maximum length of type string

 **error in (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.



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**type string** Character string to receive a description of the functionality of the chosen attenuator sub-unit.



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

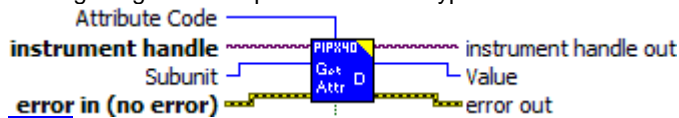


**source** The **source** string describes the origin of the error or warning.

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

## pipx40 Get Attribute DWORD.vi

VI for getting value of specific DWORD-type attribute.



**Subunit** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the chosen card



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**TF** **Output subunit** True for output subunit, false for input subunit.

**U16** **Attribute Code** Code of DWORD attribute the value is requested.

**U32** **Value** Value of attribute.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

### pipx40 Get Battery Current.vi

Get battery simulator output sink current.



**U32** **Subunit** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the chosen card

**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**DBL** **Current** The channel's present sink current setting.

**I170** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**Err** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

### pipx40 Get Battery Enable.vi

Get battery simulator output enable pattern.



**I32** **Subunit** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the chosen card

**Err** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **Enable Pattern** The present output enable pattern.

Output Enables for Channels 1 to 6 of the 41-752  
 (raw binary access)  
 000001B = Channel 1 enable  
 000010B = Channel 2 enable  
 000100B = Channel 3 enable  
 001000B = Channel 4 enable  
 010000B = Channel 5 enable  
 100000B = Channel 6 enable

**ERR** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

### pipx40 Get Battery Voltage.vi

Get battery simulator output voltage.



**U32** **Subunit** The number of the sub-unit to access.



Valid Values: must correspond to a power supply sub-unit of the chosen card



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**error in (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.



**Voltage** The channel's present voltage setting.



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Get Card ID.vi


Obtains a card's identification string.




**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.




**size of id string** Maximum length of id string

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.


 **id string** Character string to receive the card's identification string (IEEE488.2 \*IDN? format, 73 characters maximum including terminating null).

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Get Card Status.vi

Obtains bit-flags indicating the current status of a card.



 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error in (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.



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**card status** Variable to receive a set of bit-flags indicating the current operational status of the card.

Bit Significance:

- 0x00000000 = pipx40\_STAT\_OK  
Card functional and stable
- 0x80000000 = pipx40\_STAT\_NO\_CARD  
No Pickering card open on the session
- 0x40000000 = pipx40\_STAT\_WRONG\_DRIVER  
Card requires later driver version
- 0x20000000 = pipx40\_STAT\_EEPROM\_ERR  
Error interpreting card EEPROM data
- 0x10000000 = pipx40\_STAT\_DISABLED  
Card is disabled
- 0x04000000 = pipx40\_STAT\_BUSY  
Card operations not yet completed
- 0x02000000 = pipx40\_STAT\_HW\_FAULT  
Hardware fault
- 0x01000000 = pipx40\_STAT\_PARITY\_ERROR  
PCIbus parity error
- 0x00080000 = pipx40\_STAT\_CARD\_INACCESSIBLE  
Card cannot be accessed (failed/removed/unpowered)
- 0x00040000 = pipx40\_STAT\_UNCALIBRATED  
One or more sub-units is uncalibrated
- 0x00020000 = pipx40\_STAT\_CALIBRATION\_DUE  
One or more sub-units is due for calibration



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Get Channel Pattern.vi

Obtains a bit-pattern representation of the states of all channels of an output sub-unit.



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card



**error in (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.



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**pattern** Array to receive a bit-pattern representing the current state of the chosen output sub-unit.

A '0' bit in the pattern indicates the corresponding channel is inactive or logic '0'.


A '1' bit in the pattern indicates the corresponding channel is active or logic '1'.

Channel 1 is represented in the least significant bit of the least significant element of the array.


# pickering

NOTE: the number of 32-bit longwords appropriate to the size of the chosen sub-unit will be overwritten. If the array passed is of insufficient size overflow will occur, causing corruption of adjacent memory.


 **pattern**

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

## pipx40 Get Channel State.vi

Obtains the state of an individual output channel.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of output sub-units available on the chosen card

 **channel number** The number of the individual output channel of the chosen sub-unit to be queried.


Valid Values: 1 thru the number of outputs available on the chosen sub-unit

 **error in (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.

**abc** **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.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**TF** **state** Variable to receive the chosen channel's state.

Values: VI\_OFF = channel inactive or logic '0'  
VI\_ON = channel active or logic '1'

**ERR** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

### pipx40 Get Closure Limit.vi

Obtains the maximum number of output channel closures permitted on a specified sub-unit.



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**ERR** **error in (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.

**TF** **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.

**I32** **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.


**abc** **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.

 **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of output sub-units available on the chosen card

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.


 **closure limit** Variable to receive the maximum number of output channel closures permitted on the specified sub-unit.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

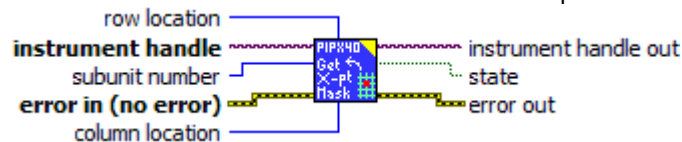
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.


 **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.

### pipx40 Get Crosspoint Mask.vi

Obtains the mask state of an individual matrix crosspoint.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of output sub-units available on the chosen card

 **row location** The row (Y) location of the individual crosspoint of the chosen sub-unit to be queried.

Valid Values: 1 thru the number of rows available on the chosen sub-unit

 **error in (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.

**I32** **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.

**abc** **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.

**U32** **column location** The column (X) location of the individual crosspoint of the chosen sub-unit to be queried.

Valid Values: 1 thru the number of columns available on the chosen sub-unit

**I70** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**TF** **state** Variable to receive the chosen crosspoint's mask state.

Values:  
VI\_OFF = crosspoint unmasked  
VI\_ON = crosspoint masked

**error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **code** The **code** input identifies the error or warning.

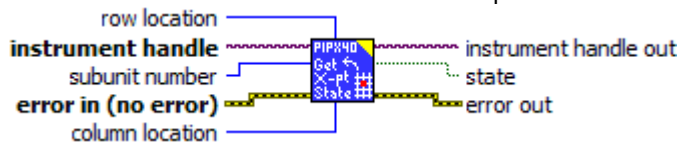
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

**abc** **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.

### pipx40 Get Crosspoint State.vi

Obtains the state of an individual matrix crosspoint.



