User's Guide

KeithleyVdc Class

Revision: KeithleyVdc-Release_1_1 - Author: pascal_verdier
Implemented in C++ - CVS repository: tango-ds

Introduction:

Device Server for Keithley voltmeter

Class Inheritance:

- Tango::Device_4Impl
  - KeithleyVdc

Properties:

Device Properties

Property name	Property type	Description
DeviceName	Tango::DEV_STRING	This is the serial (or Gpib) line device exported by Serial (or Gpib) Server that will be controlled.
SerialLineControlled	Tango::DEV_BOOLEAN	If set to TRUE, a serial line controller will be used. Otherwise, the gpib interface will be used.
Model	Tango::DEV_STRING	This is the Keithley model. It can be '2001' or '2010'.
Memory	Tango::DEV_LONG	The number of bytes that we download from keithley-memory. For Keithley '2010' is 1024. For Keithley '2001' is 30000.

Device Properties Default Values:

Property Name	Default Values
DeviceName	No default value
SerialLineControlled	TRUE
Model	2010
Memory	1024

There is no Class properties.

Attributes:

Scalar Attributes

Attribute name	Data Type	R/W Type	Expert
DCVoltage: It forces a new measurement, and it has yhis last acquisition.	DEV_DOUBLE	READ	No
PLC: The integration time. It is indicated as a number of power line cycles. It rangesfrom 0.01 to 10	DEV_DOUBLE	READ_WRITE	No
DCRange: The DC voltage range. The voltmeter is in auto range until this parameter is set.	DEV_DOUBLE	READ_WRITE	No
TriggerDelay: The number of milliseconds after the event detection.	DEV_LONG	READ_WRITE	No
TriggerCounts: The number of trigger counts of a measurement, and the received ones.	DEV_LONG	READ_WRITE	No
Digits: The number of resolution digits.	DEV_USHORT	READ_WRITE	No
EnableAutozero: If set to TRUE the autozero is enabled. When enable, accuracy is optimized. When disbled, speed is increased at the expense of accuracy.	DEV_BOOLEAN	READ_WRITE	No
BufferPoints	DEV_LONG	READ_WRITE	No

Spectrum Attributes			
Attribute name	**Data Type**	**X Data Length**	**Expert**
BufferedVoltage: The acquired samples.	DEV_DOUBLE	30000	No

Commands:

More Details on commands....

Device Commands for Operator Level		
Command name	**Argument In**	**Argument Out**
Init	DEV_VOID	DEV_VOID
State	DEV_VOID	DEV_STATE
Status	DEV_VOID	CONST_DEV_STRING
Start	DEV_VOID	DEV_VOID
Stop	DEV_VOID	DEV_LONG
Reset	DEV_VOID	DEV_VOID
GetError	DEV_VOID	DEV_VOID
WriteRead	DEV_STRING	DEV_STRING
SetTimerTrigger	DEV_DOUBLE	DEV_VOID
SetExtTrigger	DEV_VOID	DEV_VOID
SetLinkTrigger	DEV_VOID	DEV_VOID
DownloadBuffer	DEV_VOID	DEV_VOID
SetFilter	DEV_LONG	DEV_VOID
SetTimestampsOn	DEV_VOID	DEV_VOID
SetTimestampsOff	DEV_VOID	DEV_VOID
IncludeReading	DEV_VOID	DEV_VOID
EnableRAV	DEV_VOID	DEV_VOID

1 - Init

- **Description:** This commands re-initialise a device keeping the same network connection.
  After an Init command executed on a device, it is not necessary for client to re-connect to the device.
  This command first calls the device *delete_device()* method and then execute its *init_device()* method.

For C++ device server, all the memory allocated in the *nit_device()* method must be freed in the *delete_device()* method.
The language device desctructor automatically calls the *delete_device()* method.

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  DEV_VOID : none.

- **Command allowed for:**

2 - State

- **Description:** This command gets the device state (stored in its *device_state* data member) and returns it to the caller.

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  DEV_STATE : State Code

- **Command allowed for:**

3 - Status

- **Description:** This command gets the device status (stored in its *device_status* data member) and returns it to the caller.

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  CONST_DEV_STRING : Status description

- **Command allowed for:**

4 - Start

- **Description:** It start a new acquisition.

- **Argin:**
  DEV_VOID :

- **Argout:**

DEV_VOID :

- **Command allowed for:**

5 - Stop

- **Description:** It stops the current acquisition. if 0 Full buffer, No trigger lost. if 1-9 Full buffer, Number of trigger lost. if 100 No Full buffer, No trigger lost. if 101-109 No Full buffer, Number of trigger lost.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_LONG : Number of triggers lost

- **Command allowed for:**

6 - Reset

- **Description:** It resets the device.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

7 - GetError

- **Description:**

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

8 - WriteRead

- **Description:** if the last cmd-character is '?' we check for answer.

- **Argin:**
  DEV_STRING : Command to send to communication line

- **Argout:**
  DEV_STRING : Answer from communication line

- **Command allowed for:**

9 - SetTimerTrigger

- **Description:** Select the Timer as the Trigger source and set the timer Interval (In seconds).

- **Argin:**
  DEV_DOUBLE : Timer Interval in seconds

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

10 - SetExtTrigger

- **Description:** Select an external trigger as source of trigger.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

11 - SetLinkTrigger

- **Description:**

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

12 - DownloadBuffer

- **Description:**

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

13 - SetFilter

- **Description:** Filter counts. If 0 filter off, from 1 to 100 filter on.

- **Argin:**
  DEV_LONG : Filter counts. If 0 filter Off.

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

14 - SetTimestampsOn

- **Description:** Only for Keithely 2001. We store the timestamps in the Keithley and in the data file. No voltages!

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

15 - SetTimestampsOff

- **Description:** Only for Keithely 2001. We don't store the timestamps. Only the voltages!

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

16 - IncludeReading

- **Description:** It includes reading in data string.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

17 - EnableRAV

- **Description:** Measurement event register: reading available.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**