

## PyAlarm Tango Python Class

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### **PyAlarm Class Identification :**

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

### **PyAlarm Class Inheritance :**

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

### **PyAlarm Class Description :**

This device server is used as a alarm logger, it connects to the list of attributes provided and verifies its values.

Its focused on notifying Alarms by log files, Mail, SMS and (some day in the future) electronic logbook.

It allows to setup alarms based on attribute values, connection status and boolean combinations of them.

Independent configuration and mailing lists available for each alarm.

You can acknowledge these alarms by a proper command.

This device requires [Fandango module](#) to be available in the PYTHONPATH.

### PyAlarm Properties :

Class Properties			
Name	Description	Type	Default Value
PhoneBook	List of alarms declared like.: User:user@accelerator.es;SMS:+34666555666	String[]	none
SMSConfig	Arguments for sendSMS command	String	:
FromAddress	Address that will appear as Sender in mail and SMS	String	oncall
AllowedActions	List of OS commands that alarms are able to execute.	String[]	none
StartupDelay	Number of seconds that PyAlarm will wait before starting to evaluate alarms.	int	60

Device Properties			
Name	Description	Type	Default Value
AlarmList	List of alarms to be monitorized. The format is:  domain/family/member #It simply checks that dev is alive  domain/family/member/attribute> VALUE  domain/family/member/State == UNKNOWN  domain/family/ * /Temperature> VALUE  When using wildcards all slash / must be included	String[]	none
AlarmReceivers	Users that will be notified for each alarm. The format is:  [TYPE]:[ADDRESS]:[attributes];...  [TYPE]: MAIL / SMS  [ADDRESS] : operator@accelerator.es / +34666555444  [attributes]: domain/family/member/attribute;domain/family/ *	String[]	none
AlarmDescriptions	Description to be included in emails for each alarm. The format is:  TAG:AlarmDescription...	String[]	none
AlarmConfigurations	Configuration customization applicable to each alarm. The format is:  TAG:PAR1=Value1;PAR2=Value2;...	String[]	none
	ALARM:DEBUG/INFO/WARNING/ERROR #DEBUG alarms will not trigger		

AlarmSeverities	messages	String[]	none
LogFile	File where alarms are logged, like /tmp/alarm_\$(NAME).log	String	none
LogLevel	stdout log filter	String	INFO
HtmlFolder	File where alarm reports are saved	String	htmlreports
AlarmThreshold	Min number of consecutive Events/Pollings that must trigger an Alarm.	int	3
Enabled	If False forces the device to Disabled state and avoids messaging; if INT then it will last only for N seconds after Startup; if a python formula is written it will be used to enable/disable the device	String	`120`
AlertOnRecovery	It can contain `email` and/or `sms` keywords to specify if an automatic message must be sent in case of alarm returning to safe level.	String	false
FlagFile	File where a 1 or 0 value will be written depending if theres active alarms or not. This file can be used by other notification systems.	String	/tmp/alarm_ds.nagios
PollingPeriod	Periode in SECONDS in which all attributes not event-driven will be polled; @TODO for convenience any value above 300 will be divided by 1000, it must be DEPRECATED in the future.	float	15.
MaxMessagesPerAlarm	Max Number of messages to be sent each time that an Alarm is activated/recovered/reset.	int	20
FromAddress	Address that will appear as Sender in mail and SMS	String	oncall
SMSConfig	Arguments for sendSMS command	String	:
UseSnap	If false no snapshots will be trigered (unless specifically added to receivers)	boolean	True
CreateNewContexts	It enables PyAlarm to create new contexts for alarms if no matching context exists in the database.	boolean	False
Reminder	If a number of seconds is set, a reminder mail will be sent while the alarm is still active, if 0 no Reminder will be sent.	int	0
AutoReset	If a number of seconds is set, the alarm will reset if the conditions are no longer active after the given interval.	float	3600.
StartupDelay	Number of seconds that PyAlarm will wait before starting to evaluate alarms.	int	0
EvalTimeout	Timeout for read_attribute calls, in milliseconds .	int	500
UseProcess	To create new OS processes instead of threads.	boolean	False
UseTaurus	Use Taurus to connect to devices instead of plain PyTango.	boolean	False
RethrowState	Whether exceptions in State reading will activate the Alarm.	boolean	True
RethrowAttribute	Whether exceptions in Attribute reading will activate the Alarm.	boolean	False
IgnoreExceptions	Value can be False/True/NaN to return Exception, None or NotANumber in case of read_attribute exception.	String	`True`

PyAlarm 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 <i>device_state</i> 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 <i>device_status</i> data member) and returns it to the caller.
<a href="#">AddReceiver</a>	DEVVAR_STRINGARRAY	DEVVAR_STRINGARRAY	EXPERT	Returns the actual value of AlarmReceivers
<a href="#">EvaluateFormula</a>	DEV_STRING	DEV_STRING	OPERATOR	Evaluate an Alarm formula
<a href="#">ResetAlarm</a>	DEVVAR_STRINGARRAY	DEVVAR_STRINGARRAY	OPERATOR	Reset alarm, it will be removed from active alarms
<a href="#">Acknowledge</a>	DEVVAR_STRINGARRAY	DEVVAR_STRINGARRAY	OPERATOR	Acknowledge alarm no more reminders will be sent
<a href="#">Renounce</a>	DEV_STRING	DEV_STRING	OPERATOR	Renounce (opposite to acknowledge) all