**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card

**U32** **row location** The row (Y) location of the individual crosspoint of the chosen sub-unit to be queried.

Valid Values: 1 thru the number of rows available on the chosen sub-unit



**error in (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.



**column location** The column (X) location of the individual crosspoint of the chosen sub-unit to be queried.

Valid Values: 1 thru the number of columns available on the chosen sub-unit



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**state** Variable to receive the chosen crosspoint's state.

Values:

VI\_OFF = crosspoint inactive

VI\_ON = crosspoint active



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

# pickering

Obtains a card's diagnostic information string.



**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **size of diag string** The number of characters in the string assigned to hold the card's diagnostic message.

**TF** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I70** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**abc** **diagnostic string** Character string to receive the card's diagnostic message.

**TF** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

## pipx40 Get Mask Pattern.vi

Obtains a bit-pattern representation of a sub-unit's switch mask. A '1' bit in the mask indicates that the corresponding channel cannot be activated by the following VI's:  
"pipx40 Set Channel State.vi"




"pipx40 Set Channel Pattern.vi"


"pipx40 Set Crosspoint State.vi"




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of output sub-units available on the chosen card

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **pattern** Array to receive a bit-pattern representing the switch mask of the chosen output sub-unit.


A '0' bit in the pattern indicates that the corresponding channel is unmasked.

A '1' bit in the pattern indicates that the corresponding channel is masked.


Channel 1 is represented in the least significant bit of the least significant element of the array.

NOTE: the number of 32-bit longwords appropriate to the size of the chosen sub-unit will be overwritten. If the array passed is of insufficient size overflow will occur, causing corruption of adjacent memory.

 **pattern**

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Get Mask State.vi


Obtains an individual channel's mask setting.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of output sub-units available on the chosen card

 **channel number** The number of the individual output channel of the chosen sub-unit whose mask state is to be obtained.


Valid Values: 1 thru the number of outputs available on the chosen sub-unit

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **state** Variable to receive the chosen channel's mask state.

Values: VI\_OFF = channel unmasked  
VI\_ON = channel masked

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.



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

**TF** **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.

**I32** **code** The **code** input identifies the error or warning.

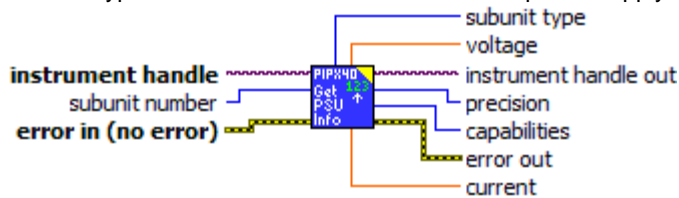
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

**abc** **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.

### pipx40 Get PSU Info.vi

Obtains type and characteristic information for a power supply sub-unit (in numeric format).



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the card.

**TF** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit type** Variable to receive the numeric type code of the chosen power supply sub-unit.

Type codes:



9 = pipx40\_TYPE\_PSUDC Power Supply, DC

**DBL** **voltage** Variable to receive the voltage rating of the chosen power supply sub-unit. For programmable voltage types this is the maximum output voltage that can be set.

**DBL** **current** Variable to receive the current rating of the chosen power supply sub-unit. For programmable current types this is the maximum output current that can be set.

**U32** **precision** Variable to receive the number of bits resolution of the chosen power supply sub-unit (applicable only to programmable supplies).

**U32** **capabilities** Variable to receive bit flags indicating particular capabilities of the chosen power supply sub-unit.

Capability flags:

0x00000001 = pipx40\_PSU\_CAP\_OUTPUT\_CONTROL  
Has output on/off control

0x00000002 = pipx40\_PSU\_CAP\_OUTPUT\_SENSE  
Has logic-level sensing of output active state

0x00000004 = pipx40\_PSU\_CAP\_PROG\_VOLTAGE  
Output voltage is programmable

0x00000008 = pipx40\_PSU\_CAP\_PROG\_CURRENT  
Output current is programmable

0x00000010 = pipx40\_PSU\_CAP\_CURRENT\_MODE\_SENSE  
Can sense if operating in current-limited mode

**FTI** **error out error out** passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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 out** indicator on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.

**I32** **code code** is the error or warning code.

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

**abc** **source source** string describes the origin of the error or warning.

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

### pipx40 Get PSU Type.vi

Obtains a description of a power supply sub-unit (in text format).



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the card.

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**U32** **size of type string** Maximum length of type string

**Err** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I70** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**abc** **type string** Character string to receive a description of the functionality of the chosen sub-unit.

**Err** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

## pipx40 Get PSU Voltage.vi


Obtains the output voltage setting of a power supply sub-unit.




**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.


Valid Values: must correspond to a power supply sub-unit of the card.

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.


 **voltage** Variable to receive the output voltage setting of the chosen sub-unit.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.


### pipx40 Get Resistance Value.vi

Obtains the current setting of a programmable resistor sub-unit, in ohms.


This function is usable only with sub-units that support calibrated resistance settings.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.


Valid Values: must correspond to a programmable resistor sub-unit supporting calibrated resistance settings.

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.


 **resistance value** Variable to receive the current resistance setting of the chosen sub-unit, in ohms.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

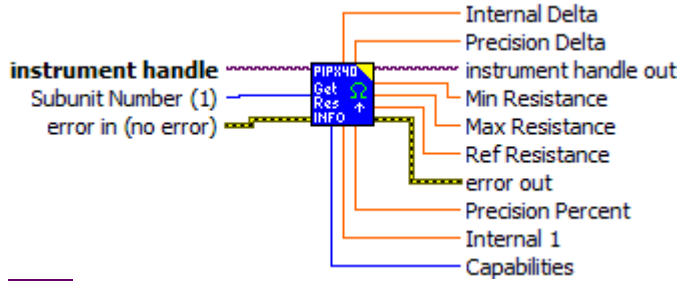
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

### **pipx40 Get Resistor Information.vi**

Obtains detailed information about a precision programmable resistor sub-unit.

This information is currently only available for "Precision" resistor models; other types will respond with null values.

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**I/O** **instrument handle** This control returns an Instrument Handle that is used in all subsequent function calls to differentiate between different sessions of this instrument driver.

