

BiltCh Tango Cpp Class

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BiltCh Class Identification :

Contact : at esrf.fr - meyer
Class Family : Miscellaneous
Platform : Unix Like
Bus : Tango
Manufacturer : itest
Manufacturer ref. : Bilt Module BE548

BiltCh Class Inheritance :

- [Tango::DeviceImpl](#)
 - BiltCh

BiltCh Class Description :

The Bilt multi channel power supply has three individual channels.
This class offers an interface to an individual channel of the power supply.

BiltCh Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
BiltName	Name of the Bilt multi channel power supply device	String	none
PoleNumber	The number of the channel or Pole of the Bilt power supply [0 -2]	short	-1

BiltCh Class Commands				
Name	Input type	Output type	Level	Description
State	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its <i>device_state</i> data member) and returns it to the caller.
Status	DEV_VOID	CONST_DEV_STRING	OPERATOR	This command gets the device status (stored in its <i>device_status</i> data member) and returns it to the caller.
On	DEV_VOID	DEV_VOID	EXPERT	Switch ON all three channels of the Bilt power supply
Off	DEV_VOID	DEV_VOID	EXPERT	Switch Off all three channels of the Bilt power supply
Reset	DEV_VOID	DEV_VOID	EXPERT	Send a reset to the Bilt power supply

Command State :

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

State Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::DEV_STATE	State Code
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Status :

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



Status Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::CONST_DEV_STRING	Status description
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command On :

Switch ON all three channels of the Bilt power supply

On Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Off :

Switch Off all three channels of the Bilt power supply

Off Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Reset :

Send a reset to the Bilt power supply

Reset Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

BiltCh Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
Current	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	The DC current of the selected pole.
Voltage	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	The measured voltage of the selected pole.
Impedance	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Calculated impedance of the selected pole.
SetCurrentRMS	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Statistic when driven by the Libera. RMS value of the AC setpoint applied on the DAC during the last second. $nX = \sqrt{\frac{\sum(\text{setAC}) * \sum(\text{setAC})}{n - ((\sum(\text{setAC})/n) * (\sum(\text{setAC})/n))}}$
SetCurrentAverage	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Statistic when driven by the Libera. The average AC setpoint applied to the DAC during the last second. $nX = \text{SUM}(\text{setAC})/n$
FramesPerSecond	false	false	Scalar	READ	Tango::DEV_ULONG	OPERATOR	Statistic when driven by the Libera. The number of setpoints per second.
ErrorPerSecond	false	false	Scalar	READ	Tango::DEV_ULONG	OPERATOR	Statistic when driven by the Libera. The number of errors detected per second.
ErrorCounter	false	false	Scalar	READ	Tango::DEV_ULONG	OPERATOR	Statistic when driven by the Libera. The total number of errors since the last reset.

LocalControl	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	If true the AC current can be set on the device, otherwise it is driven by the Libera.
SetCurrentAC	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	The AC current setpoint in local mode. If driven by the Libera, the attribute \nattribute value in INVALID.
Temperature1	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Temperature 1 of the pole.
Temperature2	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Temperature 2 of the pole.

There is no dynamic attribute defined.

Attribute Current :

The DC current of the selected pole.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	DC Current
unit	A
standard unit	
display unit	
format	%6.4f
max_value	1.8
min_value	-1.8
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute Voltage :

The measured voltage of the selected pole.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Voltage
unit	V
standard unit	
display unit	
format	%.4f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute Impedance :

Calculated impedance of the selected pole.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Impedance
unit	Ohm
standard unit	
display unit	
format	%.2f
max_value	
min_value	
max_alarm	5.0
min_alarm	2.8
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false

Push DataReady event by user code	Not set
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Attribute SetCurrentRMS :

Statistic when driven by the Libera.\nRMS value of the AC setpoint applied on the DAC during the last second.\n $X = \sqrt{(\text{sum}(\text{setAC}) * \text{sum}(\text{setAC})) / n - ((\text{sum}(\text{setAC})/n) * (\text{sum}(\text{setAC})/n))}$

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	RMS AC current setpoint/s
unit	mA
standard unit	
display unit	
format	%6.3f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute SetCurrentAverage :

Statistic when driven by the Libera.\nThe average AC setpoint applied to the DAC during the last second.\n $X = \text{SUM}(\text{setAC})/n$

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE

Attribute Properties	
label	Average AC current setpoint/s
unit	mA
standard unit	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set

Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

display unit	
format	%6.3f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute FramesPerSecond :

Statistic when driven by the Libera. The number of setpoints per second.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Frames/s
unit	
standard unit	
display unit	
format	%3d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute ErrorPerSecond :

Statistic when driven by the Libera. The number of errors detected per second.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Errors/s
unit	
standard unit	
display unit	
format	%3d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute ErrorCounter :

Statistic when driven by the Libera.\nThe total number of errors since the last reset.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Error Counter
unit	
standard unit	
display unit	
format	%6d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false

Push DataReady event by user code	Not set
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Attribute LocalControl :

If true the AC current can be set on the device, \notherwise it is driven by the Libera.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	Local Control
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute SetCurrentAC :

The AC current setpoint in local mode. If driven by the Libera, the attribute \nattribute value in INVALID.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false

Attribute Properties	
label	AC Current Setpoint
unit	A
standard unit	
display unit	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set

Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

format	%5.4f
max_value	0.2
min_value	-0.2
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute Temperature1 :

Temperature 1 of the pole.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Temperature 1
unit	C
standard unit	
display unit	
format	%6.0f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute Temperature2 :

Temperature 2 of the pole.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Temperature 2
unit	C
standard unit	
display unit	
format	%6.0f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

BiltCh Class States	
Name	Description
ON	Magnet is ON, all three channels are ON.
OFF	Magnet is OFF, all three channels are OFF.
FAULT	Error detected by the BILT magnet.
ALARM	Alarm detected on one or more channels.
UNKNOWN	Communication fault