

# OxfCryostreamCooler Tango Cpp Class

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## **OxfCryostreamCooler Class Identification :**

Contact : at mail.desy.de - tnunez  
 Class Family : Instrumentation  
 Platform : Unix Like  
 Bus : Data Socket  
 Manufacturer : Oxford Cryosystems  
 Manufacturer ref. : 700 Series Cryostream Cooler

## **OxfCryostreamCooler Class Inheritance :**

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

## OxfCryostreamCooler Class Description :

Class for controlling and displaying info from the 700 Series Cryostream Cooler from Oxford Cryosystems.

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## OxfCryostreamCooler Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
SocketDS	Tango device making the socket connection	String	none

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OxfCryostreamCooler 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="#">RestartCooler</a>	DEV_VOID	DEV_VOID	OPERATOR	Restart a Cryostream which has shutdown
<a href="#">Hold</a>	DEV_VOID	DEV_VOID	OPERATOR	Enter programmed Hold

<a href="#">Pause</a>	DEV_VOID	DEV_VOID	OPERATOR	Enter temporary Hold
<a href="#">Resume</a>	DEV_VOID	DEV_VOID	OPERATOR	Exit temporary Hold
<a href="#">StopCooler</a>	DEV_VOID	DEV_VOID	OPERATOR	Stop command identifier
<a href="#">SwitchTurbo</a>	DEV_SHORT	DEV_VOID	OPERATOR	Switches Turbo on (1) or off (0)
<a href="#">Ramp</a>	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	Change temperature at a controlled rate.
<a href="#">Plat</a>	DEV_DOUBLE	DEV_VOID	OPERATOR	Fix temperature for a given time.
<a href="#">Cool</a>	DEV_DOUBLE	DEV_VOID	OPERATOR	Cool down
<a href="#">ShutdownCooler</a>	DEV_DOUBLE	DEV_VOID	OPERATOR	Shutdown cooler (sends END command)

### **Command State :**

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

<b>State Definition</b>		
Input Argument	Tango::DEV_VOID	none
Output Argument	Tango::DEV_STATE	Device state
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	Device status
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command RestartCooler :**

Restart a Cryostream which has shutdown

RestartCooler 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 Hold :**

Enter programmed Hold

<b>Hold 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	..

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### **Command Pause :**

Enter temporary Hold

<b>Pause 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	..

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### **Command Resume :**

Exit temporary Hold

<b>Resume 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	..

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### **Command StopCooler :**

Stop command identifier

<b>StopCooler 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	..

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### **Command SwitchTurbo :**

SwitchesTurbo on (1) or off (0)

<b>SwitchTurbo Definition</b>		
Input Argument	Tango::DEV_SHORT	0 off, 1 on

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

### **Command Ramp :**

Change temperature at a controlled rate.

<b>Ramp Definition</b>		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	Ramp rate in K/hour, final temperature in centi-Kelvin
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

### **Command Plat :**

Fix temperature for a given time.

<b>Plat Definition</b>		
Input Argument	Tango::DEV_DOUBLE	Plateau time in minutes
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..

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

### **Command Cool :**

Cool down

<b>Cool Definition</b>		
Input Argument	Tango::DEV_DOUBLE	End temperature in centi-Kelvin
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

### **Command ShutdownCooler :**

Shutdown cooler (sends END command)

<b>ShutdownCooler Definition</b>		
Input Argument	Tango::DEV_DOUBLE	Ramp rate in K/h
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..



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

OxfCryostreamCooler Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
<a href="#">GasTemp</a>	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Gas temperature
<a href="#">GasTempSetPoint</a>	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Set temperature
<a href="#">RunMode</a>	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	Current run mode
<a href="#">GasHeat</a>	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Gas heater
<a href="#">GasFlow</a>	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Gas flow

**There is no dynamic attribute defined.**

### **Attribute GasTemp :**

Gas temperature

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

Attribute Properties	
label	
unit	K
standard unit	
display unit	
format	
max_value	

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

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	false

### **Attribute GasTempSetPoint :**

Set temperature

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	
unit	K
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
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**Attribute RunMode :**

Current run mode

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	
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 GasHeat :**

Gas heater

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	
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 GasFlow :**

Gas flow

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

Attribute Properties	
label	
unit	l/min
standard unit	
display unit	

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

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

format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

	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

OxfCryostreamCooler Class States	
Name	Description
ON	Idle state
MOVING	Performing command
FAULT	