Notes:

(1) Each time this function is invoked a Unique Session is opened. It is possible to have more than one session open for the same resource.

**Cluster** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**U32** **Subunit Number (1)** The number of the sub-unit to access.

Valid Values: must correspond to a programmable resistor sub-unit of the chosen card

**I/O** **instrument handle out** This control returns an Instrument Handle that is used in all subsequent function calls to differentiate between different sessions of this instrument driver.

Notes:


(1) Each time this function is invoked a Unique Session is opened. It is possible to have more than one session open for the same resource.

**Cluster** **error out** The error out cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

 **Min Resistance** Variable to receive the minimum in-range resistance setting, in ohms.


 **Max Resistance** Variable to receive the maximum in-range resistance setting, in ohms.

 **Ref Resistance** Variable to receive the reference resistance value, in ohms.


This value applies only for models that support it, such as 40-265.

 **Precision Percent** Variable to receive the percentage precision (in percent).

Example value: 0.2, in a model whose precision is specified as (+/-0.2%, +/-0.1 ohms).

 **Precision Delta** Variable to receive the delta precision, in ohms.

Example value: 0.1, in a model whose precision is specified as (+/-0.2%, +/-0.1 ohms).

 **Internal 1** Variable - currently unused.

 **Internal Delta** Variable to receive the internal precision, in ohms.

 **Capabilities** Variable to receive the sub-unit's capabilities flags.

Bit Significance:

0x00000000 = pipx40\_RES\_CAP\_NONE  
No special capabilities

0x00000001 = pipx40\_RES\_CAP\_PREC  
Precision resistor - supporting function  
pipx40 Set Resistance.vi etc.

0x00000002 = pipx40\_RES\_CAP\_ZERO  
Supports "zero ohms" setting (short circuit)


0x00000004 = pipx40\_RES\_CAP\_INF  
Supports infinity setting (open circuit)


0x00000008 = pipx40\_RES\_CAP\_REF  
Supports reference calibration value

### pipx40 Get Settling Time.vi

Obtains the settling time of a specified sub-unit's outputs.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error in (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.

 **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of output sub-units available on the chosen card

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.


 **settling time** Variable to receive the settling time of the specified sub-unit's outputs, in microseconds.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

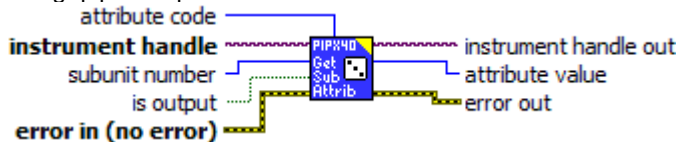
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

 **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.

### pipx40 Get Sub Attribute.vi

Obtains the value of a sub-unit attribute. These values facilitate customized operation of particular sub-unit types using "pipx40 Operate Switch.vi".



 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**U32** **subunit number** The number of the sub-unit to access.

This function is only applicable to certain sub-unit types (matrix with auto-isolation and/or auto-loopthru features).

**U32** **attribute code** A code indicating the attribute whose value is to be queried.

Valid codes are:

0x00000001 = pipx40\_SUB\_ATTR\_CHANNEL\_SUBSWITCHES  
Gets number of subswitches per logical channel (matrix crosspoint)

0x00000002 = pipx40\_SUB\_ATTR\_X\_ISO\_SUBSWITCHES  
Gets number of subswitches per logical X-isolator

0x00000003 = pipx40\_SUB\_ATTR\_Y\_ISO\_SUBSWITCHES  
Gets number of subswitches per logical Y-isolator

0x00000004 = pipx40\_SUB\_ATTR\_X\_LOOPTHRU\_SUBSWITCHES  
Gets number of subswitches per logical X-loopthru

0x00000005 = pipx40\_SUB\_ATTR\_Y\_LOOPTHRU\_SUBSWITCHES  
Gets number of subswitches per logical Y-loopthru

0x00000100 = pipx40\_SUB\_ATTR\_NUM\_X\_SEGMENTS  
Gets number of X-axis segments

0x00000101 = pipx40\_SUB\_ATTR\_X\_SEGMENT01\_SIZE  
Gets size of X-axis segment 1

0x00000102 = pipx40\_SUB\_ATTR\_X\_SEGMENT02\_SIZE  
Gets size of X-axis segment 2

0x00000103 = pipx40\_SUB\_ATTR\_X\_SEGMENT03\_SIZE  
Gets size of X-axis segment 3

0x00000104 = pipx40\_SUB\_ATTR\_X\_SEGMENT04\_SIZE  
Gets size of X-axis segment 4

0x00000105 = pipx40\_SUB\_ATTR\_X\_SEGMENT05\_SIZE  
Gets size of X-axis segment 5



0x00000106 = pipx40\_SUB\_ATTR\_X\_SEGMENT06\_SIZE  
Gets size of X-axis segment 6

0x00000107 = pipx40\_SUB\_ATTR\_X\_SEGMENT07\_SIZE  
Gets size of X-axis segment 7

0x00000108 = pipx40\_SUB\_ATTR\_X\_SEGMENT08\_SIZE  
Gets size of X-axis segment 8

0x00000109 = pipx40\_SUB\_ATTR\_X\_SEGMENT09\_SIZE  
Gets size of X-axis segment 9

0x0000010A = pipx40\_SUB\_ATTR\_X\_SEGMENT10\_SIZE  
Gets size of X-axis segment 10

0x0000010B = pipx40\_SUB\_ATTR\_X\_SEGMENT11\_SIZE  
Gets size of X-axis segment 11

0x0000010C = pipx40\_SUB\_ATTR\_X\_SEGMENT12\_SIZE  
Gets size of X-axis segment 12

0x00000200 = pipx40\_SUB\_ATTR\_NUM\_Y\_SEGMENTS  
Gets number of Y-axis segments

0x00000201 = pipx40\_SUB\_ATTR\_Y\_SEGMENT01\_SIZE  
Gets size of y-axis segment 1

0x00000202 = pipx40\_SUB\_ATTR\_Y\_SEGMENT02\_SIZE  
Gets size of y-axis segment 2



**is output** Determines if the sub-unit for which attribute information is to be obtained has Input or Output function.

Valid Values: 0 or 1  
0 = Input sub-unit (not implemented)  
1 = Output sub-unit



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**attribute value** Variable to receive the value of the specified attribute.



