

Electronic Instrumentation





Power Supply Modules LabVIEW Instrument Driver Rev. 0 - 2 March 2015

Purpose of this User Manual

This User's Manual contains the full description of the Power Supply Modules LabVIEW Instrument Driver

Change Document Record

Date	Revision	Changes
2 March 2015	0	First issue of the document

Symbols, abbreviated terms and notation

Notavailable

Reference Document

[RD1] N1470 - Programmable HV Power Supply user manual

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	Supply modules Labview Control Software	

1 Overview

Power Supply Modules LabVIEW Instrument Driver is a set of VI'S, developed for LabVIEW 2009 and later releases (*LabVIEW™ is a Trademark of National Instruments Corp.*), that allow to configure and monitor all parameters of remotely controlled CAEN Progammable HV Power Supply modules. The supported power supplies (so far) are: N14xx, NDT14xx, R14xx, DT14xx and DT55xx families.

System requirements and installation setup



Host PC running LabVIEW 2009 or later releases and NI-VISA Run-Time Engine 5.3

LabVIEW™ is a Trademark of National Instruments Corp.

In order to install the Power Supply Modules LabVIEW Instrument Driver:

- Go to CAEN web site in the "Software" area of any NIM/Desktop/Rack Progammable HV Power Supply page.
- Download the Power Supply Modules LabVIEW Instrument Driver installation package
- Extract files related to your host PC
- Follow the Set Up wizard instructions

2 Function Classification

Power Supply Modules LabVIEW Instrument Driver Vis are divided into 5 groups:















• Device Initialization/Termination VI's

CAEN PSM.Ivlib:Initialize.vi

CAEN PSM.Ivlib:OpenBoard.vi

CAEN PSM.lvlib:Close.vi

• Configuration VI's

CAEN PSM.Ivlib:Configure VSET.vi

- CAEN PSM.IvI ib:Configure TRIP.vi
- CAEN PSM.Ivlib:Configure MAXV.vi
- CAEN PSM.Ivlib:Configure ISET.vi
- CAEN PSM.Ivlib:Configure RAMP UP.vi
- CAEN PSM.Ivlib:Configure RAMP DOWN.vi
- CAEN PSM.Ivlib:Configure POWER DOWN.vi
- CAEN PSM.Ivlib:Configure IMON RANGE.vi
- CAEN PSM.Ivlib:Configure INTERLOCK Mode.vi
- Action/Status VI's

CAEN PSM.IvI ib:Channel Power Enable.vi CAEN PSM.IvI ib:Channel Status.vi CAEN PSM.IvI ib:Clear alarm signal.vi CAEN PSM.IvI ib:Board Alarm Status.vi CAEN PSM.IvI ib:INTERLOCK Status.vi

- CAEN PSM.Ivlib:Control Mode.vi
- CAEN PSM.Ivlib:Local Bus Termination.vi
- Data VI's

CAEN PSM.Ivlib:Read out VMON.vi CAEN PSM.Ivlib:Read out IMON.vi

CAEN PSM.Ivlib:Read out VSET.vi CAEN PSM.Ivlib:Read out ISET.vi CAEN PSM.Ivlib:Read out MAXVSET.vi CAEN PSM.Ivlib:Read out TRIP.vi CAEN PSM.Ivlib:Read out RAMP UP.vi CAEN PSM.Ivlib:Read out RAMP DOWN.vi CAEN PSM.Ivlib:Read out POWER DOWN.vi CAEN PSM.Ivlib:Read out POURRITY.vi CAEN PSM.Ivlib:Read out INTERLOCK Mode.vi

• Utility VI's

CAEN PSM.Ivlib:ModuleInfo.vi CAEN PSM.Ivlib:Debug Command.vi

Data types

Cluster (error codes)
Cluster (various)
Cluster (numeric)
Input / Output name
Boolean
String
String
32bit integer
32bit unsigned integer numeric
16bit unsigned integer numeric
8-bit unsigned integer numeric
Single-precision, floating-point numeric
Double-precision, floating-point numeric

3 Function Description

The present sections describe in detail the **Power Supply Modules LabVIEW Instrument Driver**; more details about parameters description and ranges can be found on the Power Supply Modules User's Manual, as well as the required hardware configuration.

Iniatilize and Close VI's

Initialize.vi

Connector Dane

Establishes communication with the. Therefore, call this VI before calling other instrument driver VIs for this instrument. Generally, you need to call the Initialize VI only once at the beginning of an application.

Serial (Configura	
VICA	control n	
VISATE	sourcen	
erro	r in (no e	rror)
Controls	and Indica	ators
	error in (no error) can accept error information wired from VIs previously called. Use this information to
	decidei	f any functionality should be bypassed in the event of errors from other VIs.
	Right-cli	ck the error in control on the front panel and select Explain Error or Explain Warning from the
	shortcut	menu for more information a bout the error.
	TF	status is TRUE (X) if a n 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.
	132	code is the error or warningcode.
		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 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.
	_	
1/0	VISA ¹ res	source name Specifies which instrument to use. Instruments that are powered on and connected
	to your c	omputer are visible in the VISA resource name pull-down menu. Select the resource name from
	the VISA	resource name pull-down menu.
	Example	S:
	Referto	the LabVIEW Help for more information about specifying a VISA resource name
	Refer to	
906	Serial Co	nfiguration This control sets the settings that will be used if initializing a device with a serial
	interface	е.
	These se	ttings must match those on the actual instrument.
	U32	Baud Rate Specifies the rate at which data is transmitted across the serial interface.
	U16	Parity Specifies which kind of parity is used for error checking.

¹ Virtual Instrument Software Architecture, commonly known as VISA, is a widely used I/O API in the test and measurement (T&M) industry for communicating with instruments from a PC. VISA is an industry standard implemented by several T&M companies. The VISA standard includes specifications for communication with resources (usually, but not always, instruments) over T&M-specific I/O interfaces such as GPIB and VXI. There are also some specifications for T&M-specific protocols over PC-standard I/O, such as HiSLIP or VXI-11 (over TCP/IP) and USBTMC (over USB).

U16

Data Bits Specifies the number of bits used for data transmission.

U16

Stop Bits Specifies the number of stop bits in each frame.

Flow Control Specifies the protocol that is used a cross the interface for data transmission.

24

error out passes error or warning information out of a VI to be used by other VIs. Right-dick the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information a bout the error.

TF

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

132

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

Abc

source describes the origin of the error or warning. Right-click the **error out** control on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.

VISA resource name out A copy of the reference to the instrument in use. The reference to the resource name is created in the Initialize VI. Wire the VISA resource name out terminal of the Initialize VI to subsequent VISA resource name input terminals. You chain instrument driver VIs together by wiring the VISA resource name out terminal to subsequent VISA resource name input terminals.

OpenBoard.vi

This function allows to open the device. Therefore, call this VI after calling Initialize.vi. You need to call this function more times if you use several boards in daisy chain.

