



TANGO Device Server

Beamloss device server
User's Guide

Beamloss Class

Revision: - Author: peru
Implemented in C++ - CVS repository: ESRF

Introduction:

This device is intended to control and monitor a beamloss.

Class Identification:

- **Contact :** at esrf.fr - peru
- **Class Family :** BeamDiag
- **Platform :** Unix Like
- **Bus :** Modbus

Class Inheritance:

- Tango::Device_4Impl
  - Beamloss

Properties:

Device Properties		
Property name	**Property type**	**Description**
WagoDeviceName	Tango::DEV_STRING	The device name of the associated Wago device.
DetectorType	Tango::DEV_STRING	Determines the type of detector ("BLD1", "BLD2", "BREMS" or "IG5").
BldGains	Array of double	
BldCoefficients	Array of double	
BremsGain	Tango::DEV_DOUBLE	
BremsOffset	Tango::DEV_DOUBLE	
CalibrationFactor	Tango::DEV_DOUBLE	Used for IG5 dose rate calculation.
TestVoltageValue	Tango::DEV_DOUBLE	This is the voltage value which is applied when the TestOn command is issued.
BldOffsets	Array of double	
AutoRangeMinRawValue	Tango::DEV_DOUBLE	Minimum raw value used for auto range feature.
AutoRangeMaxRawValue	Tango::DEV_DOUBLE	Maximum raw value used for auto range feature.
AutoRangeWaitTime	Tango::DEV_LONG	Waiting time (expressed in seconds) for auto range feature.

Device Properties Default Values:

Property Name	**Default Values**
WagoDeviceName	No default value
DetectorType	No default value
BldGains	1., 1., 1., 1., 1.
BldCoefficients	1, 3, 9, 27, 81
BremsGain	1.
BremsOffset	0.
CalibrationFactor	3.0e11
TestVoltageValue	No default value
BldOffsets	0., 0., 0., 0., 0.
AutoRangeMinRawValue	0.2
AutoRangeMaxRawValue	9.0
AutoRangeWaitTime	60

There is no Class properties.

States:

States	
Names	**Descriptions**
ON	Normal state of a beamloss detector.
OFF	This state is reached when the beamloss detector is devalidated.
ALARM	This state is reached when voltage limits are encountered.
UNKNOWN	No comment.

Attributes:

Scalar Attributes			
Attribute name	**Data Type**	**R/W Type**	**Expert**
MeanRawVoltage	DEV_DOUBLE	READ	No
Beamloss	DEV_DOUBLE	READ	No
BeamlossMaxValue	DEV_DOUBLE	READ	No
Current	DEV_DOUBLE	READ	No
DoseRate	DEV_DOUBLE	READ	No
Range	DEV_SHORT	READ_WRITE	No
Gain	DEV_DOUBLE	READ_WRITE	No
Offset	DEV_DOUBLE	READ_WRITE	No
Coefficient	DEV_DOUBLE	READ	No
Validated	DEV_BOOLEAN	READ_WRITE	No
AutoRange	DEV_BOOLEAN	READ_WRITE	No
AutoRangeShort	DEV_SHORT	READ_WRITE	No
TestVoltage	DEV_DOUBLE	READ_WRITE	Yes
TestSignal	DEV_BOOLEAN	READ_WRITE	Yes
Averaging	DEV_SHORT	READ_WRITE	No
AveragingSamples: This is the number of samples used for averaging. It's another representation of Averaging in ms.	DEV_SHORT	READ	No

Spectrum Attributes			
Attribute name	**Data Type**	**X Data Length**	**Expert**
RawBuffer	DEV_DOUBLE	12000	No
BeamlossBuffer	DEV_DOUBLE	6000	No
Gains	DEV_DOUBLE	10	Yes
Offsets	DEV_DOUBLE	10	Yes

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
ResetBeamlossMaxValue	DEV_VOID	DEV_VOID
ToggleDebug	DEV_VOID	DEV_VOID
UpdateFromProperties	DEV_VOID	DEV_VOID
TestOn	DEV_VOID	DEV_VOID
TestOff	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::ON
  - Tango::OFF
  - 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::ON
  - Tango::OFF
  - 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::ON
  - Tango::OFF
  - Tango::ALARM
  - Tango::UNKNOWN

4 - ResetBeamlossMaxValue

- **Description:**

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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

5 - ToggleDebug

- **Description:**

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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

6 - UpdateFromProperties

- **Description:**

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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

7 - TestOn

- **Description:** Set the test voltage to the value determined by the property TestVoltageValue.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::ALARM

- Tango::UNKNOWN

8 - TestOff

- **Description:** Set the test voltage to 0.0V.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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