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Get Sub Counts.vi

Obtains the number of input and output sub-units present on a card.



**I170** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**E171** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I170** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **input subunits** Variable to receive the number of input sub-units available on the specified card.

**U32** **output subunits** Variable to receive the number of output sub-units available on the specified card.

**E171** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

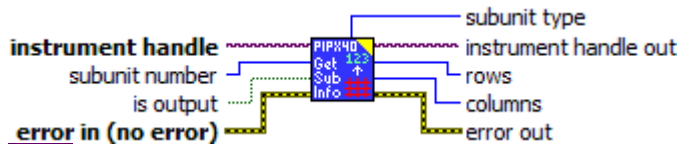
**abc** **source** The **source** string describes the origin of the error or warning.

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

### pipx40 Get Sub Info.vi

Obtains type and dimensional information for one of a card's sub-units (in numeric format).

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**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of sub-units of the specified type (input/output) available on the card

**TF** **is output** Determines if the sub-unit for which information is to be obtained has Input or Output function.

Valid Values: 0 or 1  
0 = Input sub-unit  
1 = Output sub-unit

**ERR** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.


**U32** **subunit type** Variable to receive the numeric type code of the chosen sub-unit.

Type codes:


- 1 = pipx40\_TYPE\_SW Uncommitted switches
- 2 = pipx40\_TYPE\_MUX Relay multiplexer (single-channel only)
- 3 = pipx40\_TYPE\_MUXM Relay multiplexer (multi-channel capable)
- 4 = pipx40\_TYPE\_MAT Standard matrix
- 5 = pipx40\_TYPE\_MATR RF matrix
- 6 = pipx40\_TYPE\_DIG Digital outputs
- 7 = pipx40\_TYPE\_RES Programmable Resistor
- 8 = pipx40\_TYPE\_ATTEN Programmable Attenuator
- 9 = pipx40\_TYPE\_PSUDC Power Supply, DC

**U32** **rows** Variable to receive the row-size (Y-dimension) of the chosen sub-unit.


**U32** **columns** Variable to receive the column-size (X-dimension) of the chosen sub-unit.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Get Sub Status.vi


Obtains bit-flags indicating the current status of a sub-unit.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error in (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.

 **subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the card

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit status** Variable to receive a set of bit-flags indicating the current operational status of the sub-unit.



Bit Significance:

- 0x00000000 = pipx40\_STAT\_OK  
Sub-unit functional and stable
- 0x80000000 = pipx40\_STAT\_NO\_CARD  
No Pickering card open on the session
- 0x40000000 = pipx40\_STAT\_WRONG\_DRIVER  
Card requires later driver version
- 0x20000000 = pipx40\_STAT\_EEPROM\_ERR  
Error interpreting card EEPROM data
- 0x10000000 = pipx40\_STAT\_DISABLED  
Card is disabled
- 0x08000000 = pipx40\_STAT\_NO\_SUB  
Card has no sub-unit with the specified number
- 0x04000000 = pipx40\_STAT\_BUSY  
Sub-unit operations not yet completed
- 0x02000000 = pipx40\_STAT\_HW\_FAULT  
Hardware fault
- 0x01000000 = pipx40\_STAT\_PARITY\_ERROR  
PCIbus parity error
- 0x00800000 = pipx40\_STAT\_PSU\_INHIBITED  
PSU sub-unit - supply is disabled (by software)
- 0x00400000 = pipx40\_STAT\_PSU\_SHUTDOWN  
PSU sub-unit - supply is shutdown (due to overload)
- 0x00200000 = pipx40\_STAT\_PSU\_CURRENT\_LIMIT  
PSU sub-unit - supply is operating in current-limited mode
- 0x00100000 = pipx40\_STAT\_CORRUPTED  
Sub-unit logical state is corrupted
- 0x00080000 = pipx40\_STAT\_CARD\_INACCESSIBLE  
Card cannot be accessed (failed/removed/unpowered)
- 0x00040000 = pipx40\_STAT\_UNCALIBRATED  
Sub-unit is uncalibrated
- 0x00020000 = pipx40\_STAT\_CALIBRATION\_DUE  
Sub-unit is due for calibration



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Get Sub Type.vi


Obtains type and dimensional information for one of a card's sub-units (in text format).



 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.


 **subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of sub-units of the specified type (input/output) available on the card


 **is output** Determines if the sub-unit for which a description is to be obtained has Input or Output function.

Valid Values: 0 or 1  
0 = Input sub-unit  
1 = Output sub-unit


 **size of type string** Maximum length of type string

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **type string** Character string to receive a description of the functionality of the chosen sub-unit.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Get Thermocouple Voltage.vi

Get thermocouple output voltage. (in mV)



**Subunit** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the chosen card



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**error in (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.



**Voltage** The channel's present voltage setting. (mV)



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

## pipx40 Initialize.vi

Initializes the card having the specified VISA resource name, claiming whatever system resources it requires.

The card is initialized in the following ways:

- the card is opened
- all output channels are cleared
- all output channels are unmasked



**resource name** The VISA resource name of the card to be opened.

Valid Values: Determined by the system's configuration and card complement.

Example: "PXI2::15::INSTR" specifies a card located on logical PXI bus 2, at logical slot 15.

Note that the logical slot number differs from the physical slot number marked on the chassis, and when using MXI-3 logical bus numbers may be affected by the way in which chassis are interconnected.



**id query** Specifies if the card is to be queried to confirm it's ID when it is opened. This action is implicit in the driver's operation so the value of this control is ignored.



**reset device** Specifies if the card is to be reset when it is opened. This action is obligatory for all cards so the value of this control is ignored.



**error in (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.



**abc** **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.

**I/O** **instrument handle out** Instrument handle to be used in all subsequent calls to the instrument.

**FE** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**IS2** **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.

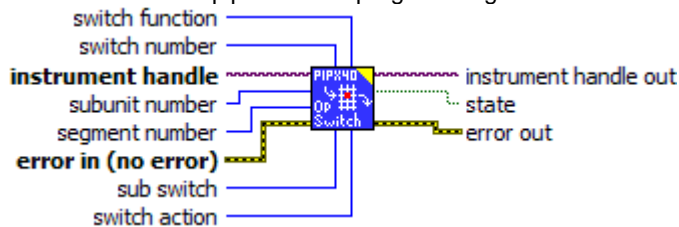
**abc** **source** The **source** string describes the origin of the error or warning.