Connector Pane	
VISA resource name	BoardHandle
Board Address	arror out
error in (no error) 🔜	

```
Controls and Indicators
```

Board Address is the Local Bus address for remote communication (0÷31). This value is programmed locally on the board.

error in (no error) 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 a bout the error.

status is TRUE (X) if a n 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.

[132] 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 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.



VISA resource name is the reference to the resource name is created in the Initialize VI

BoardHandle is a reference to an open board. Wire the BoardHandle terminal of the OpenBoard VI to subsequent BoardHandle input terminals.

You can chain Library VIs together by wiring the BoardHandle out terminal to subsequent Board Handle input terminals.

1/0	VISA resource name
U 8	Board address
U 8	NChannels
error out Right-cli shortcut	: passes error or warning information out of a VI to be used by other VIs. ck the error out indicator on the front panel and select Explain Error or Explain Warning from the menu for more information a bout the error.
) TF	status is TRUE (X) if a nerror 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.
132	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.
Pabe	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.

Close.vi

This function terminates the software connection to the instrument.

```
Connector Pane
```

VISA resource name

error in (no error) ----- error out

Controls and Indicators

VISA resource name A reference to the instrument in use. The reference to the resource name is created in the Initialize VI. Therefore, before calling this VI, you need to call the Initialize VI. To run this VI interactively, select the previously initialized resource name from the pull-down menu. To run this VI programmatically, wire the VISA resource name out terminal of the Initialize VI to subsequent VISA resource name input terminals. You chain instrument driver VIs together by wiring the VISA resource name out terminal to subsequent VISA resource name input terminals.

error in (no error) 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 a bout the error.

TFI

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.

132

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 describes the origin of the error or warning. Right-dick 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.



error out passes error or warning information out of a VI to be used by other VIs. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.



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



code is the error or warning code.

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

source describes the origin of the error or warning. Right-click the **error out** control on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.

Configuration VI's

Confi	gurell	MON RANGE.vi	
This function allows to enable Current Monitor Zoom 10x (optional)			
Connect All C	Connector Pane		
Bo	oardHand	BoardHandle out	
(IMon ra	Channel (ange (LOV	0)RANGERANGE error out	
errori	n (no erro	r)	
Controls	and Indic	ators	
	BoardHa	andle is a reference to an open board	
	1/0	VISA resource name	
	U8	Board address	
	U8	NChannels	
abc	IMon ra	nge (LOW) Current Monitor Zoom 10x (optional). The admitted values are: HIGH or LOW	
	error in	(no error) can accept error information wired from VIs previously called. Use this information to	
	decidei Right-cl	f any functionality should be bypassed in the event of errors from other Vis. ick the error in control on the front panel and select Explain Error or Explain Warning from the	
	shortcu	t menu for more information a bout the error.	
	TFI	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.	
	1321	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.	
		course describes the origin of the error or we might	
	abc	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.	
U8 I	Channel	(0) : channel number; meaningless if All Channels is set to TRUE; Default 0	
TF	All Channels (F): if TRUE setting is extended to all channels; default: FALSE		
	error ou	t passes error or warning information out of a VI to be used by other VIs.	
	Right-cl shortcu	ick the error out indicator on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.	
	TF	status is TRUE (X) if a nerror 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.	
	132	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.	
	babc	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.	

	BoardHandle out	
	1/0	VISA resource name
	U 8	Board address
	U 8	NChannels
Confi	gurell	NTERLOCK Mode.vi
This fun Connecto	ction allov or Pane	vs to select Interlock logic
Boa	rdHandle	BoardHandle out
Interio error in	(no error)	error out
Controls	and Indic	ators
200	error in decide i	(no error) can accept error information wired from VIs previously called. Use this information to fany functionality should be bypassed in the event of errors from other VIs
	Right-cli shortcut	ick the error in control on the front panel and select Explain Error or Explain Warning from the timenu for more information about the error.
	TF	status is TRUE (X) if a nerror 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.
	132	code is the error or warning code.
		Right-click the error in control on the front paneland select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	abc	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.
abc	Interlock	mode is the logic of Interlock. The admitted values are: OPEN or CLOSE
	BoardHa	ndle is a reference to an open board
	1/0	VISA resource name
	U8	Board address
	U8	NChannels
	error out Right-d shortcut	t passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.
	TF	status is TRUE (X) if a nerror occurred or FALSE (checkmark) to indicate a warning or that no error
		Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	132	code is the error or warning code.
		Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	abc	source describes the origin of the error or warning.
		Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.





U8 **Board address**

U8 NChannels

Configure ISET.vi

This function allows to configure Iset

Connector Pane



Con 5

trols	s and Indicators		
	error in (no error) can accept error information wired from VIs previously called. Use this information to		
	Right-click the error in control on the front nanel and select Explain Error or Explain Warning from the		
	shortcut menu for more information about the error.		
	TF	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.	
	132	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.	
	<u>abc</u>	source describes the origin of the error or warning. Right-click the error in control on the front paneland select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
i I	Current	Limit (0.00 uA) Current Limit programmed value	
	BoardHa	andle is a reference to an open board	
	1/01	VISA resource name	
	U8	Board address	
	U8	NChannels	

U8 | Channel (0) channel number; meaningless if All Channels is set to TRUE; Default 0

TFI All Channels (F): if TRUE setting is extended to all channels; default: FALSE

error out passes error or warning information out of a VI to be used by other VIs. Right-dick the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.

TF

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

132 code is the error or warning code. Right-click the error out 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.

NetworkSourcedescribes the origin of the error or warning.Right-click the error outcontrol on the front panel and select Explain Error or Explain Warningfrom the shortcut menu for more information about the error.



Configure MAXV.vi This function allows to configure Software VMax value **Connector Pane** All Channels (F) BoardHandle BoardHandle out 5**⊃**∨ Channel (0) error out Voltage Max (0.0 V) error in (no error) **Controls and Indicators** error in (no error) can accept error information wired from VIs previously called. Use this information to decide if any functionality should be by passed 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. TFI 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. 132 **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 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. U16 Voltage Max (0.0 V) Absolute maximum High Voltage level that the channel is allowed to reach BoardHandle is a reference to an open board I/0 VISA resource name U8 | **Board address** U8 | **NChannels** U8 | Channel (0) channel number; meaningless if All Channels is set to TRUE; Default 0 TFF All Channels (F): if TRUE setting is extended to all channels; default: FALSE error out passes error or warning information out of a VI to be used by other VIs. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error. TF status is TRUE (X) if an error occurred or FALSE (checkmark) to indicate a warning or that no error

Power Supply Modules LabVIEW Instrument Driver

occurred.

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



code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.

source describes the origin of the error or warning. abc Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.