<a href="#">Enable</a>	DEV_STRING	DEV_STRING	OPERATOR	emails will be send again Enable alarm that was put to disable state
<a href="#">Disable</a>	DEVVAR_STRINGARRAY	DEV_STRING	OPERATOR	Disable enabled alarm.
<a href="#">ResetAll</a>	DEVVAR_STRINGARRAY	DEV_STRING	OPERATOR	Acknowledge alarm that was put into the file with alarms, it will be removed from active alarms
<a href="#">GetRelease</a>	DEV_VOID	DEV_STRING	OPERATOR	
<a href="#">GenerateReport</a>	DEVVAR_STRINGARRAY	DEVVAR_STRINGARRAY	OPERATOR	Generates report message
<a href="#">CreateAlarmContext</a>	DEVVAR_STRINGARRAY	DEV_LONG	OPERATOR	Creates an Snap context for this Alarm
<a href="#">SendMail</a>	DEVVAR_STRINGARRAY	DEV_STRING	OPERATOR	Sends a mail message
<a href="#">SaveHtml</a>	DEVVAR_STRINGARRAY	DEV_STRING	OPERATOR	Saves a html report
<a href="#">SendSMS</a>	DEVVAR_STRINGARRAY	DEV_STRING	OPERATOR	Sends an SMS message
<a href="#">CheckAcknowledged</a>	DEV_STRING	DEV_BOOLEAN	OPERATOR	Check if the alarm is on AcknowledgedAlarms list.
<a href="#">CheckDisabled</a>	DEV_STRING	DEV_BOOLEAN	OPERATOR	Check if the alarm is on DisabledAlarms list.

### 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	..

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### **Command AddReceiver :**

Returns the actual value of AlarmReceivers

<b>AddReceiver Definition</b>		
Input Argument	Tango::DEVVAR_STRINGARRAY	Attribute,ReceiverAddress
Output Argument	Tango::DEVVAR_STRINGARRAY	AlarmReceivers values
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command EvaluateFormula :**

Evaluate an Alarm formula

<b>EvaluateFormula Definition</b>		
Input Argument	Tango::DEV_STRING	alarm formula to test with the current environment
Output Argument	Tango::DEV_STRING	result obtained
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command ResetAlarm :**

Reset alarm, it will be removed from active alarms

<b>ResetAlarm Definition</b>		
Input Argument	Tango::DEVVAR_STRINGARRAY	This is used to inform which alarm should be reset. If it doesn't exist an error occurs, comment
Output Argument	Tango::DEVVAR_STRINGARRAY	If succeed, returns the list of ActiveAlarms

DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

**Command Acknowledge :**

Acknowledge alarm no more reminders will be sent

Acknowledge Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	This is used to inform which alarm should be acknowledged, no more reminders will be sent, comment
Output Argument	Tango::DEVVAR_STRINGARRAY	If succeed, returns the list of ActiveAlarms
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

**Command Renounce :**

Renounce (opposite to acknowledge) all emails will be send again

Renounce Definition		
Input Argument	Tango::DEV_STRING	This is used to inform which alarm should be renounced, all reminders will be send again.
Output Argument	Tango::DEV_STRING	If succeed, returns DONE
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

**Command Enable :**

Enable alarm that was put to disable state

Enable Definition		
Input Argument	Tango::DEV_STRING	(TAG,) This is used to inform which alarm should be enabled, alarm won't skip the updateAlarms loop
Output Argument	Tango::DEV_STRING	If succeed, returns DONE
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

**Command Disable :**

Disable enabled alarm.

Disable Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	(TAG,comment,[timeout s/m/h/d]) Disable an alarm (skips update loop) until timeout
Output Argument	Tango::DEV_STRING	If succeed, returns DONE
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

**Command ResetAll :**

Acknowledge alarm that was put into the file with alarms, it will be removed from active alarms

ResetAll Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	User message
Output Argument	Tango::DEV_STRING	
DisplayLevel	OPERATOR	..

Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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**Command GetRelease :**

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

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**Command GenerateReport :**

Generates report message

GenerateReport Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	tag,message,receivers,...,description
Output Argument	Tango::DEVVAR_STRINGARRAY	result, subject, receivers
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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**Command CreateAlarmContext :**

Creates an Snap context for this Alarm



<b>CreateAlarmContext Definition</b>		
Input Argument	Tango::DEVVAR_STRINGARRAY	tag,attributes,...
Output Argument	Tango::DEV_LONG	new context ID
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command SendMail :**

Sends a mail message

<b>SendMail Definition</b>		
Input Argument	Tango::DEVVAR_STRINGARRAY	message,subject,receivers
Output Argument	Tango::DEV_STRING	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command SaveHtml :**

Saves a html report

<b>SaveHtml Definition</b>		
Input Argument	Tango::DEVVAR_STRINGARRAY	message,subject
Output Argument	Tango::DEV_STRING	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command SendSMS :**

Sends an SMS message

SendSMS Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	tag/message,receivers,...
Output Argument	Tango::DEV_STRING	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command CheckAcknowledged :**

Check if the alarm is on AcknowledgedAlarms list.