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

### pipx40 Operate Switch.vi

For matrix sub-units having auto-isolation and/or auto-loopthru features; sets (optionally) and reads the state of an individual switch, supporting customized modes of operation for applications such as fault diagnostics.

Please consult the pipx40 driver programming manual for a complete description of the use of this function.



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

This function is only applicable to certain sub-unit types (matrix with auto-isolation and/or auto-loopthru features).

**U32** **switch function** A code indicating the functional group to which the switch belongs.

Valid codes:

0 = pipx40\_SW\_FUNC\_CHANNEL  
A channel (matrix crosspoint) switch

1 = pipx40\_SW\_FUNC\_X\_ISO  
A matrix X-isolation switch

2 = pipx40\_SW\_FUNC\_Y\_ISO  
A matrix Y-isolation switch



3 = pipx40\_SW\_FUNC\_X\_LOOPTHRU  
A matrix X-loopthru switch

4 = pipx40\_SW\_FUNC\_Y\_LOOPTHRU  
A matrix Y-loopthru switch



**error in (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.



**segment number** The number of the segment in which the switch is located.



**switch number** The logical number of the switch.

For matrix crosspoint switches this can be either:

- 1) If "segment number" is zero, the global logical number of the switch, as used by "pipx40 Set Channel State.vi".
- 2) If "segment number" is non-zero, the segment-local number of the switch, calculated in a similar way to the above.

For other switches the appropriate segment number must always be specified.



**sub switch** The number of the sub-switch to be accessed.

This value accommodates situations where the logical switch being targetted is implemented using multiple physical relays - for example a double-pole switch being implemented by two single-pole relays. Where this is not the case, use a value of 1.



**switch action** A code indicating the switch action to be performed.

Valid codes:

0 = pipx40\_SW\_ACT\_NONE  
No switch change - just set state result

1 = pipx40\_SW\_ACT\_OPEN  
Open switch

2 = pipx40\_SW\_ACT\_CLOSE  
Close switch



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**TF** **state** Variable to receive the state of the chosen switch (after performing the specified action).

Values:

VI\_OFF = switch is OFF

VI\_ON = switch is ON

**FE** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

### pipx40 Read Battery Interlock.vi

Read battery simulator interlock state.



**U32** **Subunit** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card

**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**FE** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**TF** **Interlock** The present battery simulator interlock state.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**err** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

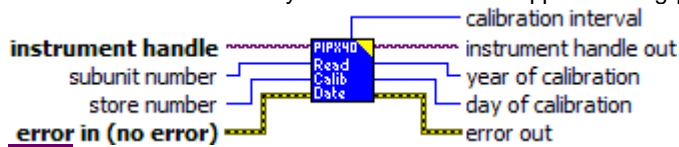
**abc** **source** The **source** string describes the origin of the error or warning.

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

### pipx40 Read Calibration Date.vi

Reads a sub-unit's calibration date and interval from on-card non-volatile memory.

This function is usable only with sub-units that support floating-point calibration values.



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to a sub-unit that supports floating-point calibration data

**err** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.


 **store number** The number of the calibration store to access.

Valid Values:


0 = pipx40\_CAL\_STORE\_USER (access user store)

1 = pipx40\_CAL\_STORE\_FACTORY (access factory store)


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

 **year of calibration** Variable to receive the year of calibration.

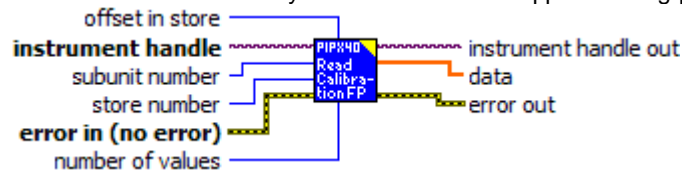
 **day of calibration** Variable to receive the day in the year of calibration.

 **calibration interval** Variable to receive the calibration interval.


### pipx40 Read Calibration FP.vi

Obtains one or more floating-point calibration values from the card's non-volatile memory.


This function is usable only with sub-units that support floating-point calibration values.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to a sub-unit that supports floating-point calibration data


 **offset in store** The offset in the calibration store at which to start.

Valid Values: 0 thru (the number of calibration values supported by the sub-unit - 1)


 **error in (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.

 **number of values** The number of values to be obtained from the calibration store.


Valid Values: 1 thru the number of calibration values supported by the sub-unit


 **store number** The number of the calibration store to access.

Valid Values:


0 = pipx40\_CAL\_STORE\_USER (access user store)

1 = pipx40\_CAL\_STORE\_FACTORY (access factory store)


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

 **data** Receives the value(s) obtained from the calibration store.



### pipx40 Read Calibration.vi

Obtains an integer calibration value from the card's non-volatile memory.





This function is usable only with sub-units that support integer calibration values.



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card

**cal index** The index number of the calibration value to be read.

Valid Values: 1 thru the number of calibration values supported by the chosen sub-unit

**error in (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.

**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**data** The calibration value obtained.

**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Read Input Pattern.vi


Obtains a bit-pattern representation of the states of all inputs of an input sub-unit.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of input sub-units available on the chosen card

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **pattern** Array to receive a bit-pattern representing the current state of the chosen input sub-unit.


A '0' bit in the pattern indicates the corresponding channel is inactive or logic '0'.

A '1' bit in the pattern indicates the corresponding channel is active or logic '1'.


Channel 1 is represented in the least significant bit of the least significant element of the array.

NOTE: the number of 32-bit longwords appropriate to the size of the chosen sub-unit will be overwritten. If the array passed is of insufficient size overspill will occur, causing corruption of adjacent memory.

 **pattern**


 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

# pickering

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.

## pipx40 Read Input State.vi

Obtains the state of an individual input channel.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of input sub-units available on the chosen card

 **channel number** The number of the individual input channel of the chosen sub-unit to be read.


Valid Values: 1 thru the number of inputs available on the chosen sub-unit

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **state** Variable to receive the chosen input channel's state.


Values: VI\_OFF = channel inactive or logic '0'  
VI\_ON = channel active or logic '1'

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.


### pipx40 Reset.vi


Restores the card to it's default state.

The card's state after execution of this function is:


- all output channels are cleared
- all output channels are unmasked




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error in (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.