...... BoardHandle out

1/0 VISA resource name

U8 **Board address**

U8 **NChannels**

Configure POWER DOWN.vi

This function allows to configure Power Down mode





Controls and Indicators



1/0 VISA resource name



U8 | **NChannels**



Power down (KILL) Power Down mode after channel TRIP. The admitted values are: RAMP or KILL abel

error in (no error) can a ccept error information wired from VIs previously called. Use this information to decide if any functionality should be by passed 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 a bout the error.

Г	T	-	7
IL.			

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.



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 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.



Channel (0) channel number; meaningless if All Channels is set to TRUE; Default 0

TFI All Channels (F): if TRUE setting is extended to all channels; default: FALSE



Board address

U8 |

	U8	NChannels	
U8	Channel	(0)	
TFI	All Channels (F): if TRUE setting is extended to all channels; default: FALSE		
	error ou Right-cl shortcu	t passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.	
) TF	status is TRUE (X) if a n error occurred or FALSE (checkmark) to indicate a warning or that no error occurred. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	Pabe	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	BoardHa	indle out	
	1/0	VISA resource name	
	U8	Board address	
	U8	NChannels	
Confi	gure R	AMP UP.vi	
Confi This fun Connect	gure R	AMP UP.vi ws to configure Voltage Ramp Up rate	
Confi This fun Connect	gure R action allow or Pane All Chan	AMP UP.vi ws to configure Voltage Ramp Up rate nels (F)	
Confi This fun Connect	gure R action allow or Pane All Chan Board Char	AMP UP.vi ws to configure Voltage Ramp Up rate nels (F) Handle nnel (0)	
Confi This fun Connect	gure R action allow or Pane All Chan Board Char a ramp up error in (no	AMP UP.vi ws to configure Voltage Ramp Up ra te nels (F) Handle nnel (0) (0 V/s) b error out b error out	
Confi This fun Connect Voltage E	gure R action allow or Pane All Chan Board Char tramp up error in (no	AMP UP.vi ws to configure Voltage Ramp Up rate nels (F) Handle to error out to error) Handle error out to error)	
Confi This fun Connect Voltage e Controls	gure R action allow or Pane All Chan Board Char e ramp up error in (no error in (no error in (no	AMP UP.vi ws to configure Voltage Ramp Up rate nels (F) Handle mel (0) (0 V/s) error out o error) ators (no error) can a ccept error information wired from VIs previously called. Use this information to fore from the previously called. Use this information to	
Confi This fun Connect Voltage e Controls	gure R action allow or Pane All Chan Board Char e ramp up error in (no and Indic error in decide i Right-cl	AMP UP.vi ws to configure Voltage Ramp Up rate nels (F) Handle nel (0) (0 V/s) error out error out ators (no error) can accept error information wired from VIs previously called. Use this information to f any functionality should be bypassed in the event of errors from other VIs. ick the error in control on the front panel and select Explain Error or Explain Warning from the	
Confi This fun Connect Voltage e Controls	gure R action allow or Pane All Chan Board Char e ramp up error in (no and Indic error in decide i Right-cl shortcu	AMP UP.vi ws to configure Voltage Ramp Up rate nels (F) Handle or error out (0 V/s) error out error out ators (no error) can a ccept error information wired from VIs previously called. Use this information to f any functionality should be bypassed in the event of errors from other VIs. ick the error in control on the front panel and s elect Explain Error or Explain Warning from the t menu for more information a bout the error.	
Confi This fun Connect Voltage e Controls	gure R action allow or Pane All Chan Board Char e ramp up error in (no and Indic error in decide i Right-cl shortcu	AMP UP.vi ws to configure Voltage Ramp Up rate mels (F) Handle unel (0) (0 V/s) error out error out o error) can accept error information wired from VIs previously called. Use this information to f any functionality should be bypassed in the event of errors from other VIs. ick the error in control on the front panel and select Explain Error or Explain Warning from the t menu for more information about the error. status is TRUE (X) if an error occurred or FALSE (checkmark) to indicate a warning or that no error occurred	
Confi This fun Connect Voltage e Controls	gure R action allow or Pane All Chan Board Char ramp up error in (ne and Indic error in decide i Right-cl shortcu	AMP UP.vi ws to configure Voltage Ramp Up rate mels (F) Handle (D) (O V/s) error out error out error out error out ators (no error) can a ccept error information wired from VIs previously called. Use this information to f any functionality should be bypassed in the event of errors from other VIs. ick the error in control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error. 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.	
Confi This fun Connect Voltage e Controls	gure R action allow or Pane All Chan Board Char aramp up error in (no and Indic error in decide i Right-cl shortcu	AMP UP.vi ws to configure Voltage Ramp Up rate nels (F) Handle or Handle (O) (O V/s) error out error out error out error out error out error) can accept error information wired from VIs previously called. Use this information to f any functionality should be bypassed in the event of errors from other VIs. it che error in control on the front panel and select Explain Error or Explain Warning from the tmenu for more information about the error. 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.	
Confi This fun Connect Voltage e Controls	gure R action allow or Pane All Chan Board Char aramp up error in (no and Indic error in decide i Right-cl shortcu IIII	AMP UP.vi ws to configure Voltage Ramp Up rate mels (F) Handle (0 U/s) a error out a error out a error) can accept error information wired from VIs previously called. Use this information to fany functionality should be bypassed in the event of errors from other VIs. ick the error in control on the front panel and select Explain Error or Explain Warning from the t menu for more information about the error. 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 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 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. 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.	

	BoardHandle	
	1/01	VISA resource name
	U8	Board address
	U8	NChannels
U8	Channel	(0) channel number; meaningless if All Channels is set to TRUE; Default 0
TF	All Chan	nels (F): if TRUE setting is extended to all channels; default: FALSE
	error ou Right-d shortcu	t passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.
	TF	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 control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	labc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	BoardHa	indle out
	1/0	VISA resource name
	U8	Board address
	U 8	NChannels
Confi	gure T	RIP.vi
This fun	ction allow	vs to configure Ouput Trip time
connecto	Jr Pane	



Controls and Indicators

error in (no error) 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 a bout the error.



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 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 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.



Controls and Indicators

error in (no error) ·

error in (no error) 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 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.

