



TANGO
Device
Server

Bumper powersupply User's Guide

Bumper Class

**Revision: Bumper-Release_1_0 - Author: bourtemb
Implemented in C++ - CVS repository: ESRF**

Introduction:

The bumper powersupplies are pulsed powersupplies. They are used to deviate the beam from the booster into the transfer line 2.

Class Inheritance:

- Tango::DeviceImpl
 - PowerSupply
 - Bumper

Properties:

Device Properties		
Property name	Property type	Description
Din_device	Tango::DEV_STRING	Name of the device used to get the state of the powersupply.
Adc_device	Tango::DEV_STRING	Name of the ADC device used to read the voltage.
Dac_device	Tango::DEV_STRING	Name of the DAC device used to set the voltage on the powersupply.
Min_authorized_current	Tango::DEV_DOUBLE	Minimum current in Amps authorised. If the user tries to set a current value below this minimum authorised, the minimum authorised current will be set on the powersupply.
OffVref	Tango::DEV_DOUBLE	The Voltage applied on the dac will be computed as follow: $Vref = OffVref + LinVref * CurrentSetValue$
LinVref	Tango::DEV_DOUBLE	The Voltage applied on the dac will be computed as follow: $Vref = OffVref + LinVref * CurrentSetValue$
Channel	Tango::DEV_USHORT	Bumper power supply channel B1 => channel = 1 B2 => channel = 2 B3 => channel = 3
Dout_device	Tango::DEV_STRING	Name of the device used to change the state of the powersupply. The server will send ON, OFF and RESET commands to the powersupply via this device.

Device Properties Default Values:

Property Name	Default Values
Din_device	No default value
Adc_device	No default value
Dac_device	No default value
Min_authorized_current	70.0
OffVref	0.0
LinVref	0.01
Channel	1
Dout_device	No default value

There is no Class properties.

States:

States	
Names	Descriptions
FAULT	The device is in FAULT state when an error is detected, after the power up of the powersupply and after a change from LOCAL to REMOTE mode.
OFF	No pulse in the magnet
ON	Normal mode of operation (Pulse sent to the magnet)
DISABLE	This state corresponds to the LOCAL mode. Entered by a switch on the front panel of the powersupply.
ALARM	An attribute is in alarm. For example when the read and set values are too much different.
UNKNOWN	There is a communication problem with the IO, ADC or DAC board.

Attributes:

Scalar Attributes			
Attribute name	Data Type	R/W Type	Expert
Current: The powersupply current setting in amps	DEV_DOUBLE	READ_WRITE	No
Voltage: The powersupply voltage in volts.	DEV_DOUBLE	READ_WRITE	Yes
CurrentSetPoint: The current set value as stored in the powersupply.	DEV_DOUBLE	READ	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
On	DEV_VOID	DEV_VOID
Off	DEV_VOID	DEV_VOID
Reset	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:**
 - Tango::FAULT
 - Tango::OFF
 - Tango::ON
 - Tango::DISABLE
 - Tango::ALARM
 - Tango::UNKNOWN

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:**
 - Tango::FAULT
 - Tango::OFF
 - Tango::ON
 - Tango::DISABLE
 - Tango::ALARM
 - Tango::UNKNOWN

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:**
 - Tango::FAULT
 - Tango::OFF
 - Tango::ON
 - Tango::DISABLE
 - Tango::ALARM
 - Tango::UNKNOWN

4 - On

- **Description:** Switch powersupply ON.
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::OFF
 - Tango::ON
 - Tango::ALARM
 - Tango::UNKNOWN

5 - Off

- **Description:** Switch powersupply OFF.
- **Argin:**
DEV_VOID :

- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::OFF
 - Tango::ON
 - Tango::ALARM
 - Tango::UNKNOWN

6 - Reset

- **Description:** Reset the powersupply to a well known state.
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::FAULT
 - Tango::ON
 - Tango::ALARM
 - Tango::UNKNOWN

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Device Servers : CVS repository on tango-ds project