 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

# pickering

**TF** **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.

**I32** **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.

**abc** **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.

## pipx40 Revision Query.vi

Obtains revision information for both the software driver and a card's firmware.



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **size of driver revision** Maximum length of driver revision

**U32** **size of instrument revision** Maximum length of instrument revision

**TF** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**abc** **driver revision** Character string to receive the software driver revision level.

**abc** **instrument revision** Character string to receive the instrument firmware revision level.

**TF** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

### pipx40 Self Test.vi

No actual test is performed as a consequence of executing this function, but any pre-existing faults are indicated in the result.

The card's state is unaffected.



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **size of test message** Maximum length of test message

**E** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**I16** **test result** A numeric code indicating the result of the self test operation.

Result Codes:

1 = pipx40\_FAULT\_UNKNOWN  
Unknown fault

2 = pipx40\_FAULT\_WRONG\_DRIVER


Incompatible software driver version


3 = pipx40\_FAULT\_EEPROM\_ERROR  
EEPROM data error

4 = pipx40\_FAULT\_HARDWARE  
Hardware defect


5 = pipx40\_FAULT\_PARITY  
Parity error

6 = pipx40\_FAULT\_CARD\_INACCESSIBLE  
Card cannot be accessed (failed/removed/unpowered)


 **test message** A text string describing the result of the self test operation.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Set Attenuation Value.vi


Sets an attenuator sub-unit to a specified value, in dB.




 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.


 **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to an attenuator sub-unit of the card.


 **attenuation value** The attenuation value to be set, in dB.

 **error in (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.


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

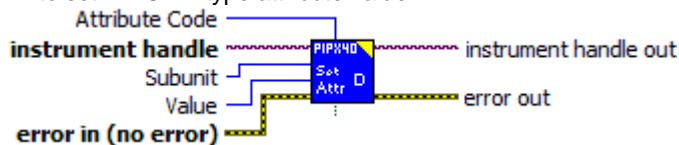
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

 **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.


### pipx40 Set Attribute DWORD.vi

VI to set DWORD-type attribute value.




 **Subunit** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the chosen card

 **Value** Value of attribute to set.

 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error in (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



# pickering

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.


 **Output subunit** True = output subunit, false = input subunit.

 **Attribute Code** Code of DWORD attribute to set.


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

## pipx40 Set Battery Current.vi

Set battery simulator output sink current.




 **Subunit** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the chosen card


 **Current** The current to set.

 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.


 **error in (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.


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Set Battery Enable.vi

Set battery simulator output enable pattern.



 **Subunit** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the chosen card

 **Enable Pattern** Pattern to set.

Output Enables for Channels 1 to 6 for teh 41-752 (raw binary access)

- 000001B = Channel 1 enable
- 000010B = Channel 2 enable
- 000100B = Channel 3 enable
- 001000B = Channel 4 enable



010000B = Channel 5 enable  
100000B = Channel 6 enable



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**error in (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.



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Set Battery Voltage.vi Set battery simulator output voltage.



**Subunit** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the chosen card



**Voltage** The voltage to set.



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**error in (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.



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Set Channel Pattern.vi

Sets all channels of an output sub-unit using a supplied bit-pattern.




**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**subunit number** The number of the sub-unit to access.



Valid Values: 1 thru the number of output sub-units available on the chosen card

 **pattern** Array containing the bit-pattern to be written to the chosen sub-unit.


A '0' bit in the pattern deactivates the corresponding channel or sets logic '0'.

A '1' bit in the pattern activates the corresponding channel or sets logic '1'.


Channel 1 is represented in the least significant bit of the least significant element of the array.

NOTE: the number of least significant bits appropriate to the size of the chosen sub-unit will be written. If the array passed contains insufficient bits, spurious data will be written to higher-numbered channels.


 **pattern**

 **error in (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.


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Set Channel State.vi

Sets the state of an individual output channel.



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card

**U32** **channel number** The number of the individual output channel of the chosen sub-unit to be operated.

Valid Values: 1 thru the number of outputs available on the chosen sub-unit

**TF** **action** Determines the nature of the operation to be performed on the chosen output channel.

Valid Values: 0 or 1  
0 = Open output or set logic '0'  
1 = Close output or set logic '1'

**Err** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**Err** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.



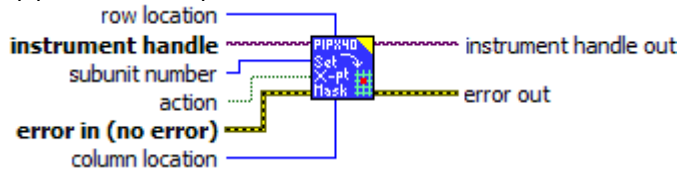
**source** The **source** string describes the origin of the error or warning.

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

### pipx40 Set Crosspoint Mask.vi

Sets the mask state of an individual matrix crosspoint. When masked, a channel cannot be activated by the following VI's:

"pipx40 Set Channel State.vi"  
 "pipx40 Set Channel Pattern.vi"  
 "pipx40 Set Crosspoint State.vi"



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card



**row location** The row (Y) location of the individual crosspoint of the chosen sub-unit to be masked/unmasked.

Valid Values: 1 thru the number of rows available on the chosen sub-unit



**action** Determines whether the chosen crosspoint is to be masked or unmasked.

Valid Values: 0 or 1  
 0 = Unmask crosspoint  
 1 = Mask crosspoint



**error in (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.

**U32** **column location** The column (X) location of the individual crosspoint of the chosen sub-unit to be masked/unmasked.

Valid Values: 1 thru the number of columns available on the chosen sub-unit

**I70** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**ERR** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **code** The **code** input identifies the error or warning.

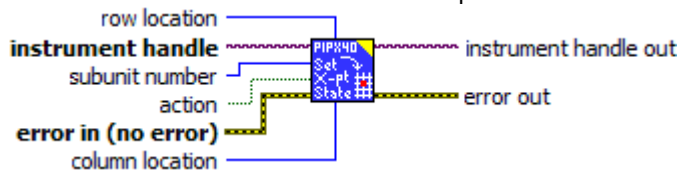
The pop-up option **Explain Error** (or Explain Warning) gives more information about the error displayed.

**abc** **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.

### pipx40 Set Crosspoint State.vi

Sets the state of an individual matrix crosspoint.