	1321	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.		
	<u>abc</u>	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.		
DBL	Voltage	Level (0.0 V) High Voltage programmed value		
533	BoardHa	Indle is a reference to an open board		
	1/01	VISA resource name		
	U8	Board address		
	U8	NChannels		
U8	Channel	(0) channel number; meaningless if All Channels is set to TRUE; Default 0		
TF	All Chan	All Channels (F): if TRUE setting is extended to all channels; default: FALSE		
	error out passes error or warning information out of a VI to be used by other VIs. Right-dick the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information a bout the error.			
	F	<pre>status is TRUE (X) if a n error occurred or FALSE (checkmark) to indicate a warning or that no error occurred. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.</pre>		
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.		
	Abc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.		
	BoardHa	indle out		
	1/0	VISA resource name		
	U 8	Board address		
	U8	NChannels		

Action and Status VI's

Board	Alarm	Status.vi		
This fund Connecto	ction repo or Pane	rts board alarm status		
Boai	rdHandle	Board Handle out		
error in	(no error)	Board status (decimal value)		
Controls	ls and Indicators			
	error in (decideif Right-cli shortcut	no error) can accept error information wired from VIs previously called. Use this information to any functionality should be bypassed in the event of errors from other VIs. ck the error in control on the front panel and select Explain Error or Explain Warning from the menu for more information a bout the error.		
	TF	status is TRUE (X) if a nerror 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.		
	132	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.		
	<u>abc</u>	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.		
	BoardHa	andle is a reference to an open board		
	1/01	VISA resource name		
	U8	Board address		
	U8	NChannels		
	error out	passes error or warning information out of a VI to be used by other VIs.		
	Right-cli shortcut	ck the error out control on the front panel and select Explain Error or Explain Warning from the menu for more information a bout the error.		
) TF	status is TRUE (X) if a nerror occurred or FALSE (checkmark) to indicate a warning or that no error occurred. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.		
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.		
) abc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.		
	BoardHa	ndle out		
	1/0	VISA resource name		
	U8	Board address		

NChannels

Board status is a cluster that reports a larm status of the channels or board.

CHO if TRUE Ch0 in Alarm status

ETF CH1 if TRUE Ch1 in Alarm status

ETF CH2 if TRUE Ch2 in Alarm status

- **ETF** CH3 if TRUE Ch3 in Alarm status
- **PWFAIL** if TRUE Board in POWER FAIL
- **OVP** if TRUE Board in OVER POWER
- **HVCKFAIL** if TRUE Internal HV Clock FAIL

Board status (decimal value)

Channel Power Enable.vi

Enables or disables the output of the power supply.



All Channels (F): if TRUE setting is extended to all channels; default: FALSE

	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 a bout the error.		
	TF	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.	
	132	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.	
	labc	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.	
	BoardHa	andle out	
	1/0	VISA resource name	
	U 8	Board address	
	▶ U8	NChannels	
Chan	nel Sta	tus.vi	

Returns status for channels or a desired channel.



Controls and Indicators

error in (no error) can accept error information wired from VIs previously called. Use this information to decide if any functionality should be by passed 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.

	т	F	I
-	_	_	=

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.

132

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

Ι

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.



BoardHandle is a reference to an open board

1/01	VISA resource name
U8	Board address

U8 | **NChannels**

U8	Channel	channel r	number; set is required if All Channels is set to FALSE	
TF	All Channels (T): if FALSE, the output will refer only to the desired channel; default: TRUE			
	error out passes error or warning information out of a VI to be used by other VIs.			
	Right-cli shortcut	ck the err o menu for	or out control on the front panel and select Explain Error or Explain Warning from the more information a bout the error.	
	TF	status is occurrec Right-cli	TRUE (X) if a n error occurred or FALSE (checkmark) to indicate a warning or that no error d. ck the error out control on the front panel and select Explain Error or Explain Warning	
		from the	e shortcut menu for more information about the error.	
	132	code is t Right-cli from the	the error or warning code. Ick the error out control on the front panel and select Explain Error or Explain Warning Is shortcut menu for more information about the error.	
	labc	source d Right-cli from the	escribes the origin of the error or warning. ck the error out control on the front panel and select Explain Error or Explain Warning e shortcut menu for more information about the error.	
	BoardHa	ndle out		
	1/0	VISA res	ource name	
	U 8	Board ac	ddress	
	U 8	NChanne	ls	
	Channel the clust status of Channel	Status Ar i ter with th f the desir Status	r ay: a rray of cluster with status of the channels. By the Index Array Function you can get le status for each channel. If All Channels is FALSE the a rray contains one cluster with red channel	
		TF	ON : indicates whether the channel is powered	
		F	RUP : indicates whether the channel is performing a voltage ramp-up	
		F	RDW : indicates whether the channel is performing a voltage ramp-down	
		F	OVC: indicates whether the channel is Over Current	
		F	OVV : indicates whether the channel is Over Voltage	
		F	UNV: indicates whether the channel is Under Voltage	
		F	MAXV: indicates whether the channel is in MAXV protection	
		F	TRIP indicates whether the channel wills hutdown due to the trip time	
		F	OVP : indicates whether the channel is Over Power Max	
		F	OVT : indicates whether the channel is Over Temperature	
		F	DIS : indicates whether the channel is disables	
		F	KILL: indicates whether the channel is in KILL via frontal panel	
		F	ILK: indicates whether the channelis in INTERLOCK via frontal panel	
) TF	NOCAL: indicates there is a calibration error	

Clear alarm signal.vi			
Resets th	ne status c	of alarms that occurred	
Connecto Boar	or Pane rdHandle	BoardHandle out	
chorm	(no choi)		
Controls	and Indica error in (decide if Right-cli shortcut	ators no error) can accept error information wired from VIs previously called. Use this information to Fany functionality should be bypassed in the event of errors from other VIs. ck the error in control on the front panel and select Explain Error or Explain Warning from the menu for more information a bout the error.	
	TF	status is TRUE (X) if a n 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.	
	132	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.	
	<u>abc</u>	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.	
	BoardHandle is a reference to an open board		
	1/01	VISA resource name	
	U8	Board address	
	U8	NChannels	
	error out Right-cli shortcut	: passes error or warning information out of a VI to be used by other VIs. ck the error out control on the front panel and select Explain Error or Explain Warning from the menu for more information a bout the error.	
) TF	status is TRUE (X) if a nerror occurred or FALSE (checkmark) to indicate a warning or that no error occurred. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	abc	source describes the origin of the error or warning.	
		Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	BoardHa	ndle out	
	1/0	VISA resource name	
	U 8	Board address	
	U 8	NChannels	

Contr	ol Moc	de.vi
This func Connecto	ction allow r Pane	vs to select control mode
Boar	dHandle	BoardHandle out
error in ((no error)	Bemote enable?
		error out
Controls	and Indica error in (decideif Right-cli shortcut	ators no error) can accept error information wired from VIs previously called. Use this information to f any functionality should be bypassed in the event of errors from other VIs. ck the error in control on the front panel and select Explain Error or Explain Warning from the menu for more information a bout the error.
	TF	status is TRUE (X) if a nerror 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.
	1321	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.
	<u>abc</u>	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.
	BoardHa	ndle is a reference to an open board
	1/01	VISA resource name
	U8	Board address
	U8	NChannels
	error out Right-cli shortcut	passes error or warning information out of a VI to be used by other VIs. ck the error out control on the front panel and select Explain Error or Explain Warning from the menu for more information a bout the error.
) TF	status is TRUE (X) if a nerror occurred or FALSE (checkmark) to indicate a warning or that no error occurred. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
) abc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	BoardHa	ndle out
	1/0	VISA resource name
	U 8	Board address
	08	NChannels
abc	Control r	node can be the string LOCAL or REMOTE and indicates the Control mode set for the board
TF	Remote	enable is TRUE if Remote Control is enabled

