

## PiezoPiE871 Tango Cpp Class

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### PiezoPiE871 Class Identification :

Contact : at mail.desy.de - trunez  
Class Family : Motion  
Platform : Unix Like  
Bus : Not Applicable  
Manufacturer : Physik Instrumente (PI)  
Manufacturer ref. : E871

### PiezoPiE871 Class Inheritance :

- [Tango::DeviceImpl](#)
  - PiezoPiE871

### PiezoPiE871 Class Description :

Class for controlling Piezo Pi controllers from the serie E871, E873

## PiezoPiE871 Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
SimulationMode		boolean	true
AxisId	number / id of axis	short	1
CtrlDevice	Name of the device of the PiezoPiCtrl class to connect to.	String	none

PiezoPiE871 Class Commands				
Name	Input type	Output type	Level	Description
<a href="#">State</a>	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its device_state data member) and returns it to the caller.
<a href="#">Status</a>	DEV_VOID	CONST_DEV_STRING	OPERATOR	This command gets the device status (stored in its device_status data member) and returns it to the caller.
<a href="#">Home</a>	DEV_VOID	DEV_VOID	OPERATOR	Drive axis to reference position
<a href="#">StopMove</a>	DEV_VOID	DEV_VOID	OPERATOR	None.
<a href="#">DefineHomePositon</a>	DEV_VOID	DEV_VOID	OPERATOR	Set current position to 0
<a href="#">ReferenceMotor</a>	DEV_VOID	DEV_VOID	OPERATOR	Move motor to reference position. Needed after power off. Not referenced motors can not be moved or homed.
<a href="#">MoveToPosLimit</a>	DEV_VOID	DEV_VOID	OPERATOR	Fast reference move to physical positive limit. Servo mode should be on.
<a href="#">MoveToNegLimit</a>	DEV_VOID	DEV_VOID	OPERATOR	Fast reference move to physical negative limit. Servo mode should be on.
<a href="#">SaveParameters</a>	DEV_VOID	DEV_VOID	OPERATOR	Write parameters in the nonvolatile memory

## 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	Device state
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **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	Device status
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command Home :**

Drive axis to reference position

Home Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..

Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> <li>• INIT</li> <li>• FAULT</li> </ul>	..

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**Command StopMove :**

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

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**Command DefineHomePositon :**

Set current position to 0

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

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### **Command ReferenceMotor :**

Move motor to reference position. Needed after power off.  
Not referenced motors can not be moved or homed.

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

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### **Command MoveToPosLimit :**

Fast reference move to physical positive limit. Servo mode should be on.

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

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### **Command MoveToNegLimit :**

Fast reference move to physical negative limit. Servo mode should be on.

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

### **Command SaveParameters :**

Write parameters in the nonvolatile memory

<b>SaveParameters Definition</b>		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

<b>PiezoPiE871 Class Attributes</b>							
<b>Name</b>	<b>Inherited</b>	<b>Abstract</b>	<b>Attr. type</b>	<b>R/W type</b>	<b>Data type</b>	<b>Level</b>	<b>Description</b>
<a href="#">Position</a>	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	
<a href="#">UnitLimitMin</a>	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	
<a href="#">UnitLimitMax</a>	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	
<a href="#">ServoMode</a>	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	0 = servo mode off (open-loop operation) 1 = servo mode on (closed-loop operation)

							Movements only allowed if servo mode is 1.
<a href="#">PTerm</a>	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	P Term
<a href="#">ITerm</a>	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	I Term
<a href="#">NotchFilterFrequency</a>	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Notch Filter Frequency
<a href="#">NotchFilterEdge</a>	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Notch Filter Edge

**There is no dynamic attribute defined.**

**Attribute Position :**

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 NOT allowed for	<ul style="list-style-type: none"> <li>• FAULT</li> </ul>
Write NOT allowed for	<ul style="list-style-type: none"> <li>• INIT</li> <li>• FAULT</li> </ul>

Attribute Properties	
label	
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	false

**Attribute UnitLimitMin :**

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	true
Write hardware at init.	true
Read NOT allowed for	<ul style="list-style-type: none"> <li>• FAULT</li> </ul>
Write NOT allowed for	<ul style="list-style-type: none"> <li>• INIT</li> <li>• FAULT</li> </ul>

Attribute Properties	
label	
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	false

**Attribute UnitLimitMax :**

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

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	

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



Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read NOT allowed for	<ul style="list-style-type: none"> <li>FAULT</li> </ul>
Write NOT allowed for	<ul style="list-style-type: none"> <li>INIT</li> <li>FAULT</li> </ul>

min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Periodic	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	false

### **Attribute ServoMode :**

- 0 = servo mode off (open-loop operation)
- 1 = servo mode on (closed-loop operation)
- Movements only allowed if servo mode is 1.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
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	
unit	
standard unit	
display unit	
format	
max_value	1
min_value	0
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	false

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**Attribute PTerm :**

P Term

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
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	
unit	
standard unit	
display unit	
format	
max_value	32767
min_value	0
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	false

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**Attribute ITerm :**

I Term

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE

Attribute Properties	
label	
unit	

Attribute Event Criteria	
Periodic	Not set
	Not

Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

standard unit	
display unit	
format	
max_value	32767
min_value	0
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Relative Change	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	false

**Attribute NotchFilterFrequency :**

Notch Filter Frequency

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	
unit	Hz
standard unit	
display unit	
format	
max_value	20000
min_value	40
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	false
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**Attribute NotchFilterEdge :**

Notch Filter Edge

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	
unit	
standard unit	
display unit	
format	
max_value	10
min_value	0.1
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	false

PiezoPiE871 Class States	
Name	Description
ON	
FAULT	

MOVING