**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card

**U32** **row location** The row (Y) location of the individual crosspoint of the chosen sub-unit to be operated.

Valid Values: 1 thru the number of rows available on the chosen sub-unit

**TF** **action** Determines the nature of the operation to be performed on the chosen crosspoint.

Valid Values: 0 or 1  
0 = Open crosspoint  
1 = Close crosspoint

**ERR** **error in (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.



**TF** **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.

**I32** **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.

**abc** **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.

**U32** **column location** The column (X) location of the individual crosspoint of the chosen sub-unit to be operated.

Valid Values: 1 thru the number of columns available on the chosen sub-unit

**I170** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**FTI** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

### pipx40 Set Driver Mode.vi

Controls pipx40 driver options.



**U32** **new mode** A bit-pattern representing the desired driver mode settings.

Bit Significance:

0x00000000 = pipx40\_MODE\_DEFAULT  
Default, no special modes set

0x00000001 = pipx40\_MODE\_NO\_WAIT  
Function calls do not wait for operations to complete before returning

0x00000002 = pipx40\_MODE\_UNLIMITED  
Disable closure limits - see Warning below

0x00000008 = pipx40\_MODE\_IGNORE\_TEST  
 Permit card operation even if selftest fails  
 - see Warning below

Warning - pipx40\_MODE\_UNLIMITED  
 Use of pipx40\_MODE\_UNLIMITED to disable the maximum number of crosspoint closures permitted on high-density matrix cards is not recommended, because it carries the danger of overheating and consequent damage to both the card itself and the system in which it is installed.

Warning - pipx40\_MODE\_IGNORE\_TEST  
 The pipx40\_MODE\_IGNORE\_TEST feature should be used with extreme caution. If a defective card is forcibly enabled, under some fault conditions a large number of outputs could be energised spuriously, resulting in overheating and consequent damage to both the card itself and the system in which it is installed. The intended purpose of this feature is to allow continued operation of a BRIC unit from which a daughtercard has been removed for maintenance.



**error in (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.



**previous mode** A bit-pattern representing the driver mode settings prior to executing this function.

Bit Significance:

0x00000000 = pipx40\_MODE\_DEFAULT  
 Default, no special modes set

0x00000001 = pipx40\_MODE\_NO\_WAIT  
 Function calls do not wait for operations to complete before returning

0x00000002 = pipx40\_MODE\_UNLIMITED  
 Disable closure limits

0x00000008 = pipx40\_MODE\_IGNORE\_TEST  
 Permit card operation even if selftest fails



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

**I32** **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.

**abc** **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.

### pipx40 Set Mask Pattern.vi

Sets a sub-unit's switch mask to the supplied bit-pattern. A '1' bit in the mask disables the corresponding channel for the following VI's:

"pipx40 Set Channel State.vi"

"pipx40 Set Channel Pattern.vi"

"pipx40 Set Crosspoint State.vi"



**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card

**U32** **pattern** Array containing the mask pattern to be set for the chosen sub-unit.

A '0' bit in the pattern unmask the corresponding channel.

A '1' bit in the pattern mask the corresponding channel.

Channel 1 is represented in the least significant bit of the least significant element of the array.

NOTE: the number of least significant bits appropriate to the size of the chosen sub-unit will be used. If the array passed contains insufficient bits, spurious data will be written to higher bits.

**U32** **pattern**

**TF** **error in (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.

**TF** **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.

**I32** **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.

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**abc** **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.

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**IS2** **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.

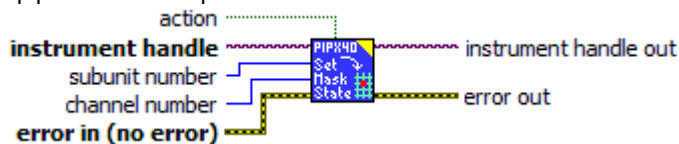
**abc** **source** The **source** string describes the origin of the error or warning.

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

## pipx40 Set Mask State.vi

Allows an individual channel to be masked or unmasked. When masked, a channel cannot be activated by the following VIs:

"pipx40 Set Channel State.vi"  
 "pipx40 Set Channel Pattern.vi"  
 "pipx40 Set Crosspoint State.vi"



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: 1 thru the number of output sub-units available on the chosen card

**U32** **channel number** The number of the individual output channel of the chosen sub-unit to be masked/unmasked.


Valid Values: 1 thru the number of outputs available on the chosen sub-unit

**TF** **action** Determines if the chosen output is to be masked or unmasked.


Valid Values: 0 or 1  
 0 = Unmask the output  
 1 = Mask the output

**error out** **error in (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.


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### pipx40 Set PSU Enable.vi


Enables or disables the output of a power supply sub-unit.



 **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

 **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the card.

 **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**TF** **action** Determines if the power supply's output is to be enabled or disabled.

Valid Values: 0 or 1  
 0 = Disable the output  
 1 = Enable the output

**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**ERR** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

### pipx40 Set PSU Voltage.vi

Sets the output voltage of a power supply sub-unit to a specified value. This function is only applicable to programmable voltage supplies.



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the card.

**DBL** **voltage** The output voltage value to be set.

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**error in (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.



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.



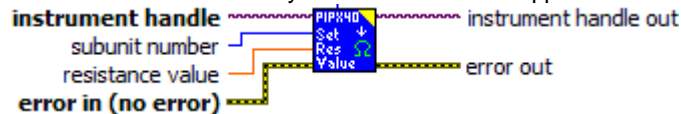
**source** The **source** string describes the origin of the error or warning.

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

## pipx40 Set Resistance Value.vi

Set a programmable resistor's resistance value, in ohms.

This function is usable only with sub-units that support calibrated resistance settings.



**instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.



**subunit number** The number of the sub-unit to access.

Valid Values: must correspond to a programmable resistor sub-unit supporting calibrated resistance settings.



**resistance value** The resistance value, in ohms.



**error in (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.



**mode** RES\_MODE\_SET = 0

Default mode to support existing break before make with settling delay

RES\_MODE\_MBB = 1

New mode to support make before break with settling delay

RES\_MODE\_APPLY\_PATTERN\_IMMEDIATE = 2

Apply new pattern immediately and wait till settling delay

RES\_MODE\_NO\_SETTLING\_DELAY = 4

Disable settling delay, this mode is same as DriverMode NO\_WAIT, but at sub-unit level

RES\_MODE\_DONT\_SET = 999

Do the calculations but don't set the card

Using RES\_MODE\_MBB then changing resistance the algorithm will make new relay contacts before releasing unwanted, thus causing the output resistance to drop in the transition between resistance settings.