INTERLOCK Status.vi			
This fund	ction retur	ns interlock status	
Connecto	r Pane	Describing of the set	
Boal	rdHandle	Part Board Handle out	
error in	(no error)		
Controls	and Indica	ators	
	error in (no error) can accept error information wired from VIs previously called. Use this information to	
	Right-cli	any functionality should be bypassed in the event of errors from other vis.	
	shortcut	menu for more information a bout the error.	
	TFI	status is TRUE (X) if a nerror 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.	
	132	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 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.	
	BoardHandle is a reference to an open board		
	1/01	VISA resource name	
	U8	Board address	
	U8	NChannels	
	error out	passes error or warning information out of a VI to be used by other VIs.	
	Right-cli	ck the error out control on the front panel and select Explain Error or Explain Warning from the	
	shortcut	menu for more information a bout the error.	
	TE	status is TRUE (X) if a nerror occurred or FAUSE (checkmark) to indicate a warning or that no error	
		occurred.	
		Right-click the error out control on the front panel and select Explain Error or Explain Warning	
		from the shortcut menu for more information about the error.	
	132	code is the error or warning code.	
		Right-click the error out control on the front panel and select Explain Error or Explain Warning	
		from the shortcut menu for more information about the error.	
		course describes the origin of the error or warping	
	Fabr	Right-click the error out control on the front panel and select Explain Error or Explain Warning	
		from the shortcut menu for more information about the error.	
EB-T-1	Roardua	ndla aut	
	Dualuna		
	1/0	VISA resource name	
	U 8	Board address	
	U 8	NChannels	
TF	Interlock	status indicates the INTERLOCK status; if TRUE the board is in the INTERLOCK	

Local	Bus Te	ermination.vi	
This fun	ction re tu	rns bus termination status	
Connecto	or Pane	Benellin out	
DUd		Local Bus Termination ON?	
error in	(no error)	
Controls	and India	ators	
	error in	(no error) can accept error information wired from VIs previously called. Use this information to	
	decidei	f 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		
	SHOILCU		
	TF	status is TRUE (X) if an error occurred or FALSE (checkmark) to indicate a warning or that no error	
		occurred. Bight-click the error in control on the front naneland select Explain Error or Explain Warning	
		from the shortcut menu for more information about the error.	
	132	code is the error of warning code. Right-click the error in control on the front panel and select Explain Error of Explain Warning	
		from the shortcut menu for more information about the error.	
		course describes the origin of the organ on warping	
	aber	source describes the origin of the error of 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.	
	BoardHandle is a reference to an open board		
	1/01	VISA resource name	
	U8	Board address	
	U8	NChannels	
NOT	orror out	t package error erwarning information out of a VI to be used by other VIs	
	Right-cli	ick the error out control on the front panel and select Explain Error or Explain Warning from the	
	shortcut	t menu for more information a bout the error.	
	NTE	status is TRUE (X) if an error occurred or FAUSE (checkmark) to indicate a warning or that no error	
	<u> </u>	occurred.	
		Right-click the error out control on the front panel and select Explain Error or Explain Warning	
		from the shortcut menu for more information about the error.	
	132	code is the error or warning code.	
		Right-click the error out control on the front panel and select Explain Error or Explain Warning	
		from the shortcut menu for more information about the error.	
	abc	source describes the origin of the error or warning.	
		Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error	
	BoardHa	indle out	
	1/0	VISA resource name	
	U 8	Board address	
	U 8	NChannels	
TF	Local Bu	s Termination ON If TRUE the Local Termination is ON	

Data VI's

Read out IMON.vi			
This fun Connecto All Cha	ction retu or Pane annels (T)	rns I mon va lue	
	Channe	I	
Boa	rdHandle	BoardHandle out	
error in	(no error	IMon values (uA)	
9	jet more	IMon constants	
-		error out	
Controls	s and Indicators error in (no error) can a ccept 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		
	Shortcu	t menu for more information about the error.	
	TF	status is TRUE (X) if a n 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.	
	132	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.	
	abci	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.	
	BoardHa	Indle is a reference to an open board	
	1/0	VISA resource name	
	U8 I	Board address	
	U8	NChannels	
UB	Channel channel number; set is required if All Channels is set to FALSE;		
TF	All Channels (T) if FALSE, the output will refer only to the desired channel; default: TRUE;		
TFI	get more? If TRUE, get more constant information releated a this paramter and return these in acluster . The default is FALSE. If is TRUE the VI require more time to execution		
	error ou Right-cli shortcut	t passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.	
	TF	status is TRUE (X) if a n error occurred or FALSE (checkmark) to indicate a warning or that no error occurred. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	abc	source describes the origin of the error or warning.	

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

	BoardHa	ndle out		
	1/0	VISA resource name		
	▶ U8	Board address		
	U 8	NChannels		
(DBL)	IMon va Channel	lues (uA) a rray of values. By the Index Array Function you can get the value for each channel. If All Is is FALSE the a rray contains one element with value of the desired channel. IMon value		
[205]	IMon co	nstants arary a rray of cluster with constant information for this parameter		
	205	IMon constants		
		Range		
		Digits of precision		
Read	out IN	TERLOCK Mode.vi		
This fun	ction re tu	rns i nterlock mode		
Connecto Boar error in	or Pane rdHandle (no error) BoardHandle out)		
C				
	and Indic error in decidei Right-cli shortcut	r in (no error) can accept error information wired from VIs previously called. Use this information to de if any functionality should be bypassed in the event of errors from other VIs. It-click the error in control on the front panel and select Explain Error or Explain Warning from the rtcut menu for more information about the error.		
	TF	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.		
	1321	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 describes the origin of the error or warning. Right-click the error in control on the front paneland select Explain Error or Explain Warning from the shortcut menu for more information about the error.		
	BoardHa	ndle is a reference to an open board		
	1/01	VISA resource name		
	U8	Board address		
	U8	NChannels		
	error ou Right-cli shortcut	t passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.		

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



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

source describes the origin of the error or warning. Right-click the **error out** control on the front panel and select **Explain Error** or **Explain Warning** from the shortcut menu for more information about the error.

BoardHandle out

- VISA resource name
- **Board address**
- **VChannels**
- Pabe Interlock Mode is the logic of Interlock. The values can be: OPEN or CLOSE



Controls and Indicators

error in (no error) 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 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.

[132] code is the error or warningcode.