CheckAcknowledged Definition		
Input Argument	Tango::DEV_STRING	alarm tag
Output Argument	Tango::DEV_BOOLEAN	true if alarm is on the list else false
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command CheckDisabled :**

Check if the alarm is on DisabledAlarms list.

CheckDisabled Definition		
Input Argument	Tango::DEV_STRING	alarm tag
Output Argument	Tango::DEV_BOOLEAN	true if alarm is on the list else false
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

PyAlarm Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
<a href="#">VersionNumber</a>	false	false	Scalar	READ	Tango::DEV_STRING	EXPERT	Version number and release note
<a href="#">LastAlarm</a>	false	false	Scalar	READ	Tango::DEV_STRING	EXPERT	Returns Alarm:AlarmDate for last alarms until each is read once, then it's cleared (used for archiving)
<a href="#">AlarmConfiguration</a>	false	false	Spectrum	READ	Tango::DEV_STRING	EXPERT	Returns Property:Value list
<a href="#">ActiveAlarms</a>	false	false	Spectrum	READ	Tango::DEV_STRING	OPERATOR	Retrieves a list of Active Alarms showing AlarmDate:AlarmDescription
<a href="#">PastAlarms</a>	false	false	Spectrum	READ	Tango::DEV_STRING	OPERATOR	Returns AlarmDate:ACKDate:AlarmDescription for all OLD alarms already acknowledged
<a href="#">AlarmList</a>	false	false	Spectrum	READ	Tango::DEV_STRING	OPERATOR	Returns the content of the AlarmList property
<a href="#">AlarmReceivers</a>	false	false	Spectrum	READ	Tango::DEV_STRING	OPERATOR	Returns the content of the AlarmReceivers property
<a href="#">PhoneBook</a>	false	false	Spectrum	READ	Tango::DEV_STRING	OPERATOR	
<a href="#">SentEmails</a>	false	false	Image	READ	Tango::DEV_STRING	OPERATOR	
<a href="#">SentSMS</a>	false	false	Image	READ	Tango::DEV_STRING	OPERATOR	
<a href="#">AcknowledgedAlarms</a>	false	false	Spectrum	READ	Tango::DEV_STRING	OPERATOR	
<a href="#">DisabledAlarms</a>	false	false	Spectrum	READ	Tango::DEV_STRING	OPERATOR	
<a href="#">FailedAlarms</a>	false	false	Spectrum	READ	Tango::DEV_STRING	OPERATOR	

**There is no dynamic attribute defined.**

**Attribute VersionNumber :**

Version number and release note

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

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	

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

delta_time
delta_val

Push DataReady event by user code	Not set
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**Attribute LastAlarm :**

Returns Alarm:AlarmDate for last alarms until each is read once, then it's cleared (used for archiving)

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_STRING
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• INIT

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	Not set

**Attribute AlarmConfiguration :**

Returns Property:Value list

Attribute Definition	
Attribute Type	Spectrum ( 512 )
R/W Type	READ
Data Type	Tango::DEV_STRING
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	

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

delta_time
delta_val

**Attribute ActiveAlarms :**

Retrieves a list of Active Alarms showing AlarmDate:AlarmDescription

Attribute Definition	
Attribute Type	Spectrum ( 512 )
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	
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 PastAlarms :**

Returns AlarmDate:ACKDate:AlarmDescription for all OLD alarms already acknowledged

Attribute Definition	
Attribute Type	Spectrum ( 512 )
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	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	

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

delta\_val

### Attribute AlarmList :

Returns the content of the AlarmList property

Attribute Definition	
Attribute Type	Spectrum ( 512 )
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	
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 AlarmReceivers :

Returns the content of the AlarmReceivers property

Attribute Definition	
Attribute Type	Spectrum ( 512 )
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	
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 PhoneBook :**

Attribute Definition	
Attribute Type	Spectrum ( 512 )
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	
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 SentEmails :**

Attribute Definition	
Attribute Type	Image ( 512 x 512 )
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	
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 SentSMS :**

Attribute Definition	
Attribute Type	Image ( 512 x 512 )
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	
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 AcknowledgedAlarms :**

Attribute Definition	
Attribute Type	Spectrum ( 512 )
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	
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 DisabledAlarms :**



Attribute Definition	
Attribute Type	Spectrum ( 512 )
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	
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 FailedAlarms :**

Attribute Definition	
Attribute Type	Spectrum ( 512 )
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	
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

PyAlarm Class States	
Name	Description

ON	ActiveAlarms list is empty
ALARM	Size of ActiveAlarms is >= 1