Using RES\_MODE\_SET in those cases where the transitional resistance going high can be tolerated and using RES\_MODE\_MBB in those cases where it cannot be tolerated.

RES\_MODE\_APPLY\_PATTERN\_IMMEDIATE

it simply applies the new pattern with neither MBB nor BBM operation.

The advantage of this is faster operation, but the resistance in the transition between set values is undefinable

since it depends entirely on the movement of the armatures of the relays being changed.

Generally it is better to control the operation so that the transition is defined.



**instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.



**error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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



**TF** **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.

**I32** **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.

**abc** **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.

### pipx40 Set Thermocouple Voltage.vi

Set thermocouple output voltage. (in mV)



**U32** **Subunit** The number of the sub-unit to access.

Valid Values: must correspond to a power supply sub-unit of the chosen card

**DBL** **Voltage** The voltage to set. (mV)

**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**Err** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**I70** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**Err** **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

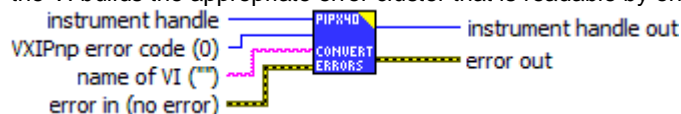


**source** The **source** string describes the origin of the error or warning.

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

### pipx40 VXIPnp Error Converter.vi

This VI converts error codes from VXIPnp instrument driver to standard LabVIEW error codes. If an error is detected the VI builds the appropriate error cluster that is readable by one of the error handlers supplied with LabVIEW.



**error in (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.



**VXIPnp error code (0)** Error code returned from a VXIPnp instrument driver operation.



**name of VI (\*)** The name of the VI or function that produced the error.



**instrument handle** The instrument handle that you obtain from the Initialize or Initialize With Options VIs. The handle identifies a particular instrument session.

Default Value: None



**error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

**abc** **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.

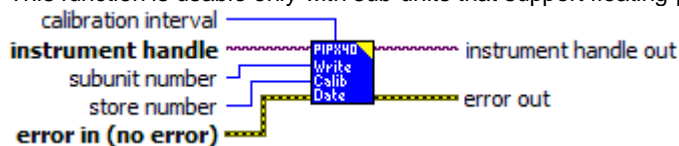
**I32** **instrument handle out** The instrument handle that you obtain from the Initialize or Initialize With Options VIs. The handle identifies a particular instrument session.

Default Value: None

## pipx40 Write Calibration Date.vi

Writes a sub-unit's calibration date and interval into on-card non-volatile memory. Date information is obtained from the current system date.

This function is usable only with sub-units that support floating-point calibration values.



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to a sub-unit that supports floating-point calibration data

**U32** **calibration interval** The desired calibration interval (in days).

**Err** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

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**U32** **store number** The number of the calibration store to access.

Valid Values:  
 0 = pipx40\_CAL\_STORE\_USER (access user store)  
 1 = pipx40\_CAL\_STORE\_FACTORY (access factory store)

**I70** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**ERR** **error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

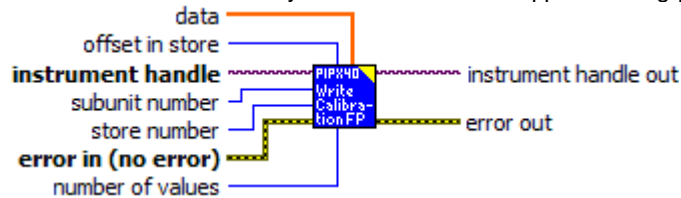
**abc** **source** The **source** string describes the origin of the error or warning.

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

## pipx40 Write Calibration FP.vi

Stores one or more floating-point calibration values in the card's non-volatile memory.

This function is usable only with sub-units that support floating-point calibration values.



**I70** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.

Valid Values: must correspond to a sub-unit that supports floating-point calibration data

**U32** **offset in store** The offset in the calibration store at which to start.

Valid Values: 0 thru (the number of calibration values supported by the sub-unit - 1)

**ERR** **error in (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.

**TF** **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.

**I32** **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.

**abc** **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.

**U32** **number of values** The number of values to be obtained from the calibration store.

Valid Values: 1 thru the number of calibration values supported by the sub-unit

**U32** **store number** The number of the calibration store to access.

Valid Values:  
0 = pipx40\_CAL\_STORE\_USER (access user store)  
1 = pipx40\_CAL\_STORE\_FACTORY (access factory store)

**DBL** **data** The value(s) to be written to the calibration store.



**I/O** **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

**error out** The **error out** cluster passes error or warning information out of a VI to be used by other VIs.

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

**TF** **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.

**I32** **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.

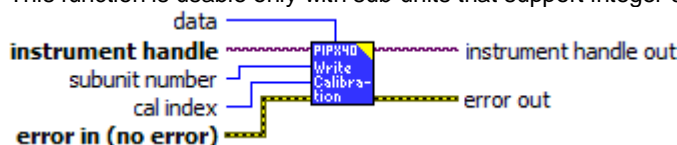
**abc** **source** The **source** string describes the origin of the error or warning.

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

### pipx40 Write Calibration.vi

Stores an integer calibration value in the card's non-volatile memory.


This function is usable only with sub-units that support integer calibration values.



**I/O** **instrument handle** Instrument handle obtained by the pipx40\_init call used to open the card.

**U32** **subunit number** The number of the sub-unit to access.


Valid Values: 1 thru the number of output sub-units available on the chosen card

 **cal index** The index number of the calibration value to be written.


Valid Values: 1 thru the number of calibration values supported by the chosen sub-unit

 **data** The calibration value to be written.


Note: The number of least significant bits supported by the target are stored (commonly 16 bits).

 **error in (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.


 **instrument handle out** Instrument handle obtained by the pipx40\_init call used to open the card.

 **error out** The **error out** cluster passes error or warning information out of a VI to be used by 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.

### VISA Basic Switch Example Program.vi

This sample program shows how to determine the characteristics of a basic switch card and open or close a channel.



## VISA Matrix Example Program.vi

This program demonstrates the basic programming need to determine the size and characteristics of a matrix and to open and close a croospoint connection.