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** 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.
- **BoardHandle** is a reference to an open board





NChannels

Channel channel number; set is required if All Channels is set to FALSE;

All Channels (T): if FALSE, the output will refer only to the desired channel; default: TRUE;

U8

TFI



get more? If TRUE, get more constant information releated a this paramter and return these in acluster. If is TRUE the VI require more time to execution.

	error ou Right-cl shortcu	t passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.
	TF	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 control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	Abc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	BoardHa	indle out
	1/0	VISA resource name
	U8	Board address
	• U8	NChannels
[DBL]	ISet valı Channe ▶DBL	Jes (uA) a rray of values. By the Index Array Function you canget the value for each channel. If All Is is FALSE the array contains one element with value of the desired channel ISet value
[908]	ISet con	stants array of cluster with constant information for this parameter
	2 06	ISet constant
		IDBL Min
		DBL Max
		Digits of precision
Read	out M	AXVSET.vi
This fun	ction retu	rns Software MaxV value
All Ch	annels (T)



Controls and Indicators error in (no er

error in (no error) 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 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.

	1321	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 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.
	BoardHa	ndle is a reference to an open board
	1/0	VISA resource name
	U8	Board address
	U8	NChannels
U8	Channel	channel number; set is required if All Channels is set to FALSE;
TFI	All Chan	nels (T) : if FALSE, the output will refer only to the desired channel; default: TRUE;
TF	get more The defa If is TRU	e? If TRUE, get more constant information releated a this paramter and return these in acluster . ault is FALSE. IE the VI require more time to execution.
	error ou Right-cli shortcut	t passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.
	TF	status is TRUE (X) if a n error occurred or FALSE (checkmark) to indicate a warning or that no error occurred. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	abc	source describes the origin of the error or warning.
		Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	BoardHa	ndle out
	1/0	VISA resource name
	U 8	Board address
	U 8	NChannels
[132]	Voltage If All Cha 132	max values (V) a rray of values. By the Index Array Function you can get the value for each channel. annels is FALSE the array contains one element with value of the desired channel Voltage max value
[906]	VMax co	nstants array of cluster with constant information for this parameter
	2 05	VMax constant
		Min
		Max Max
		Digits of precision

Read	out PC	DLARITY.vi		
This fun	ctionretu	rns channels polarity		
Connector Pane				
All Cha	Channel (1))		
Boa	rdHandle	BoardHandle out		
error in		Polarity values		
enorm	(no enoi)	error out		
Controls	and Indic	ators		
	error in	(no error) can accept error information wired from VIs previously called. Use this information to		
	decidei	f any functionality should be by passed in the event of errors from other VIs.		
	Right-cli	ck the error in control on the front panel and select Explain Error or Explain Warning from the		
	Shortcui	. menu for more information a bout the error.		
	TFI	status is TRUE (X) if an error occurred or FALSE (checkmark) to indicate a warning or that no error		
		occurred.		
		from the shortcut menu for more information about the error.		
	132	code is the error or warning code.		
		Right-click the error in control on the front panel and select Explain Error or Explain Warning		
	abc	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		
	BoardHa	ndle is a reference to an open board		
	1/0	VISA resource name		
	U8	Board address		
	U8	NChannels		
U8	Channel	channel number; set is required if All Channels is set to FALSE;		
TF	All Chan	nels(T): if FALSE, the output will refer only to the desired channel; default: TRUE;		
NO-1	orror out	t passas array anwarping information out of a VII to be used by other VIIs		
Right-dick the error out control on the fu		ick the error out control on the front panel and select Explain Error or Explain Warning from the		
	shortcut	t menu for more information a bout the error.		
	NTE	status is TRUE (Y) if a nerror accurred or EALSE (sheekmark) to indicate a warping or that no error		
		occurred.		
		Right-click the error out control on the front panel and select Explain Error or Explain Warning		
		from the shortcut menu for more information about the error.		
	132	code is the error or warning code.		
		Right-click the error out control on the front panel and select Explain Error or Explain Warning		
		from the shortcut menu for more information about the error.		
	abc	source describes the origin of the error or warning.		
		Right-click the error out control on the front panel and select Explain Error or Explain Warning		
		from the shortcut menu for more information about the error.		
	BoardHa	ndle out		
	1/0	VISA resource name		
	U 8	Board address		

U8 NChannels

[abc] Polarity values

abc

Read	out PC	DWER DOWN.vi
This fun	ction retu	rns Power Down mode
All Cha	or Pane annels (T)	
D	Channe	
Boa	rdHandle	Power down values
error in	(no error)	DOWN
Controls	and Indic	ators
	error in (decide i	(no error) can accept error information wired from VIs previously called. Use this information to f any functionality should be by passed in the event of errors from other VIs.
	Right-cli	ick the error in control on the front panel and select Explain Error or Explain Warning from the
	shortcut	t menu for more information a bout the error.
	TF	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.
	132	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 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.
	BoardHa	ndle is a reference to an open board
	1/0	VISA resource name
	U8	Board address
	U8	NChannels
U8	Channel	channel number; set is required if All Channels is set to FALSE;
TF	All Chan	nels (T) : if FALSE, the output will refer only to the desired channel; default: TRUE;
	error out	t passes error or warning information out of a VI to be used by other VIs.
	Right-d shortcut	ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.
) TF	status is TRUE (X) if an error occurred or FALSE (checkmark) to indicate a warning or that no error
		Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	132	code is the error or warning code.
		Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	Dabc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning

from the shortcut menu for more information about the error.

	BoardHa	ndle out
	1/0	VISA resource name
	U 8	Board address
	U 8	NChannels
[abc]	Power d	own values
	labc	
Read	out RA	MP DOWN.vi
This fun Connecto All Cha	ction return or Pane annels (T)	rns Ramp Down rate
Boa	rdHandle	BoardHandle out
error in	(no error)	Ramp down values (V/s)
9	get more?	error out
Controls	and Indic error in (decidei Right-cli shortcut	ators (no error) can accept error information wired from VIs previously called. Use this information to f any functionality s hould be bypassed in the event of errors from other VIs. ck the error in control on the front panel and s elect Explain Error or Explain Warning from the menu for more information a bout the error.
	TF	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.
	132	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 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.
	BoardHa	ndle is a reference to an open board
	1/01	VISA resource name
	U8	Board address
	U8	NChannels
U8	Channel	channel number; set is required if All Channels is set to FALSE;
TF	All Chan	nels (T) : if FALSE, the output will refer only to the desired channel; default: TRUE;
TF	get more FALSE. If is TRU	e? If get more? is TRUE, get more information from a parameter return in a cluster . The default is E the VI require more time to execution.
	error ou Right-d shortcut	: passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the : menu for more information a bout the error.

	FTF.	 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 control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error. code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error. 	
) abc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	BoardHa	andle out	
	1/0	VISA resource name	
	U8	Board address	
	U 8	NChannels	
[132]	Ramp de	own values (V/s)	
	132		
[203]	Ramp de	own constants	
	205		
		DBL Min	
		DBL Max	
		Digits of precision	
Read	ou <u>t R</u> /	AMP UP.vi	
This fun	This function returns Ramp Up rate		



Controls and Indicators

error in (no error) 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 is TRUE (X) if a nerror 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.

