Pico104 Tango Cpp Class

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Pico104 Class Identification :

Contact	: at null - null
Class Family	:
Platform	:
Bus	:
Manufacturer	:
Manufacturer ref.	:

Pico104 Class Inheritance :

- Tango::DeviceImpl
  - Pico104

Pico104 Class Description :

Device Server for the PT-104 Thermistor Converter, Pico Technology Ltd.
The PT-104 is a 4 channel, high resolution temperature converter used with PT100 and PT1000 sensors.
It can be used for temperature, resistance and voltage measurements.

Pico104 Properties :

There is no class properties

Device Properties			
Name	**Description**	**Type**	**Default Value**
Mains	Select the mains frequency: - 0 means 50 Hz - 1 means 60 Hz.	short	0
Port_no	Serial port number for PT-104 connection. Set to: 1 for COM1 2 for COM2 3 for COM3 4 for COM4.	short	1

Pico104 Class Commands				
Name	**Input type**	**Output type**	**Level**	**Description**
State	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its *device_state* data member) and returns it to the caller.
Status	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.
Reset	DEV_VOID	DEV_VOID	OPERATOR	None.
Configure	DEVVAR_USHORTARRAY	DEV_VOID	OPERATOR	Set channel configuration. Needs 3 parameters: channel number, sensor type & number of wires. Only the channels that will be used for readings should be configured. The command should be called before attempting to read from channels.

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	true	..
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	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Reset :

Reset 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	..

Command Configure :

Set channel configuration. Needs 3 parameters: channel number, sensor type & number of wires. Only the channels that will be used for readings should be configured.

The command should be called before attempting to read from channels.

Configure Definition		
Input Argument	Tango::DEVVAR_USHORTARRAY	Command argument should be a list of 3 numbers separated by comma.\nThe numbers in the list represent:\n Channel number - 1 to 4, \n Channel sensor type - see below, \n Channel number of wires - 2, 3 or 4,\nrespectively.\n\nPossible sensor types are:\n 1 - PT100\n 2 - PT1000\n 3 - resistance in range 0 to 500 Ohm\n 4 - resistance in range 0 to 10k Ohm\n 5 - differential voltage in range 0 to 100 mV\n 6 - differential voltage in range 0 to 2.5 V\n 7 - single-ended voltage in range 0 to 100 mV\n 8 - single-ended voltage in range 0 to 2.5 V
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..

Command allowed for	All states	..

Pico104 Class Attributes							
Name	**Inherited**	**Abstract**	**Attr. type**	**R/W type**	**Data type**	**Level**	**Description**
Dev_version	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	PT-104 version number.
Dev_calib_no	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	Device calibration number.
Dev_calib_date	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	Device calibration date.
Dev_batch_no	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	Device batch number.
Cycles	false	false	Scalar	READ	Tango::DEV_ULONG	OPERATOR	Number of complete cycles of readings taken from the PT-104 device.
Channels	false	false	Spectrum	READ	Tango::DEV_LONG	OPERATOR	The values read from the PT-104 input channels stored in an array.
Channel_types	false	false	Spectrum	READ	Tango::DEV_USHORT	OPERATOR	Type of reading required for each channel stored in an array.\nPossible sensor types are:\n 1 - PT100\n 2 - PT1000\n 3 - resistance in range 0 to 500 Ohm\n 4 - resistance in range 0 to 10k Ohm\n 5 - differential voltage in range 0 to 100 mV\n 6 - differential voltage in range

							0 to 2.5 V\n 7 - single-ended voltage in range 0 to 100 mV\n 8 - single-ended voltage in range 0 to 2.5 V
Channel_wires	false	false	Spectrum	READ	Tango::DEV_USHORT	OPERATOR	Number of wires of the PT100/PT1000 connected to each channel.

There is no dynamic attribute defined.

Attribute Dev_version :

PT-104 version number.

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

Attribute Properties	
label	Version number
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 Dev_calib_no :

Device calibration number.

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

Attribute Properties	
label	Calibration number
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 Dev_calib_date :

Device calibration date.

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

Attribute Properties	
label	Calibration date
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 Dev_batch_no :

Device batch number.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_STRING
Display Level	OPERATOR

Attribute Properties	
label	Batch number
unit	
standard unit	
display unit	
format	

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

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

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 Cycles :

Number of complete cycles of readings taken from the PT-104 device.

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	Number of reading cycles
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 Channels :

The values read from the PT-104 input channels stored in an array.

Attribute Definition	
Attribute Type	Spectrum (4)
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Channel values
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 Channel_types :

Type of reading required for each channel stored in an array.\nPossible sensor types are:\n 1 - PT100\n 2 - PT1000\n 3 - resistance in range 0 to 500 Ohm\n 4 - resistance in range 0 to 10k Ohm\n 5 - differential

voltage in range 0 to 100 mV\n 6 - differential voltage in range 0 to 2.5 V\n 7 - single-ended voltage in range 0 to 100 mV\n 8 - single-ended voltage in range 0 to 2.5 V

Attribute Definition	
Attribute Type	Spectrum (4)
R/W Type	READ
Data Type	Tango::DEV_USHORT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Sensor type
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 Channel_wires :

Number of wires of the PT100/PT1000 connected to each channel.

Attribute Definition	
Attribute Type	Spectrum (4)
R/W Type	READ

Attribute Properties	
label	Number of wires per channel
unit	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set

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

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

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

Pico104 Class States	
Name	**Description**
ON	
OFF	