132 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 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.

	BoardHandle is a reference to an open board		
	1/01	VISA resource name	
	U8	Board address	
	U8	NChannels	
U8	Channel	channel number; set is required if All Channels is set to FALSE;	
TF	All Chan	nels (T) : if FALSE, the output will refer only to the desired channel; default: TRUE;	
TF	get mor FALSE. If is TRU	e? If get more? is TRUE, get more information from a parameter return in a cluster . The default is E the VI require more time to execution.	
	error ou Right-d shortcu	t passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.	
	F TF	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 control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	Abc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.	
	BoardHa	indle out	
	1/0	VISA resource name	
	U8	Board address	
	▶ U8	NChannels	
[132]	Ramp u	o values (V/s)	
	132		
[em]	Ramp U	p constants	
	2 06		
		DBL Min	
		DBL Max	
		Digits of precision	

Read	out TR	lP.vi
This fun Connecto All Cha	ction retur or Pane annels (T)	rns Trip time
	Channe	
Boa	rdHandle	e Bill Bill BoardHandle out
error in	(no error)	Trip values (s)
9	get more?	
Controls	and Indic	ators
	error in	(no error) can accept error information wired from VIs previously called. Use this information to
	decidei	f any functionality should be bypassed in the event of errors from other VIs.
	shortcut	the error in control on the front panel and select Explain Error or Explain warning from the
	SHOILCUI	
	TF	status is TRUE (X) if a n 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.
	1221	code is the error or warning code
	192	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 describes the origin of the error or warning.
		Right-click the error in control on the front paneland select Explain Error or Explain Warning
- 1 11	BoardHa	ndle is a reference to an open board
	1/0	VISA resource name
	U8	Board address
	U8	NChannels
U8	Channel	channel number; set is required if All Channels is set to FALSE;
TF	All Chan	nels (T) : if FALSE, the output will refer only to the desired channel; default: TRUE;
TF	get more The defa	e? If TRUE, get more constant information releated a this paramter and return these in acluster . ault is FALSE.
	If is TRU	E the VI require more time to execution.
	error out	t passes error or warning information out of a VI to be used by other VIs.
	shortcut	t menu for more information a bout the error.
	TF	status is TRUE (X) if a nerror occurred or FALSE (checkmark) to indicate a warning or that no error
		occurred.
		Right-click the error out control on the front panel and select Explain Error or Explain Warning
		ווסות נורב אוסו נכער ווברוע דסר חוסרב חווסרוומנוסה מססער נורב בדוסר.
	132	code is the error or warning code.
		Right-click the error out control on the front panel and select Explain Error or Explain Warning
		from the shortcut menu for more information about the error.
	Pabel	source describes the origin of the error or warning
		Right-click the error out control on the front panel and select Explain Error or Explain Warning
		from the shortcut menu for more information about the error.

	BoardHandle out		
	1/0	VISA resource name	
	U8	Board address	
	U 8	NChannels	
(DBL)	Trip valu Channel DBL	es (s) a rray of values. By the Index Array Function you can get the value for each channel. If All s is FALSE the a rray contains one element with value of the desired channel Trip value	
[#06]	Trip cons	tants array of cluster with constant information for this parameter	
	205	Trip constant	
		Min	
		Max Max	
		Digits of precision	
Read	out VN	/ION.vi	
This fund Connector All Cha	ction retur or Pane annels (T) Channel rdHandle	rns VMon value BoardHandle out	
error in	(no error)	error out	
Controls	and Indica error in (decideif Right-cli shortcut	ators no error) can accept error information wired from VIs previously called. Use this information to f any functionality should be bypassed in the event of errors from other VIs. ck the error in control on the front panel and select Explain Error or Explain Warning from the emenu for more information a bout the error.	
	TF	status is TRUE (X) if a n 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.	
	132	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.	
	<u>abc</u>	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.	
	BoardHa	ndle is a reference to an open board	
	1/01	VISA resource name	
	U8	Board address	
	U8	NChannels	
U8	Channel	channel number; set is required if All Channels is set to FALSE;	
TF	All Chann	nels (T) : if FALSE, the output will refer only to the desired channel; default: TRUE;	

	error ou Right-d shortcu	t passes error or warning information out of a VI to be used by other VIs. ick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.
) TF	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 control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	labc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	BoardHa	indle out
	1/0	VISA resource name
	U 8	Board address
	U 8	NChannels
(DBL)	VMon va Channe	alues (V) a rray of values. By the Index Array Function you can get the value for each channel. If All Is is FALSE the a rray contains one element with value of the desired channel
Read	out VS	SET.vi
This fun Connecto All Cha	ction retu or Pane annels (T) Channe	rns VSet value
Boa	rdHandle	BoardHandle out
error in	(no error get more	VSet constants
Controls	and Indic error in decidei Right-cl shortcu	ators (no error) can accept error information wired from VIs previously called. Use this information to f any functionality s hould be bypassed in the event of errors from other VIs. ick the error in control on the front panel and s elect Explain Error or Explain Warning from the t menu for more information a bout the error.
	TF	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 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 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.

BoardHandle is a reference to an open board



VISA resource name

Board address

	U8	NChannels
U8	Channel	channel number; set is required if All Channels is set to FALSE;
TF	All Chan	nels (T) : if FALSE, the output will refer only to the desired channel; default: TRUE;
TF	get mor The def If is TRL	e? If TRUE, get more constant information releated a this paramter and return these in acluster . Fault is FALSE. JE the VI require more time to execution.
	error ou Right-c shortcu	t passes error or warning information out of a VI to be used by other VIs. lick the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.
) TF	status is TRUE (X) if a nerror occurred or FALSE (checkmark) to indicate a warning or that no error occurred. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	abc	source describes the origin of the error or warning.
		Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
	BoardHa	andle out
	1/0	VISA resource name
	U8	Board address
	U8	NChannels
(DBL)	Vset val Channe DBL	ues (V) a rray of values. By the Index Array Function you can get the value for each channel. If All Is is FALSE the a rray contains one element with value of the desired channel Vset value
[#05]	VSet cor	nstants array of cluster with constant information for this parameter
	205	VSet constant
		DBL Min
		Max Max
		Digits of precision

Utility VI's

This function can be used for debug purpose. This allows to prepare and forward a command and view the received response string
Connector Pane
All Channels (F)
Channel (0)
No Channel
BoardHandle
CMD - Command

BoardHandle CMD PAR VAL error in (no error)

Controls and Indicators

error in (no error) 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 a bout the error.

TFI

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.

132 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** 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.
- **BoardHandle** is a reference to an open board
 - I70 VISA resource name
 - Board address
 - U8 NChannels
- **Channel** channel number; set is required if All Channels is set to FALSE;
- **All Channels (T)**: if FALSE, the output will refer only to the desired channel; default: TRUE;
- **CMD** Command type: MON (monitor) or SET.
- **PAR** parameter to be monitor or set
- **VAL** If required, value to set
- **IFI** No Channel set TRUE for commands related to the module; FALSE for commands related to the channels
- error out passes error or warning information out of a VI to be used by other VIs.

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



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 control on the front panel and select Explain Error or Explain Warning

from the shortcut menu for more information about the error.

	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.							
Source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.								
	BoardHandle out							
	1/0	VISA resource name						
	U 8	Board address						
	U8	NChannels						
labc	val If exp	pected, the value field in the response						
labc	Response	e Response received from board						
abc	Comman	nd Command sent to board						
Modu	ile Info	o.vi						
This fun	ction retu	rns some information of the board						
Connecto Boar	or Pane rdHandle	BoardHandle out						
error in	(no error)) Il Odule Info						
<u>Contro</u> ls	and Indica	ators						
	error in (no error) can accept error information wired from VIs previously called. Use this information to decide if any functionality should be by passed 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							
		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.						
	132	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.						
	<u>abc</u>	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.						
	BoardHa	ndle is a reference to an open board						
	1/0	VISA resource name						
	U8	Board address						
	U8 I	NChannels						
	error out Right-cli shortcut	t passes error or warning information out of a VI to be used by other VIs. ck the error out control on the front panel and select Explain Error or Explain Warning from the t menu for more information a bout the error.						

TF	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 control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
132	code is the error or warning code. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
labc	source describes the origin of the error or warning. Right-click the error out control on the front panel and select Explain Error or Explain Warning from the shortcut menu for more information about the error.
BoardHa	ndle out
1/0	VISA resource name
▶ U8	Board address
▶ U8	NChannels
Module	Info is a cluster with some information on the board
abc	Name
abc	Num. Channels
abc	Firmware Release
labc	Serial Num.

4 Application Softwares

The present section describes two applications provided as examples of Power Supply Modules LabView Instrument Driver usage; they are provided both as excutable file and source code. In order to install them, follow these steps:

- have the Power Supply Modules LabView Instrument Driver installed
- go to CAEN web site in the "Software" a rea of a ny NIM/Desktop/Rack Progammable HV Power Supply page
- download the Power Supply Modules application related to your OS.
- unzip the downloaded package
- launch the Installation set up file
- follow the installer instructions

Power Supply Modules LabView Channel Output Setting

This is a very simple example that allows to set output voltage and current limits to all channels

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VISA resource name	Actual Voltage Level (V) 899,70 OVV?							
Channel Voltage Level (0.0 V) Channel 0 0	Actual Current Limit (uA)							
Current Limit (0 uA)	STOP OUTPUT							

In order to do this:

- Select the host port (VISA Resource Name)
- Select the Channel number
- Set Voltage and Current Software limits
- Set Output Voltage

The boxes on the right monitor Output values and signal possible OVC and OVV a larms The STOP button a llows to shut down the channel

The project layout of the PSM Channel Output Setting a pplication is the following:



Power Supply Modules LabView Control Software

This is a demo control software that allows to set and monitor, through a graphical interface, all the modules functional parameters. The application, though supporting 8 channels PSM's as well, allows to control only channels from 0 to 3.



Select the Board to communicate with, by setting the host port, the confirm with [CONNECT] in the "Connection box"



"Disconnect" button allows to exit the application. In order to set one parameter click on the "Channel button":



And the "Channel Settings" panel will open:

VSet			
5000	-		
ISet			
20,9	*		
VMax			
5600	*		
Trip			
10	*		
Ramp Down			
150	*		
Ramp Up			
150	*		

Enter the desired set value and confirm with [OK]

The "All Channels box" allows to perform group settings (VSET/ISET) and to turn all channels ON/OFF:

ALL CHANNELS								
VSET	ISET	ON	OFF					

It is also possible to load a configuration file with proper settings, through the relevant button: click it then browse and select the desired file (for example: *Configuration_N1470.ini*)



Configuration files shall have the following layout:

[Module Settings] ;Set Interlock mode (OPEN/CLOSED) BDILMKM = CLOSED [Channel Setting #00] VSET = 0.0 ISET = 3100.00 MAXV = 8100 RUP = 500 RDW = 500 RDW = 500 TRIP = 10.0 ;Set Power Down mode (RAMP/KILL) PDWN = KILL ;Set IMON RANGE (HIGH/LOW) IMRANGE = HIGH

[Channel Setting #01] VSET = 0.0ISET = 3100.00MAXV = 8100RUP = 500RDW = 500TRIP = 10.0;Set Power Down mode (RAMP / KILL) PDWN = KILL ;Set IMON RANGE (HIGH / LOW) IMRANGE = HIGH

[Channel Setting #02] VSET = 0.0ISET = 3100.00MAXV = 8100RUP = 500RDW = 500TRIP = 10.0;Set Power Down mode (RAMP / KILL) PDWN = KILL ;Set IMON RANGE (HIGH / LOW) IMRANGE = HIGH

[Channel Setting #03] VSET = 0.0ISET = 3100.00MAXV = 8100RUP = 500RDW = 500TRIP = 10.0;Set Power Down mode (RAMP / KILL) PDWN = KILL ;Set IMON RANGE (HIGH / LOW) IMRANGE = HIGH

The "Analog dashboard" allows to monitor the channel ramping up/down:



The "CHANNEL STATUS" box reports the status bits (coloured = Bit ON):

CHANNEL STATUS								
CH0 CH1 CH2 CH3								
ON								
OVC								
OVV								
UNV								
MAXV								
TRIP								
OVP								
OVT								
DIS								
KILL								
ILK								
NOCAL								

The "BOARD ALARM" box reports Alarm detected (coloured = alarm) and the CLEAR ALARM button performs a software Alarm condition removal



The lower panel reports a summary of all settings:

l		VSET (V)	ISET (uA)	MAXV (V)	RUP	RDW	TRIP (s)	PWDN		POLARITY
I				/	(v/s)	(V/S)	/	/	NAINGE	/
I	CH 0	5000.0	20.90	5600	150	150	10.00	KILL	HIGH	+
I	CH1	5000.0	20.90	5600	150	150	10.00	KILL	HIGH	+
I	CH 2	5000.0	20.90	5600	150	150	10.00	KILL	HIGH	+
I	CH 3	5000.0	20.90	5600	150	150	10.00	KILL	HIGH	+





CAEN SpA is acknowledged as the only company in the world providing a complete range of High/Low Voltage Power Supply systems and Front-End/Data Acquisition modules which meet IEEE Standards for Nuclear and Particle Physics. Extensive Research and Development capabilities have allowed CAEN SpA to play an important, long term role in this field. Our activities have always been at the forefront of technology, thanks to years of intensive collaborations with the most important Research Centres of the world. Our products appeal to a wide range of customers including engineers, scientists and technical professionals who all trust them to help achieve their goals faster and more effectively.



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Electronic Instrumentation

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